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Company	: BVI Border	Date	: 25 July 2018
Attention	: Mr. Werner De Lange	email	: WernerDL@bvi.co.za
From	: Mr. Frikkie De Jager	Total pages	: 46

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GEOTECHNICAL PRELIMINARY REPORT – ELIDZ PLATFORM A

The following preliminary report is given for the above-mentioned project, for the area designated for Platform A.

Test pit excavation and profiling

A total of 28 test pits, numbered Test Pit A1 to A31 were excavated in the most northern portion of the project area designated for Platform A and future expansions. A total of 19 of the 28 test pits were excavated within the proposed footprint of Platform A. The positions of the test pits are indicated in the Figure below, with detailed test pit logs attached in the end of this document for reference. Please note that several test pits could not be excavated in the required positions due to very dense vegetation. ELDZC officials did not give permission that the more prominent trees could be cut down to gain access to these positions.



Figure 1: Test pit positions and numbering on Platform A

Excavatability conditions

It was possible to excavate the test pits utilising a JCB 3CX 4x4 TLB-type excavator, fitted with a 300 rock-bucket, to a depth between 1.15 and 2.60 mbgl (mean 1.70 mbgl) after which excavation refused in all test pits on moderately hard rock to hard rock siltstone and mudstone bedrock material.

Siltstone or mudstone bedrock material was encountered in all test pits from between 0.80 and 1.75 mbgl (mean 1.23 mbgl).

Excavatability conditions can be summarised as follow:

- From Surface to 1.0 mbgl - Soft Excavation Class
- From 1.0 mbgl to 2.5 mbgl - Intermediate Excavation Class with pockets of Hard Rock Excavation

General soil conditions

The area is generally covered by hillwash material that is composed of sandy clay that exhibits a firm consistency and intact soil structure. Plant roots were recorded in this material over the entire site. The hillwash material becomes ferruginised at depth in localised portions of the area, characterised in profile by the occurrence of ferricrete nodules. The hillwash material extends to a maximum depth of approximately 1.20 mbgl.

The transported material is underlain by residual siltstone / mudstone that is composed of sandy clay to clayey sand with scattered to occasional siltstone / mudstone gravel to cobbles. The material exhibits a firm to stiff consistency and fractured and inherent structure, with a maximum thickness of approximately 1.0 m. The upper portion of the residual materials are generally ferruginised, characterised in profile by scattered to abundant ferricrete nodules.

Siltstone or mudstone bedrock material was encountered in all test pits from a depth between 0.80 to 1.75 mbgl (mean 1.23 mbgl). The material is highly to moderately weathered, fine grained, medium jointed with a soft rock to moderately hard rock hardness.

The generalised soil profile and sections are indicated in the figures below.



Figure 2: Cross section indication for Platform A

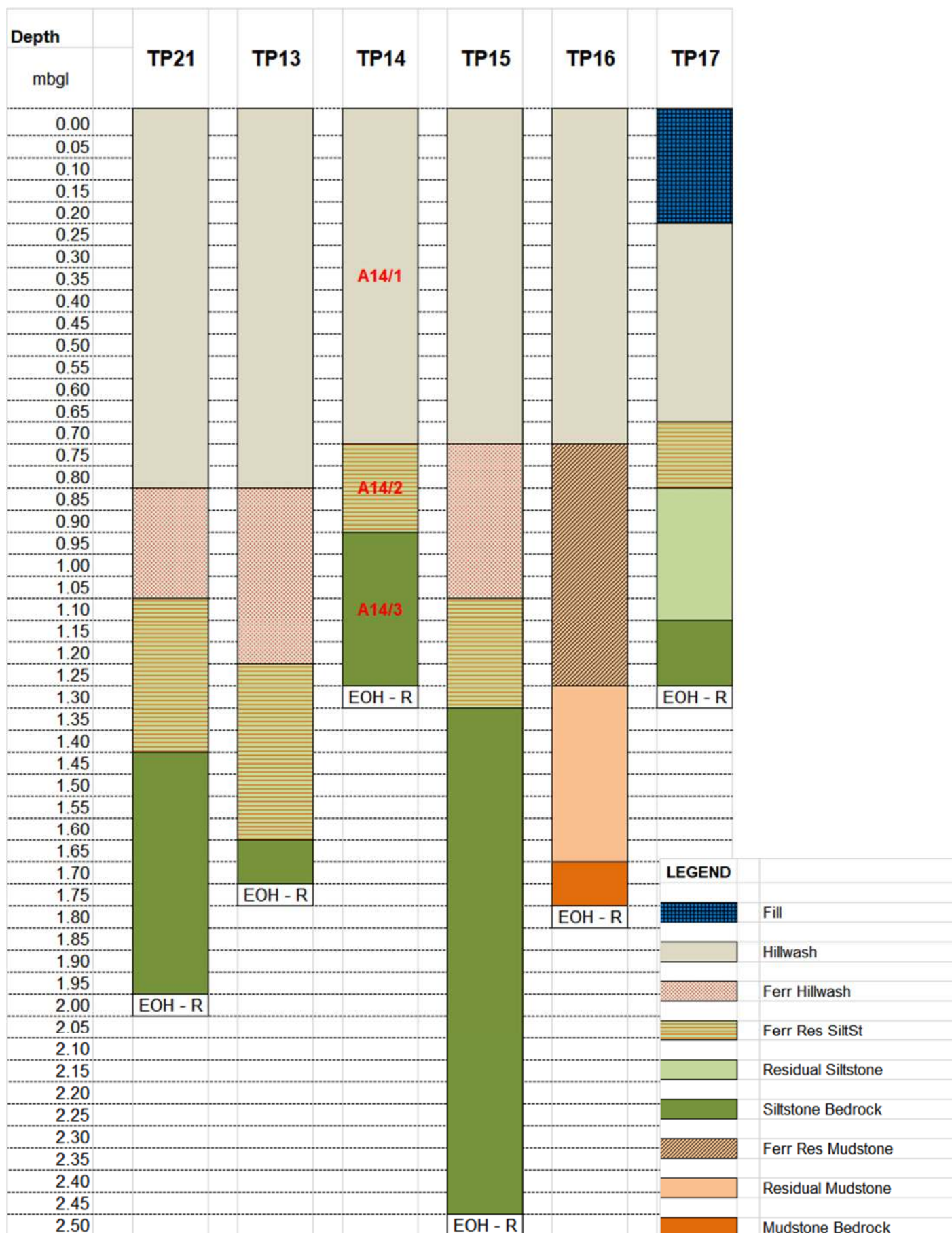


Figure 3: Generalised soil conditions – Section A-B

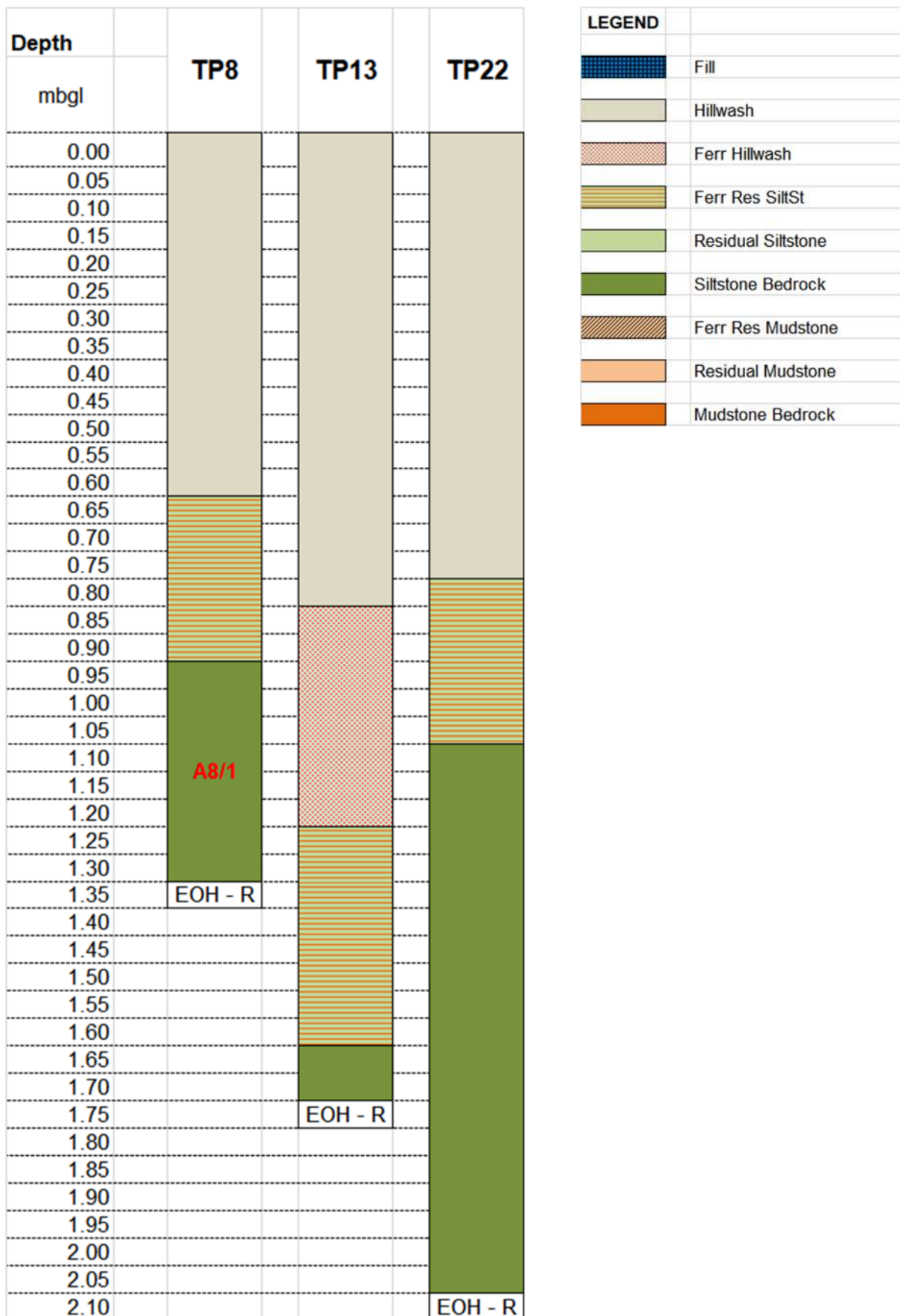


Figure 4: Generalised soil conditions – Section C-D

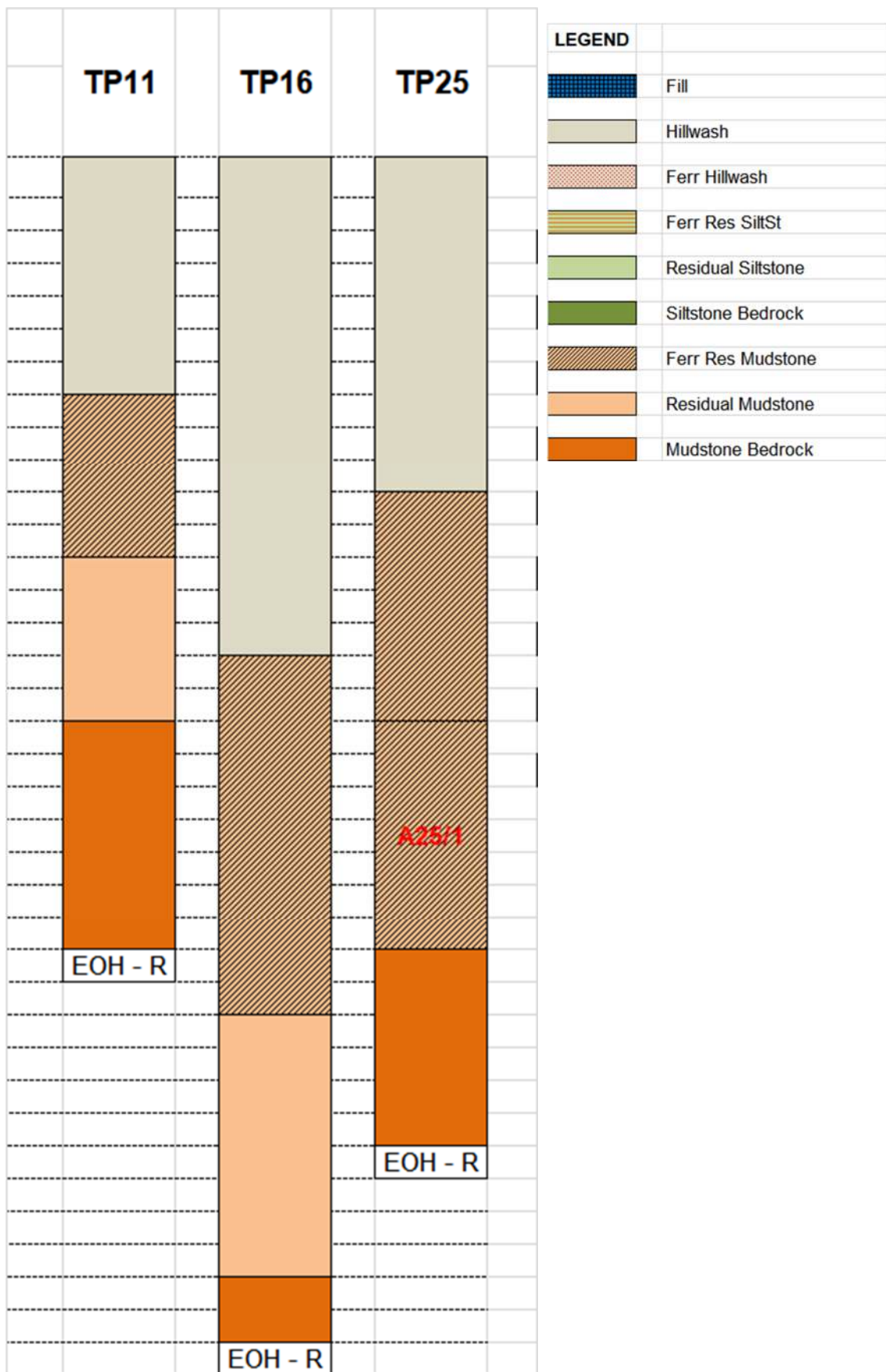


Figure 5: Generalised soil conditions – Section E-F

Materials Sampling

Selected samples were taken of selected soil material for detailed analysis. The results of the samples are still pending and will be discussed and reported in the final report.

Groundwater Occurrences

No groundwater seepage was encountered in any of excavated test pits.

Pedogenic soil in the form of ferricrete was encountered all the test pits. The pedogenic soil material is indicative that the soils are not suitably drained and that the seasonal occurrence of perched groundwater conditions is highly likely to occur over the site. Suitable subsoil drainage and dampness measures will have to be implemented.

Dynamic Cone Penetrometer (DCP) Testing

DCP testing was conducted adjacent to each of the test pits. The DCP results tables are attached at the end of the document for reference.

Construction materials

No laboratory data is available for classification of the materials. The following conditions are expected, pending laboratory results confirmation:

- The hillwash / colluvium materials are not expected to be suitable to use as platform fill / construction material.
- The residual siltstone and mudstone (including ferruginised materials) are not expected to be suitable fill platform material as the material is expected to be potentially slightly to moderately expansive and will be prone to heave / shrinkage. If utilised this material will most likely have to be stabilised with the addition of lime to decrease the plasticity.
- The bedrock material is expected to be of G6 to G8 quality and potentially suitable fill platform material. The material is expected to be non-durable and prone to slaking that will result in a decrease in quality if exposed to changing moisture conditions.

Competent Horizon & Foundations

The hillwash and residual siltstone / mudstone materials are not suitable as competent founding horizon(s) for the proposed structure due to adverse geotechnical conditions of these materials that will result in differential movement.

The moderately to slightly weathered siltstone bedrock material on which excavation with the TLB-type excavator refused is a competent foundation horizon for the proposed structure. The depth to this competent horizon ranges between 1.15 and 2.60 mbgl (mean 1.72 mbgl). It is therefore recommended that the structure be founded on this material. Other alternatives can be discussed and will depend on laboratory analysis results of the materials.

You are welcome to contact me if you have any comments or queries. The final report will be compiled as soon as analysis results have been obtained and processed.

Kind regards,

A handwritten signature in black ink, appearing to be 'FN DE JAGER', with a long horizontal stroke extending to the right.

FN DE JAGER Pr.Sci.Nat; MSAIEG;
Principal Engineering Geologist
Director

PROJECT: GTEC East London IDZ Platforms				TRIAL PIT NO.: A1	
CLIENT:	BVI Border	LATITUDE:	S33.05556		
CONTRACTOR:	Rus Plant Hire	LONGITUDE:	E27.84909		
MACHINE TYPE:	JCB 3CX 4X4 TLB-type excavator	ELEVATION:	66 m amsl		
		DATE EXCAVATED:	15 June 2018		
		DATE PROFILED:	15 June 2018		

Depth	Lithology	Description	Sampling
0		Moist, brown, in profile dusky brown, stiff, intact, clayey sand. HILLWASH.	
100			
200			
300			
400			
500			
550		Moist, yellowish brown, in profile yellowish brown, firm, shattered, sandy clay with scattered ferricrete nodules and sub-rounded gravel. FERRUGINISED RESIDUAL SILTSTONE / PEBBLE MARKER HORIZON	A1/1
600			
700			
800		Moist, yellowish brown, in profile yellowish brown, firm, inherent, sandy clay with frequent soft gravel. RESIDUAL SILTSTONE.	
900			
1000			
1100			
1200		Khaki, highly to moderately weathered, fine grained, medium jointed, moderately hard to hard rock. Joints are narrow, stained and smooth. SILTSTONE BEDROCK.	
1300			
1400			
1500	COH	Excavation refused on hard rock SILTSTONE BEDROCK	
1600			
1700			
1800			
1900			
2000			
2100			
2200			
2300			
2400			
2500			
2600			
2700			
2800			
2900			
3000			



AGES OMEGA (PTY) LTD

Notes: No seepage
Good sidewall stability
1 disturbed sample taken

PROJECT: GTEC East London IDZ Platforms				TRIAL PIT NO.: A3	
CLIENT:	BVI Border	LATITUDE:	S33.05476		
CONTRACTOR:	Rui Plant Hire	LONGITUDE:	E27.85078		
MACHINE TYPE:	JCB 3CX 4X4 TLB-type excavator	ELEVATION:	90 mm sl		
		DATE EXCAVATED:	14 June 2018		
		DATE PROFILED:	14 June 2018		

Depth	Lithology	Description	Sampling
0		Slightly moist, brown, in profile brown, firm, micro-shattered, sandy clay with scattered gravel. FILL.	
100			
200		Slightly moist, brown, in profile dusky brown, stiff, micro-shattered, clayey sand. Roots. HILLWASH.	
300			
400			
500			
600		Slightly moist, dark brown, in profile dark brown speckled black and orange, stiff, intact, clayey sand with scattered ferricrete nodules and gravel. Roots. FERRUGINISED HILLWASH.	
700			
800		Abundant gravel, cobbles densely packed in a matrix of Moist, yellow brown, sandy clay with scattered ferricrete nodules. Overall consistency is stiff. FERRUGINISED RESIDUAL SILTSTONE.	A3/1
900			A3/1
1000			
1100		Khaki, highly to moderately weathered, fine grained, medium jointed, moderately hard to hard rock. Joints are narrow, stained and smooth. SILTSTONE BEDROCK.	
1200			
1300			
1400			
1500	COH	Excavation refused on hard rock SILTSTONE BEDROCK	
1600			
1700			
1800			
1900			
2000			
2100			
2200			
2300			
2400			
2500			
2600			
2700			
2800			
2900			
3000			



AGES OMEGA (PTY) LTD

Notes:

- No seepage
- Good sidewall stability
- 1 bulk and 1 disturbed sample taken

PROJECT: GTEC East London IDZ Platforms				TRIAL PIT NO.: A7	
CLIENT:	BVI Border	LATITUDE:	S33.05559		
CONTRACTOR:	Rui Plant Hire	LONGITUDE:	E27.84939		
MACHINE TYPE:	JCB 3CX 4X4 TLB-type excavator	ELEVATION:	67 m am sl		
		DATE EXCAVATED:	13 June 2018		
		DATE PROFILED:	13 June 2018		

Depth	Lithology	Description	Sampling
0		Slightly moist, brown, in profile dusky brown, stiff, intact, clayey sand. Roots. HILLWASH.	
100			
200			
300			
400			
500			
600			
700		Slightly moist, yellow brown, in profile yellow brown speckled black, stiff, intact, sandy clay with frequent mudstone, gravel and ferricrete nodules. FERRUGINISED RESIDUAL SILTSTONE / PEBBLE MARKER HORIZON.	
800			
900		Khaki, highly weathered, fine grained, medium jointed, soft rock. Joints are narrow, stained and smooth. SOFT SILTSTONE BEDROCK.	
1000			
1100			
1200		Khaki, moderately weathered, fine grained, medium jointed, moderately hard to hard rock. Joints are narrow, stained and smooth. SILTSTONE BEDROCK.	
1300			
1400	COH	Excavation refused on hard rock SILTSTONE BEDROCK	
1500			
1600			
1700			
1800			
1900			
2000			
2100			
2200			
2300			
2400			
2500			
2600			
2700			
2800			
2900			
3000			



AGES OMEGA (PTY) LTD

Notes: No seepage
Good sidewall stability
1 bulk sample taken

PROJECT: GTEC East London IDZ Platforms				TRIAL PIT NO.: A8	
CLIENT:	BVI Border	LATITUDE:	S33.05549		
CONTRACTOR:	Rui Plant Hire	LONGITUDE:	E27.84960		
MACHINE TYPE:	JCB 3CX 4X4 TLB-type excavator	ELEVATION:	67 m am sl		
		DATE EXCAVATED:	13 June 2018		
		DATE PROFILED:	13 June 2018		

Depth	Lithology	Description	Sampling
0		Slightly moist, brown, in profile dusky brown, stiff, intact, clayey sand. Roots. HILLWASH.	
100			
200			
300			
400			
500			
600		Slightly moist, yellow brown, in profile yellow brown speckled black, stiff, intact, sandy clay with scattered gravel. and ferricrete nodules. FERRUGINISED RESIDUAL SILTSTONE.	
700			
800			
900			
1000		Khaki, highly to moderately weathered, fine grained, medium jointed, moderately hard to hard rock. Joints are narrow, stained and smooth. SILTSTONE BEDROCK.	A8/1
1100			
1200			
1300	CDH	Excavation refused on hard rock SILTSTONE BEDROCK	
1400			
1500			
1600			
1700			
1800			
1900			
2000			
2100			
2200			
2300			
2400			
2500			
2600			
2700			
2800			
2900			
3000			



AGES OMEGA (PTY) LTD

Notes:

- No seepage
- Good sidewall stability
- 1 bulk sample taken

PROJECT: GTEC East London IDZ Platforms				TRIAL PIT NO.: A9	
CLIENT:	BVI Border	LATITUDE:	S33.05532		
CONTRACTOR:	Rui Plant Hire	LONGITUDE:	E27.84988		
MACHINE TYPE:	JCB 3CX 4X4 TLB-type excavator	ELEVATION:	72 m am sl		
		DATE EXCAVATED:	13 June 2018		
		DATE PROFILED:	13 June 2018		

Depth	Lithology	Description	Sampling
0		Slightly moist, brown, in profile dusky brown, stiff, intact, clayey sand. Roots. HILLWASH.	
100			
200			
300			
400			
500			
600			
700		Slightly moist, yellow brown, in profile yellow brown speckled black, stiff, intact, sandy clay with scattered to frequent ferricrete nodules. FERRUGINISED RESIDUAL SILTSTONE.	
800			
900			
1000			
1100			
1200			
1300		Khaki, highly to moderately weathered, fine grained, medium jointed, moderately hard to hard rock. Joints are narrow, stained and smooth. SILTSTONE BEDROCK.	
1400			
1500	COH	Excavation refused on hard rock SILTSTONE BEDROCK	
1600			
1700			
1800			
1900			
2000			
2100			
2200			
2300			
2400			
2500			
2600			
2700			
2800			
2900			
3000			



AGES OMEGA (PTY) LTD

Notes: No seepage
Good sidewall stability
No sample taken

PROJECT: GTEC East London IDZ Platforms				TRIAL PIT NO.: A10	
CLIENT:	BVI Border	LATITUDE:	S33.05521		
CONTRACTOR:	Ru+ Plant Hire	LONGITUDE:	E27.85018		
MACHINE TYPE:	JCB 3CX 4X4 TLB-type excavator	ELEVATION:	72 mm sl		
		DATE EXCAVATED:	13 June 2018		
		DATE PROFILED:	13 June 2018		

Depth	Lithology	Description	Sampling
0		Slightly moist, brown, in profile dusky brown, stiff, intact, clayey sand. Roots. HILLWASH.	
100			
200			
300			
400		Slightly moist, yellow brown, in profile yellow brown speckled black, stiff, intact, sandy clay with scattered to frequent ferricrete nodules and gravel. FERRUGINISED RESIDUAL SILTSTONE.	
500			
600		Moist, yellow brown, in profile yellow brown, firm, inherent, sandy clay with scattered to frequent gravel. RESIDUAL SILTSTONE.	
700			A10/1 A10/1
800		Khaki, highly weathered, fine grained, medium jointed, soft rock. Joints are narrow, stained and smooth. SOFT SILTSTONE BEDROCK.	
900			
1000		Khaki, moderately weathered, fine grained, medium jointed, moderately hard to hard rock. Joints are narrow, stained and smooth. SILTSTONE BEDROCK.	
1100			
1200			
1300			
1400	COH	Excavation refused on hard rock SILTSTONE BEDROCK	
1500			
1600			
1700			
1800			
1900			
2000			
2100			
2200			
2300			
2400			
2500			
2600			
2700			
2800			
2900			
3000			



AGES OMEGA (PTY) LTD

Notes:

- No seepage
- Good sidewall stability
- 1 bulk and 1 disturbed sample taken

PROJECT: GTEC East London IDZ Platforms**TRIAL PIT NO.: A11**

CLIENT: BVI Border

LATITUDE: S33.05518

CONTRACTOR: Ru+Plant Hire

LONGITUDE: E27.85039

DATE EXCAVATED: 13 June 2018

MACHINE TYPE: JCB 3CX 4X4 TLB-type excavator

ELEVATION: 127 m amsl

DATE PROFILED: 13 June 2018

Depth	Lithology	Description	Sampling
0		Slightly moist, brown, in profile dusky brown, stiff, micro-shattered, clayey sand. Roots. HILLWASH.	
100			
200			
300			
400		Slightly moist, yellow brown, in profile yellow brown speckled black, stiff, inherent, sandy clay with scattered mudstone gravel and ferricrete nodules. FERRUGINISED RESIDUAL MUDSTONE / PEBBLE MARKER HORIZON?	
500			
600		Moist, yellow brown, in profile yellow brown, stiff, inherent, sandy clay. RESIDUAL MUDSTONE	
700			
800			
900		Khaki, highly to moderately weathered, fine grained, medium jointed, moderately hard to hard rock. Joints are narrow, stained and smooth. MUDSTONE BEDROCK.	
1000			
1100			
1200	COH	Excavation refused on hard rock MUDSTONE BEDROCK	
1300			
1400			
1500			
1600			
1700			
1800			
1900			
2000			
2100			
2200			
2300			
2400			
2500			
2600			
2700			
2800			
2900			
3000			

**AGES OMEGA (PTY) LTD****Notes:**

No seepage

Good sidewall stability

No sample taken

PROJECT: GTEC East London IDZ Platforms				TRIAL PIT NO.: A13	
CLIENT:	BVI Border	LATITUDE:	S33.05557		
CONTRACTOR:	Rui Plant Hire	LONGITUDE:	E27.85036		
MACHINE TYPE:	JCB 3CX 4X4 TLB-type excavator	ELEVATION:	127 m am sl		
		DATE EXCAVATED:	14 June 2018		
		DATE PROFILED:	14 June 2018		

Depth	Lithology	Description	Sampling
0		Slightly moist, brown, in profile dusky brown, stiff, intact, clayey sand. Roots. HILLWASH.	
100			
200			
300			
400			
500			
600			
700			
800		Slightly moist, dark brown, in profile dark brown speckled black and orange, stiff, intact, clayey sand with scattered ferricrete nodules and gravel. Roots. FERRUGINISED HILLWASH.	
900			
1000			
1100			
1200		Moist, yellow brown, in profile yellow brown, stiff, inherent, sandy clay with frequent gravel and ferricrete nodules. FERRUGINISED RESIDUAL SILTSTONE.	
1300			
1400			
1500			
1600		Khaki, highly to moderately weathered, fine grained, medium jointed, moderately hard to hard rock. Joints are narrow, stained and smooth. SILTSTONE BEDROCK.	
1700	COH	Excavation refused on hard rock SILTSTONE BEDROCK	
1800			
1900			
2000			
2100			
2200			
2300			
2400			
2500			
2600			
2700			
2800			
2900			
3000			



AGES OMEGA (PTY) LTD

Notes: No seepage
Good sidewall stability
No sample taken

PROJECT: GTEC East London IDZ Platforms**TRIAL PIT NO.: A14**

CLIENT: BVI Border

LATITUDE: S33.05574

CONTRACTOR: Ru+Plant Hire

LONGITUDE: E27.84999

DATE EXCAVATED: 13 June 2018

MACHINE TYPE: JCB 3CX 4X4 TLB-type excavator

ELEVATION: 76 mm a.s.l.

DATE PROFILED: 13 June 2018

Depth	Lithology	Description	Sampling
0			
100			
200			
300			
400			
500			
600			
700			
800			
900			
1000			
1100			
1200			
1300	COH		
1400			
1500			
1600			
1700			
1800			
1900			
2000			
2100			
2200			
2300			
2400			
2500			
2600			
2700			
2800			
2900			
3000			

**AGES OMEGA (PTY) LTD****Notes:**

No seepage

Good sidewall stability

1 bulk and 2 disturbed samples taken

A14

PROJECT: GTEC East London IDZ Platforms				TRIAL PIT NO.: A15	
CLIENT:	BVI Border	LATITUDE:	S33.05557		
CONTRACTOR:	Rus Plant Hire	LONGITUDE:	E27.85036		
MACHINE TYPE:	JCB 3CX 4X4 TLB-type excavator	ELEVATION:	127 m am sl		
		DATE EXCAVATED:	13 June 2018		
		DATE PROFILED:	13 June 2018		

Depth	Lithology	Description	Sampling
0		Slightly moist, brown, in profile dusky brown, stiff, intact, clayey sand. Roots. HILLWASH.	
100			
200			
300			
400			
500			
600			
700			
800		Slightly moist, dark brown, in profile dark brown speckled black and orange, stiff, intact, clayey sand with scattered ferricrete nodules and gravel. Roots. FERRUGINISED HILLWASH.	
900			
1000			
1100		Moist, yellow brown, in profile yellow brown, stiff, inherent, sandy clay with frequent angular gravel and ferricrete nodules. FERRUGINISED RESIDUAL SILTSTONE.	
1200			
1300		Khaki, highly weathered, fine grained, medium jointed, soft rock. Joints are narrow, stained and smooth. SOFT SILTSTONE BEDROCK.	
1400			
1500			
1600			
1700		Khaki, highly to moderately weathered, fine grained, medium jointed, moderately hard to hard rock. Joints are narrow, stained and smooth. SILTSTONE BEDROCK.	
1800			
1900			
2000			
2100			
2200			
2300			
2400			
2500	CBH	Excavation refused on hard rock SILTSTONE BEDROCK	
2600			
2700			
2800			
2900			
3000			



AGES OMEGA (PTY) LTD

Notes:

- No seepage
- Good sidewall stability
- No sample taken

PROJECT: GTEC East London IDZ Platforms				TRIAL PIT NO.: A16	
CLIENT:	BVI Border	LATITUDE:	S33.05546		
CONTRACTOR:	Rui Plant Hire	LONGITUDE:	E27.85057		
MACHINE TYPE:	JCB 3CX 4X4 TLB-type excavator	ELEVATION:	125 m am sl		
		DATE EXCAVATED:	13 June 2018		
		DATE PROFILED:	13 June 2018		

Depth	Lithology	Description	Sampling
0		Slightly moist, brown, in profile dusky brown, stiff, micro-shattered, clayey sand. Roots. HILLWASH.	
100			
200			
300			
400			
500			
600			
700			
800		Slightly moist, yellow brown, in profile yellow brown speckled black, stiff, inherent, sandy clay with scattered mudstone gravel and ferricrete nodules. FERRUGINISED RESIDUAL MUDSTONE	
900			
1000			
1100			
1200			
1300		Moist, yellow brown, in profile yellow brown, stiff, inherent, sandy clay with frequent to abundant angular gravel. RESIDUAL MUDSTONE	
1400			
1500			
1600			
1700		Khaki, highly to moderately weathered, fine grained, medium jointed, moderately hard to hard rock. Joints are narrow, stained and smooth. MUDSTONE BEDROCK.	
1800	COH	Excavation refused on hard rock MUDSTONE BEDROCK	
1900			
2000			
2100			
2200			
2300			
2400			
2500			
2600			
2700			
2800			
2900			
3000			



AGES OMEGA (PTY) LTD

Notes: No seepage
Good sidewall stability
No sample taken

PROJECT: GTEC East London IDZ Platforms**TRIAL PIT NO.: A17**

CLIENT: BVI Border

LATITUDE: S33.05525

CONTRACTOR: Ru+ Plant Hire

LONGITUDE: E27.85105

DATE EXCAVATED: 14 June 2018

MACHINE TYPE: JCB 3CX 4X4 TLB-type excavator

ELEVATION: 114 m a.s.l

DATE PROFILED: 14 June 2018

Depth	Lithology	Description	Sampling
0		Moist, brown, in profile brown blotched khaki, stiff, clayey sand with frequent gravel. FILL.	
100			
200		Slightly moist, dark grey, in profile dark grey, stiff, micro-shattered, clayey sand. Roots. HILLWASH.	
300			
400			
500			
600			
700		Moist, yellow brown, in profile yellow brown, firm, micro-shattered, sandy clay with scattered ferricrete nodules and gravel. FERRUGINISED RESIDUAL SILTSTONE.	
800			
900		Moist, yellow brown, in profile yellow brown, firm, inherent, sandy clay. RESIDUAL SILTSTONE.	
1000			
1100			
1200		Khaki, highly to moderately weathered, fine grained, medium jointed, moderately hard to hard rock. Joints are narrow, stained and smooth. SILTSTONE BEDROCK.	
1300	COH	Excavation refused on hard rock SILTSTONE BEDROCK	
1400			
1500			
1600			
1700			
1800			
1900			
2000			
2100			
2200			
2300			
2400			
2500			
2600			
2700			
2800			
2900			
3000			

**AGES OMEGA (PTY) LTD****Notes:**

No seepage

Good sidewall stability

No sample taken

PROJECT: GTEC East London IDZ Platforms				TRIAL PIT NO.: A21	
CLIENT:	BVI Border	LATITUDE:	S33.05604		
CONTRACTOR:	Ru+ Plant Hire	LONGITUDE:	E27.84964		
MACHINE TYPE:	JCB 3CX 4X4 TLB-type excavator	ELEVATION:	90 mm sl		
		DATE EXCAVATED:	14 June 2018		
		DATE PROFILED:	14 June 2018		

Depth	Lithology	Description	Sampling
0		Slightly moist, brown, in profile dusky brown, stiff, intact, clayey sand. Roots. HILLWASH.	
100			
200			
300			
400			
500			
600			
700			
800		Slightly moist, dark brown, in profile dark brown speckled black and orange, stiff, intact, clayey sand with scattered ferricrete nodules and gravel. Roots. FERRUGINISED HILLWASH.	
900			
1000			
1100		Abundant gravel, cobbles densely packed in a matrix of Moist, yellow brown, sandy clay with scattered ferricrete nodules. Overall consistency is stiff. FERRUGINISED RESIDUAL SILTSTONE.	
1200			
1300			
1400		Khaki, highly weathered, fine grained, medium jointed, soft rock. Joints are narrow, stained and smooth. SOFT SILTSTONE BEDROCK.	
1500			
1600			
1700		Khaki, moderately weathered, fine grained, medium jointed, moderately hard to hard rock. Joints are narrow, stained and smooth. SILTSTONE BEDROCK.	
1800			
1900			
2000	COH	Excavation refused on hard rock SILTSTONE BEDROCK	
2100			
2200			
2300			
2400			
2500			
2600			
2700			
2800			
2900			
3000			



AGES OMEGA (PTY) LTD

Notes:

- No seepage
- Good sidewall stability
- No sample taken

PROJECT: GTEC East London IDZ Platforms				TRIAL PIT NO.: A22	
CLIENT:	BVI Border	LATITUDE:	S33.056 16		
CONTRACTOR:	Rus Plant Hire	LONGITUDE:	E27.84959		
MACHINE TYPE:	JCB 3CX 4X4 TLB-type excavator	ELEVATION:	113 mm sl		
		DATE EXCAVATED:	15 June 20 18		
		DATE PROFILED:	15 June 20 18		

Depth	Lithology	Description	Sampling
0		Slightly moist, dusky brown, in profile dusky brown, stiff, intact, clayey sand. Roots. HILLWASH.	
100			
200			
300			
400			
500			
600			
700			
800		Moist, yellowish brown, in profile dusky brown speckled black, firm, micro-shattered, sandy clay with scattered gravel and ferricrete nodules. FERRUGINISED RESIDUAL SILTSTONE	
900			
1000			
1100		Khaki, highly weathered, fine grained, medium jointed, soft rock. Joints are narrow, stained and smooth. SOFT SILTSTONE BEDROCK.	
1200			
1300			
1400			
1500		Khaki, moderately weathered, fine grained, medium jointed, moderately hard to hard rock. Joints are narrow, stained and smooth. SILTSTONE BEDROCK.	
1600			
1700			
1800			
1900			
2000			
2100	COH	Excavation refused on hard rock SILTSTONE BEDROCK	
2200			
2300			
2400			
2500			
2600			
2700			
2800			
2900			
3000			



AGES OMEGA (PTY) LTD

Notes: No seepage
Good sidewall stability
No sample taken

PROJECT: GTEC East London IDZ Platforms				TRIAL PIT NO.: A23	
CLIENT:	BVI Border	LATITUDE:	33.05538	DATE EXCAVATED:	13 June 2018
CONTRACTOR:	Ru+ Plant Hire	LONGITUDE:	E27.85028	DATE PROFILED:	13 June 2018
MACHINE TYPE:	JCB 3CX 4X4 TLB-type excavator	ELEVATION:	126 m amsl		

Depth	Lithology	Description	Sampling
0		Slightly moist, brown, in profile dusky brown, stiff, micro-shattered, clayey sand. Roots. HILLWASH.	
100			
200			
300			
400			
500			
600		Slightly moist, yellow brown, in profile yellow brown speckled black, stiff, inherent, sandy clay with frequent mudstone, gravel and ferricrete nodules. FERRUGINISED RESIDUAL MUDSTONE	
700			
800			
900			
1000			
1100			
1200			
1300			
1400		Khaki, highly weathered, fine grained, medium jointed, soft rock. Joints are narrow, stained and smooth. SOFT MUDSTONE BEDROCK.	
1500			
1600			
1700			
1800			
1900			
2000			
2100			
2200		Khaki, moderately weathered, fine grained, medium jointed, moderately hard to hard rock. Joints are narrow, stained and smooth. MUDSTONE BEDROCK.	
2300			
2400			
2500			
2600	CBH	Excavation refused on hard rock MUDSTONE BEDROCK	
2700			
2800			
2900			
3000			



AGES OMEGA (PTY) LTD

Notes:

- No seepage
- Good sidewall stability
- No sample taken

PROJECT: GTEC East London IDZ Platforms				TRIAL PIT NO.: A24	
CLIENT:	BVI Border	LATITUDE:	933.05587		
CONTRACTOR:	Rui Plant Hire	LONGITUDE:	E27.85045		
MACHINE TYPE:	JCB 3CX 4X4 TLB-type excavator	ELEVATION:	127 m msl		
		DATE EXCAVATED:	13 June 2018		
		DATE PROFILED:	13 June 2018		

Depth	Lithology	Description	Sampling
0		Slightly moist, brown, in profile dusky brown, stiff, micro-shattered, clayey sand. Roots. HILLWASH.	
100			
200			
300			
400			
500			
600			
700			
800		Slightly moist, yellow brown, in profile yellow brown speckled black, stiff, inherent, sandy clay with frequent ferricrete nodules. FERRUGINISED RESIDUAL MUDSTONE	
900			
1000			
1100			
1200			
1300			
1400			
1500			
1600			
1700	COH	Khaki, highly weathered to moderately weathered, fine grained, medium jointed, moderately hard to hard rock. Joints are narrow, stained and smooth. MUDSTONE BEDROCK.	
1800		Excavation refused on hard rock MUDSTONE BEDROCK	
1900			
2000			
2100			
2200			
2300			
2400			
2500			
2600			
2700			
2800			
2900			
3000			



AGES OMEGA (PTY) LTD

Notes: No seepage
Good sidewall stability
No sample taken

PROJECT: GTEC East London IDZ Platforms				TRIAL PIT NO.: A25	
CLIENT:	BVI Border	LATITUDE:	S33.05568		
CONTRACTOR:	Rus Plant Hire	LONGITUDE:	E27.85077		
MACHINE TYPE:	JCB 3CX 4X4 TLB-type excavator	ELEVATION:	126 mm sl		
		DATE EXCAVATED:	13 June 2018		
		DATE PROFILED:	13 June 2018		

Depth	Lithology	Description	Sampling
0		Slightly moist, brown, in profile dusky brown, stiff, micro-shattered, clayey sand. Roots. HILLWASH.	
100			
200			
300			
400			
500		Slightly moist, brown, in profile brown speckled orange, stiff, micro-shattered, sandy clay with scattered ferricrete nodules. FERRUGINISED RESIDUAL MUDSTONE.	
600			
700			
800		Slightly moist, yellow brown, in profile yellow brown, stiff, inherent, sandy clay with scattered ferricrete nodules. SLIGHTLY FERRUGINISED RESIDUAL MUDSTONE	
900			
1000			
1100			
1200		Khaki, highly weathered to moderately weathered, fine grained, medium jointed, moderately hard to hard rock. Joints are narrow, stained and smooth. MUDSTONE BEDROCK.	
1300			
1400			
1500	COH	Excavation refused on hard rock MUDSTONE BEDROCK	
1600			
1700			
1800			
1900			
2000			
2100			
2200			
2300			
2400			
2500			
2600			
2700			
2800			
2900			
3000			



AGES OMEGA (PTY) LTD

Notes:

- No seepage
- Good sidewall stability
- 1 disturbed sample taken

PROJECT: GTEC East London IDZ Platforms				TRIAL PIT NO.: A26	
CLIENT:	BVI Border	LATITUDE:	S33.05642		
CONTRACTOR:	Rui Plant Hire	LONGITUDE:	E27.84961		
MACHINE TYPE:	JCB 3CX 4X4 TLB-type excavator	ELEVATION:	128 m am sl		
		DATE EXCAVATED:	13 June 2018		
		DATE PROFILED:	13 June 2018		

Depth	Lithology	Description	Sampling
0		Slightly moist, brown, in profile dusky brown, stiff, micro-shattered, clayey sand. Roots. HILLWASH.	
100			
200			
300			
400			
500			
600			
700		Slightly moist, yellow brown, in profile yellow brown speckled black, stiff, inherent, sandy clay with frequent mudstone, gravel and ferricrete nodules. FERRUGINISED RESIDUAL MUDSTONE	
800			
900			
1000			
1100			
1200		Moist, yellow brown, in profile yellow brown, stiff, inherent, sandy clay. RESIDUAL MUDSTONE	
1300			
1400			
1500			
1600			
1700			
1800		Khaki, highly weathered, fine grained, medium jointed, soft rock. Joints are narrow, stained and smooth. SOFT MUDSTONE BEDROCK.	
1900			
2000			
2100			
2200			
2300		Khaki, moderately weathered, fine grained, medium jointed, moderately hard to hard rock. Joints are narrow, stained and smooth. MUDSTONE BEDROCK.	
2400			
2500			
2600	COH	Excavation refused on hard rock MUDSTONE BEDROCK	
2700			
2800			
2900			
3000			



AGES OMEGA (PTY) LTD

Notes:

- No seepage
- Good sidewall stability
- No sample taken

PROJECT: GTEC East London IDZ Platforms				TRIAL PIT NO.: A28	
CLIENT:	BVI Border	LATITUDE:	S33.05564		
CONTRACTOR:	Rus Plant Hire	LONGITUDE:	E27.85132		
MACHINE TYPE:	JCB 3CX 4X4 TLB-type excavator	ELEVATION:	113 mm sl		
		DATE EXCAVATED:	14 June 2018		
		DATE PROFILED:	14 June 2018		

Depth	Lithology	Description	Sampling
0		Slightly moist, dusky brown, in profile dusky brown, stiff, intact, clayey sand. Roots. HILLWASH.	
100			
200			
300			
400			
500		Moist, yellowish brown, in profile light brown speckled black, firm, micro-shattered, sandy clay with frequent gravel and scattered ferricrete nodules. FERRUGINISED RESIDUAL SILTSTONE	
600			
700			
800			
900		Abundant gravel and cobbles densely packed in a matrix of Moist, brown, sandy clay. RESIDUAL SILTSTONE.	
1000			
1100			
1200			
1300			
1400			
1500			
1600			
1700		Khaki, highly to moderately weathered, fine grained, medium jointed, moderately hard to hard rock. Joints are narrow, stained and smooth. SILTSTONE BEDROCK.	
1800			
1900			
2000	COH	Excavation refused on hard rock SILTSTONE BEDROCK	
2100			
2200			
2300			
2400			
2500			
2600			
2700			
2800			
2900			
3000			



AGES OMEGA (PTY) LTD

Notes: No seepage
Good sidewall stability
No sample taken

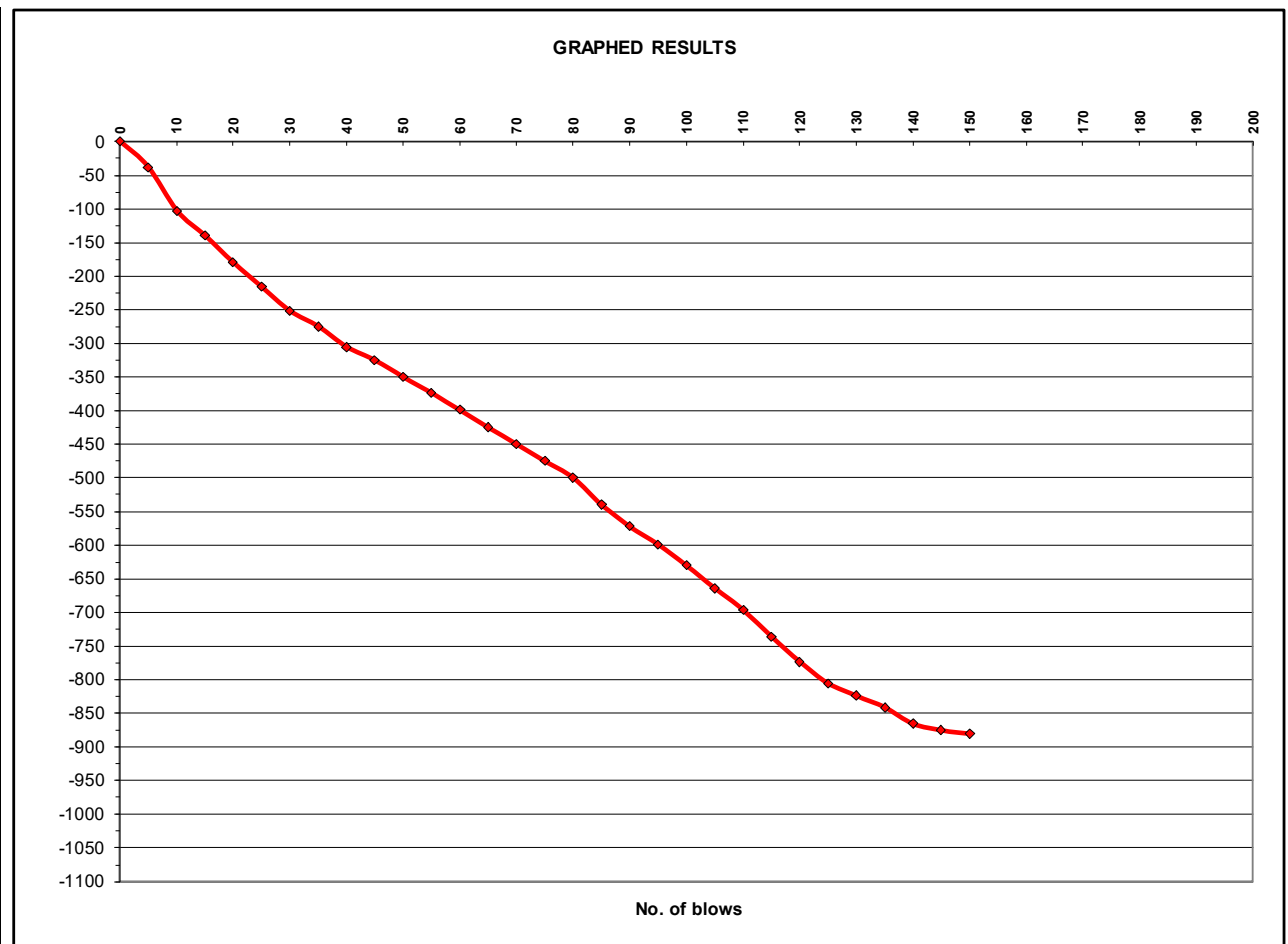
ANALYSES OF DYNAMIC CONE PENETRATION TEST RESULTS

PROJECT: **EAST LONDON IDZ PLATFORM A**

DEPTH: Surface

CONDUCTED ON: Thursday, June 14, 2018

NO. OF BLOWS	TP 1				
	Values (mm)	Cumulative penetration (mm)	mm/blow	UCS (kPa)	CBR
0	10	0	0.0		
5	48	-38	7.6	318	31
10	113	-103	13.0	177	16
15	150	-140	7.4	327	32
20	190	-180	8.0	301	29
25	226	-216	7.2	337	33
30	262	-252	7.2	337	33
35	285	-275	4.6	550	59
40	315	-305	6.0	411	42
45	335	-325	4.0	640	70
50	360	-350	5.0	502	53
55	384	-374	4.8	525	56
60	409	-399	5.0	502	53
65	435	-425	5.2	481	51
70	460	-450	5.0	502	53
75	485	-475	5.0	502	53
80	510	-500	5.0	502	53
85	550	-540	8.0	301	29
90	582	-572	6.4	383	39
95	609	-599	5.4	461	48
100	640	-630	6.2	397	40
105	674	-664	6.8	359	36
110	706	-696	6.4	383	39
115	746	-736	8.0	301	29
120	783	-773	7.4	327	32
125	815	-805	6.4	383	39
130	834	-824	3.8	677	75
135	851	-841	3.4	764	87
140	875	-865	4.8	525	56
145	885	-875	2.0	1362	170
150	890	-880	1.0	2900	410
155					
160					
165					
170					
175					
180					
185					
190					
195					
200					



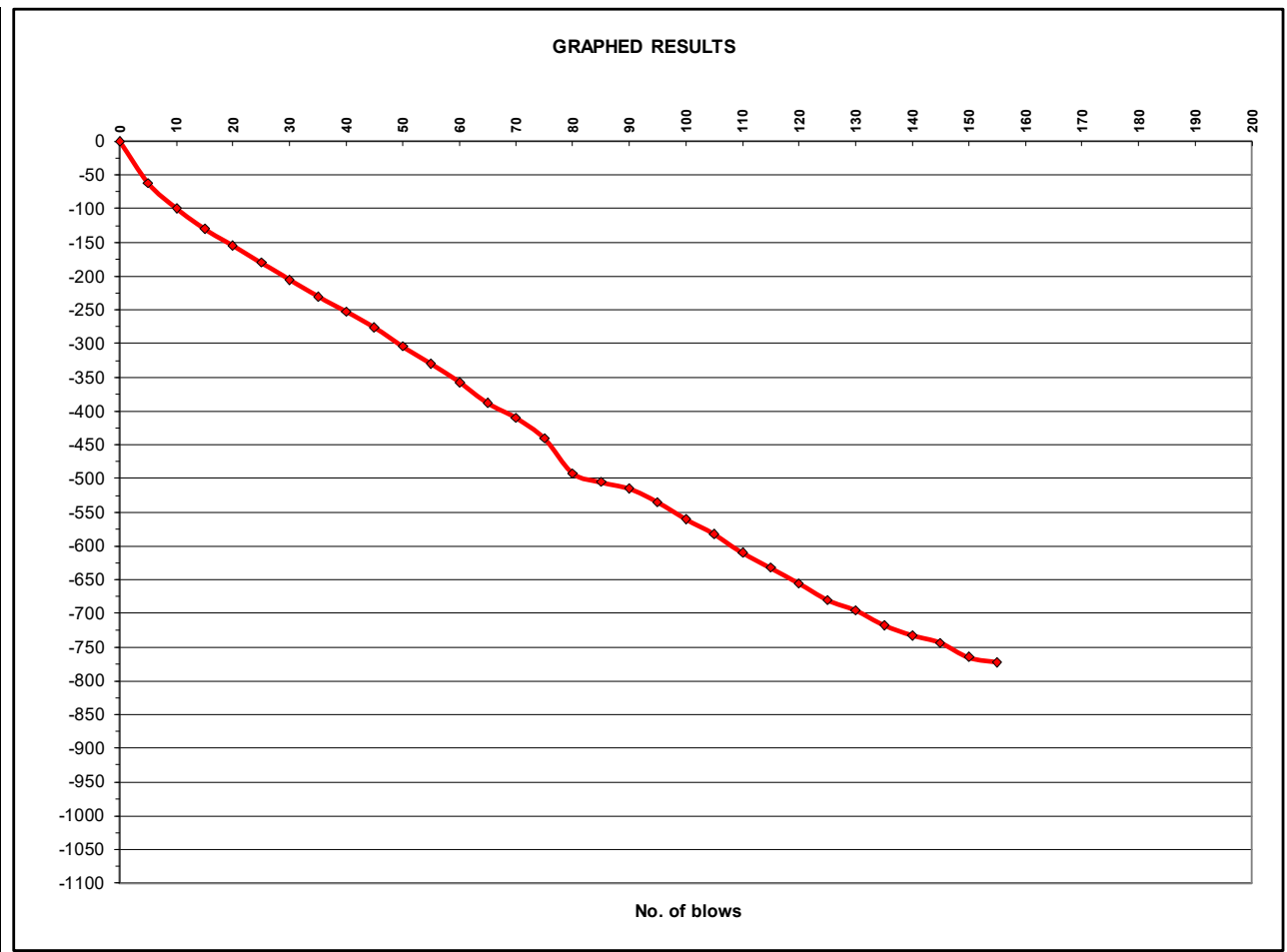
ANALYSES OF DYNAMIC CONE PENETRATION TEST RESULTS

PROJECT: **EAST LONDON IDZ PLATFORM A**

DEPTH: Surface

CONDUCTED ON: Thursday, June 14, 2018

NO. OF BLOWS	TP 3				
	Values (mm)	Cumulative penetration (mm)	mm/blow	UCS (kPa)	CBR
0	10	0	0.0		
5	72	-62	12.4	186	17
10	110	-100	7.6	318	31
15	140	-130	6.0	411	42
20	165	-155	5.0	502	53
25	190	-180	5.0	502	53
30	215	-205	5.0	502	53
35	240	-230	5.0	502	53
40	262	-252	4.4	577	62
45	286	-276	4.8	525	56
50	314	-304	5.6	443	46
55	340	-330	5.2	481	51
60	367	-357	5.4	461	48
65	398	-388	6.2	397	40
70	420	-410	4.4	577	62
75	450	-440	6.0	411	42
80	502	-492	10.4	226	21
85	515	-505	2.6	1023	122
90	525	-515	2.0	1362	170
95	545	-535	4.0	640	70
100	570	-560	5.0	502	53
105	592	-582	4.4	577	62
110	620	-610	5.6	443	46
115	642	-632	4.4	577	62
120	665	-655	4.6	550	59
125	690	-680	5.0	502	53
130	705	-695	3.0	876	102
135	727	-717	4.4	577	62
140	742	-732	3.0	876	102
145	753	-743	2.2	1228	151
150	775	-765	4.4	577	62
155	782	-772	1.4	2010	267
160					
165					
170					
175					
180					
185					
190					
195					
200					



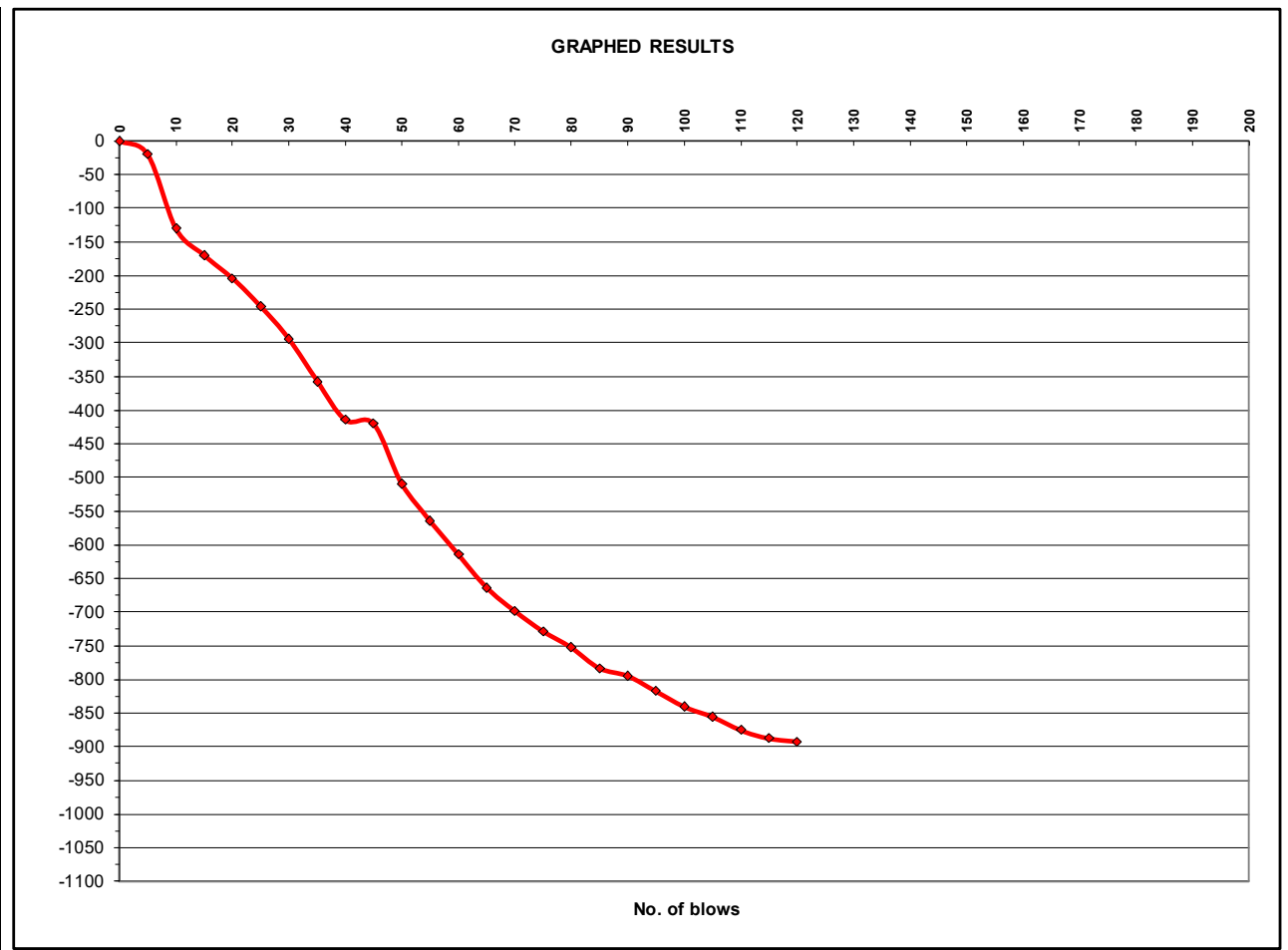
ANALYSES OF DYNAMIC CONE PENETRATION TEST RESULTS

PROJECT: **EAST LONDON IDZ PLATFORM A**

DEPTH: Surface

CONDUCTED ON: Thursday, June 14, 2018

NO. OF BLOWS	TP 7				
	Values (mm)	Cumulative penetration (mm)	mm/blow	UCS (kPa)	CBR
0	20	0	0.0		
5	40	-20	4.0	640	70
10	150	-130	22.0	100	8
15	190	-170	8.0	301	29
20	224	-204	6.8	359	36
25	266	-246	8.4	285	27
30	314	-294	9.6	246	23
35	377	-357	12.6	183	16
40	434	-414	11.4	204	19
45	440	-420	1.2	2377	325
50	529	-509	17.8	126	11
55	584	-564	11.0	212	20
60	634	-614	10.0	236	22
65	683	-663	9.8	241	23
70	718	-698	7.0	348	35
75	748	-728	6.0	411	42
80	772	-752	4.8	525	56
85	803	-783	6.2	397	40
90	814	-794	2.2	1228	151
95	837	-817	4.6	550	59
100	860	-840	4.6	550	59
105	875	-855	3.0	876	102
110	895	-875	4.0	640	70
115	907	-887	2.4	1117	135
120	912	-892	1.0	2900	410
125					
130					
135					
140					
145					
150					
155					
160					
165					
170					
175					
180					
185					
190					
195					
200					



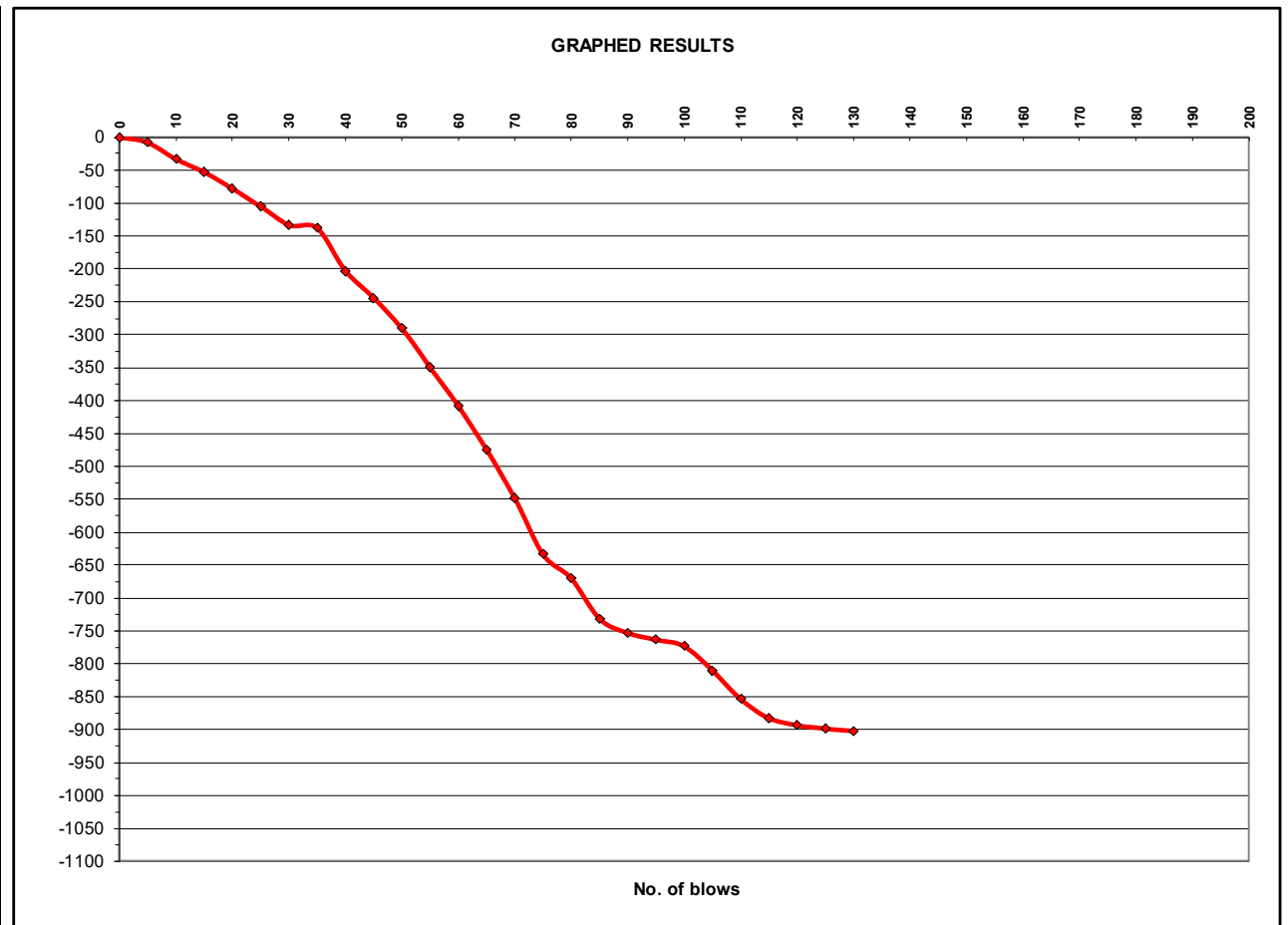
ANALYSES OF DYNAMIC CONE PENETRATION TEST RESULTS

PROJECT: **EAST LONDON IDZ PLATFORM A**

DEPTH: Surface

CONDUCTED ON: Thursday, June 14, 2018

NO. OF BLOWS	TP 8				
	Values (mm)	Cumulative penetration (mm)	mm/blow	UCS (kPa)	CBR
0	12	0	0.0		
5	20	-8	1.6	1737	226
10	45	-33	5.0	502	53
15	65	-53	4.0	640	70
20	90	-78	5.0	502	53
25	117	-105	5.4	461	48
30	145	-133	5.6	443	46
35	150	-138	1.0	2900	410
40	215	-203	13.0	177	16
45	256	-244	8.2	293	28
50	302	-290	9.2	258	24
55	361	-349	11.8	197	18
60	420	-408	11.8	197	18
65	486	-474	13.2	174	15
70	560	-548	14.8	154	13
75	645	-633	17.0	132	11
80	682	-670	7.4	327	32
85	743	-731	12.2	190	17
90	765	-753	4.4	577	62
95	775	-763	2.0	1362	170
100	785	-773	2.0	1362	170
105	822	-810	7.4	327	32
110	865	-853	8.6	278	27
115	894	-882	5.8	427	44
120	905	-893	2.2	1228	151
125	910	-898	1.0	2900	410
130	914	-902	0.8	3699	544
135					
140					
145					
150					
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160					
165					
170					
175					
180					
185					
190					
195					
200					



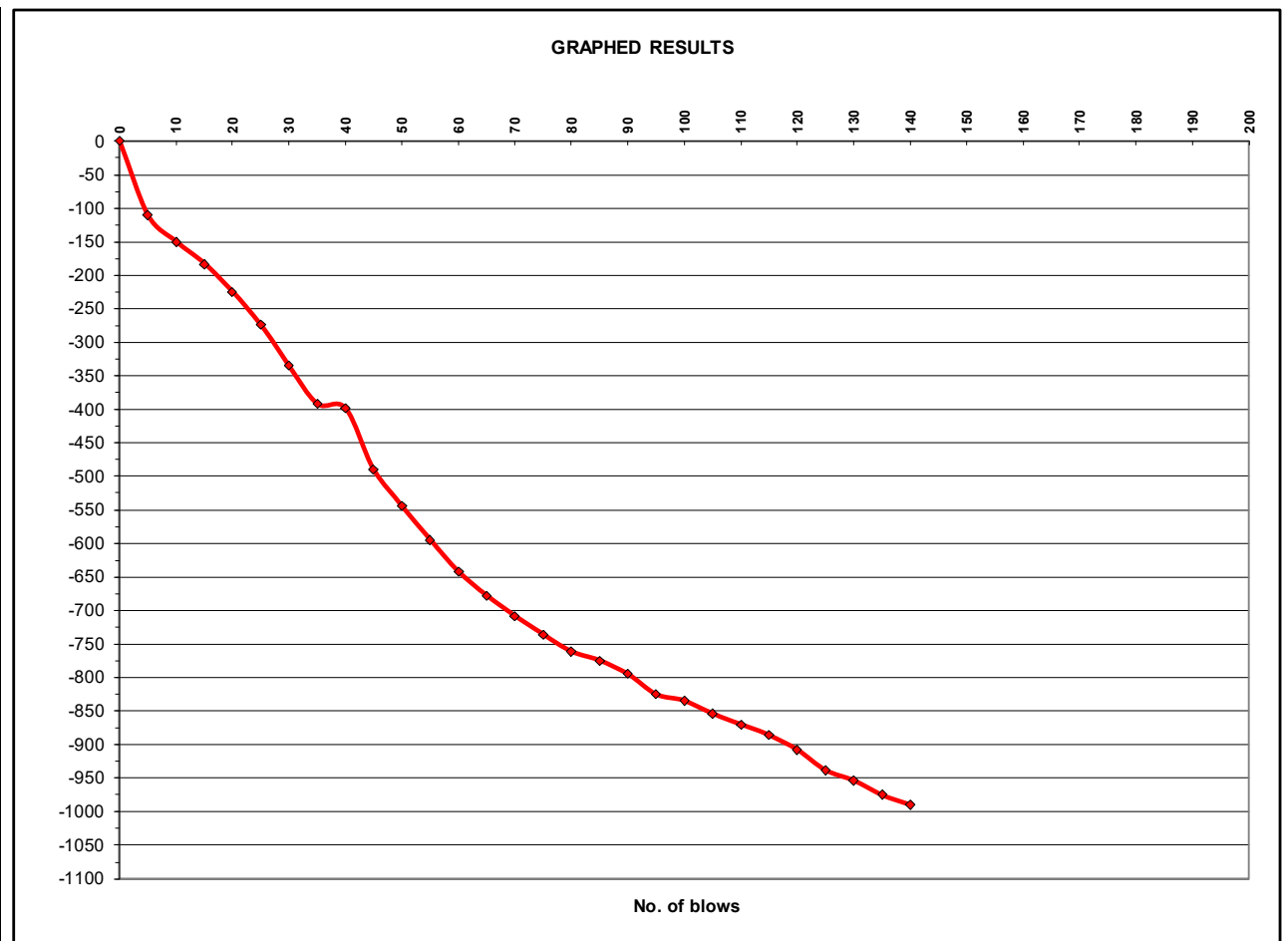
ANALYSES OF DYNAMIC CONE PENETRATION TEST RESULTS

PROJECT: **EAST LONDON IDZ PLATFORM A**

DEPTH: Surface

CONDUCTED ON: Thursday, June 14, 2018

NO. OF BLOWS	TP 9				
	Values (mm)	Cumulative penetration (mm)	mm/blow	UCS (kPa)	CBR
0	40	0	0.0		
5	150	-110	22.0	100	8
10	190	-150	8.0	301	29
15	223	-183	6.6	371	37
20	265	-225	8.4	285	27
25	314	-274	9.8	241	23
30	375	-335	12.2	190	17
35	432	-392	11.4	204	19
40	439	-399	1.4	2010	267
45	530	-490	18.2	123	10
50	584	-544	10.8	217	20
55	635	-595	10.2	231	21
60	682	-642	9.4	252	24
65	718	-678	7.2	337	33
70	748	-708	6.0	411	42
75	776	-736	5.6	443	46
80	801	-761	5.0	502	53
85	815	-775	2.8	944	111
90	835	-795	4.0	640	70
95	865	-825	6.0	411	42
100	875	-835	2.0	1362	170
105	894	-854	3.8	677	75
110	910	-870	3.2	816	94
115	926	-886	3.2	816	94
120	948	-908	4.4	577	62
125	978	-938	6.0	411	42
130	994	-954	3.2	816	94
135	1015	-975	4.2	607	66
140	1030	-990	3.0	876	102
145					
150					
155					
160					
165					
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175					
180					
185					
190					
195					
200					



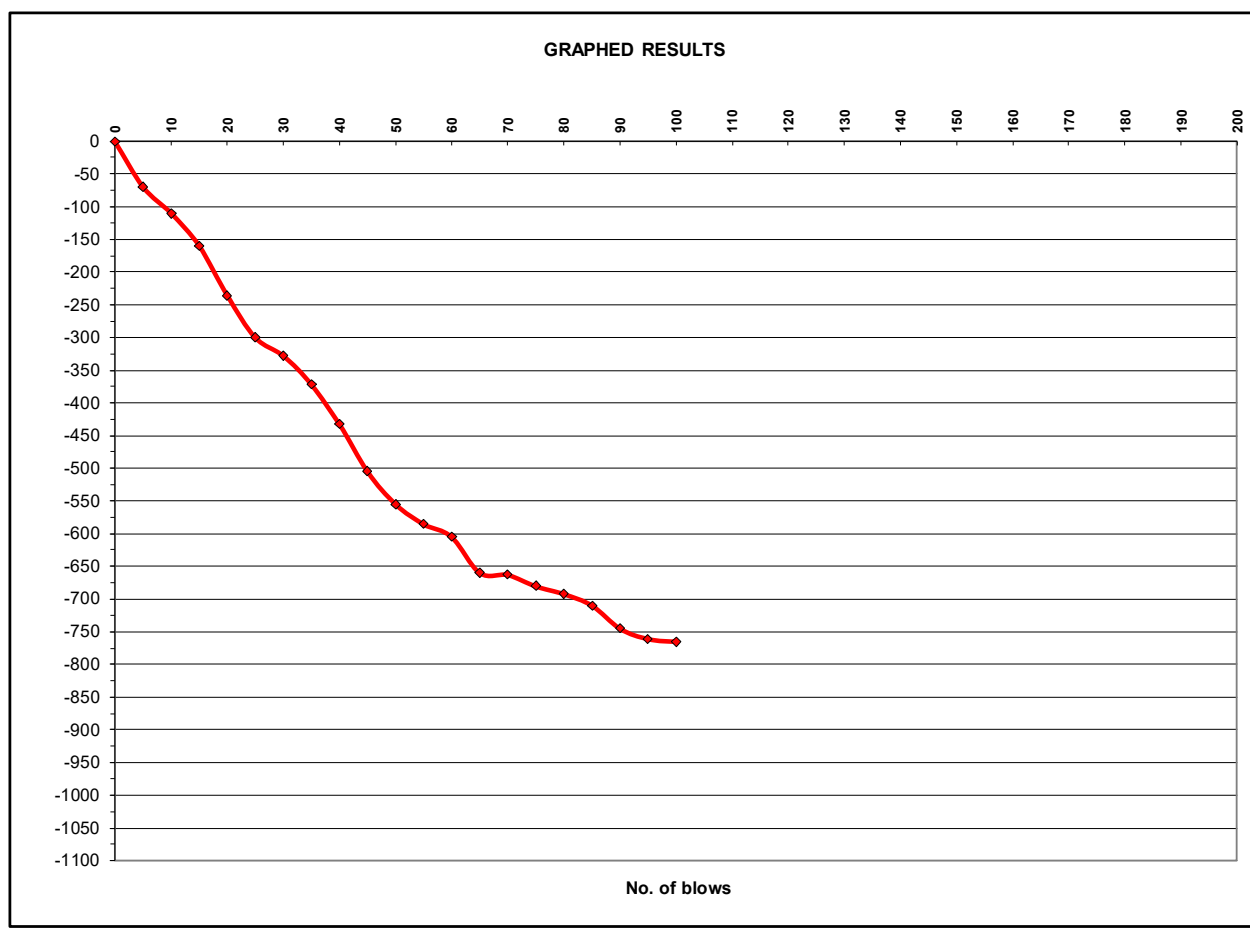
ANALYSES OF DYNAMIC CONE PENETRATION TEST RESULTS

PROJECT: **EAST LONDON IDZ PLATFORM A**

DEPTH: Surface

CONDUCTED ON: Thursday, June 14, 2018

NO. OF BLOWS	TP 10				
	Values (mm)	Cumulative penetration (mm)	mm/blow	UCS (kPa)	CBR
0	20	0	0.0		
5	90	-70	14.0	163	14
10	130	-110	8.0	301	29
15	180	-160	10.0	236	22
20	256	-236	15.2	149	13
25	320	-300	12.8	180	16
30	348	-328	5.6	443	46
35	392	-372	8.8	271	26
40	453	-433	12.2	190	17
45	525	-505	14.4	158	14
50	575	-555	10.0	236	22
55	605	-585	6.0	411	42
60	625	-605	4.0	640	70
65	680	-660	11.0	212	20
70	683	-663	0.6	5061	784
75	700	-680	3.4	764	87
80	712	-692	2.4	1117	135
85	730	-710	3.6	718	81
90	765	-745	7.0	348	35
95	781	-761	3.2	816	94
100	785	-765	0.8	3699	544
105					
110					
115					
120					
125					
130					
135					
140					
145					
150					
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165					
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200					



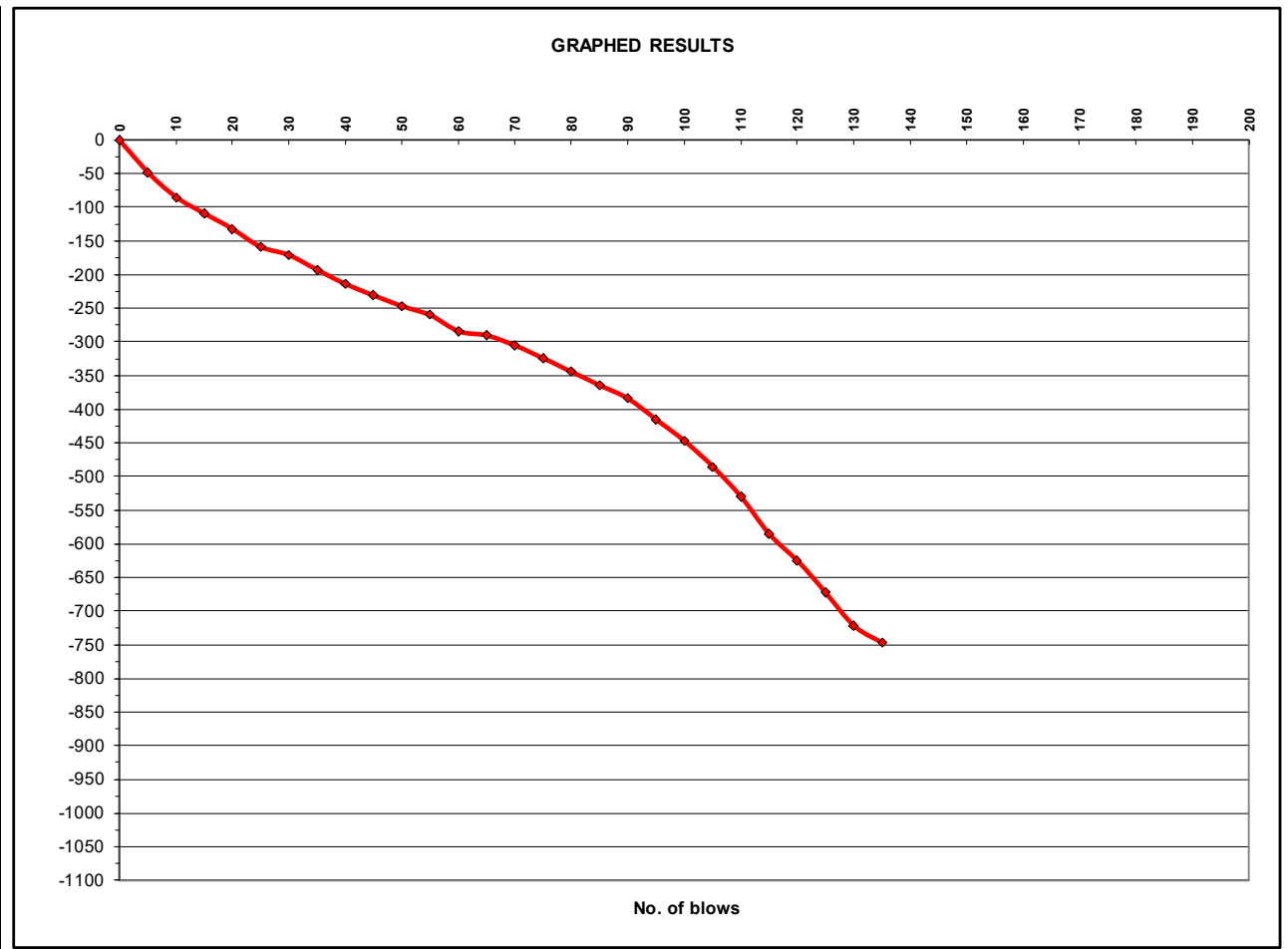
ANALYSES OF DYNAMIC CONE PENETRATION TEST RESULTS

PROJECT: **EAST LONDON IDZ PLATFORM A**

DEPTH: Surface

CONDUCTED ON: Thursday, June 14, 2018

NO. OF BLOWS	TP 11				
	Values (mm)	Cumulative penetration (mm)	mm/blow	UCS (kPa)	CBR
0	30	0	0.0		
5	78	-48	9.6	246	23
10	115	-85	7.4	327	32
15	139	-109	4.8	525	56
20	162	-132	4.6	550	59
25	189	-159	5.4	461	48
30	201	-171	2.4	1117	135
35	223	-193	4.4	577	62
40	244	-214	4.2	607	66
45	261	-231	3.4	764	87
50	277	-247	3.2	816	94
55	290	-260	2.6	1023	122
60	314	-284	4.8	525	56
65	320	-290	1.2	2377	325
70	335	-305	3.0	876	102
75	354	-324	3.8	677	75
80	374	-344	4.0	640	70
85	394	-364	4.0	640	70
90	414	-384	4.0	640	70
95	445	-415	6.2	397	40
100	477	-447	6.4	383	39
105	515	-485	7.6	318	31
110	560	-530	9.0	264	25
115	615	-585	11.0	212	20
120	655	-625	8.0	301	29
125	702	-672	9.4	252	24
130	752	-722	10.0	236	22
135	776	-746	4.8	525	56
140					
145					
150					
155					
160					
165					
170					
175					
180					
185					
190					
195					
200					



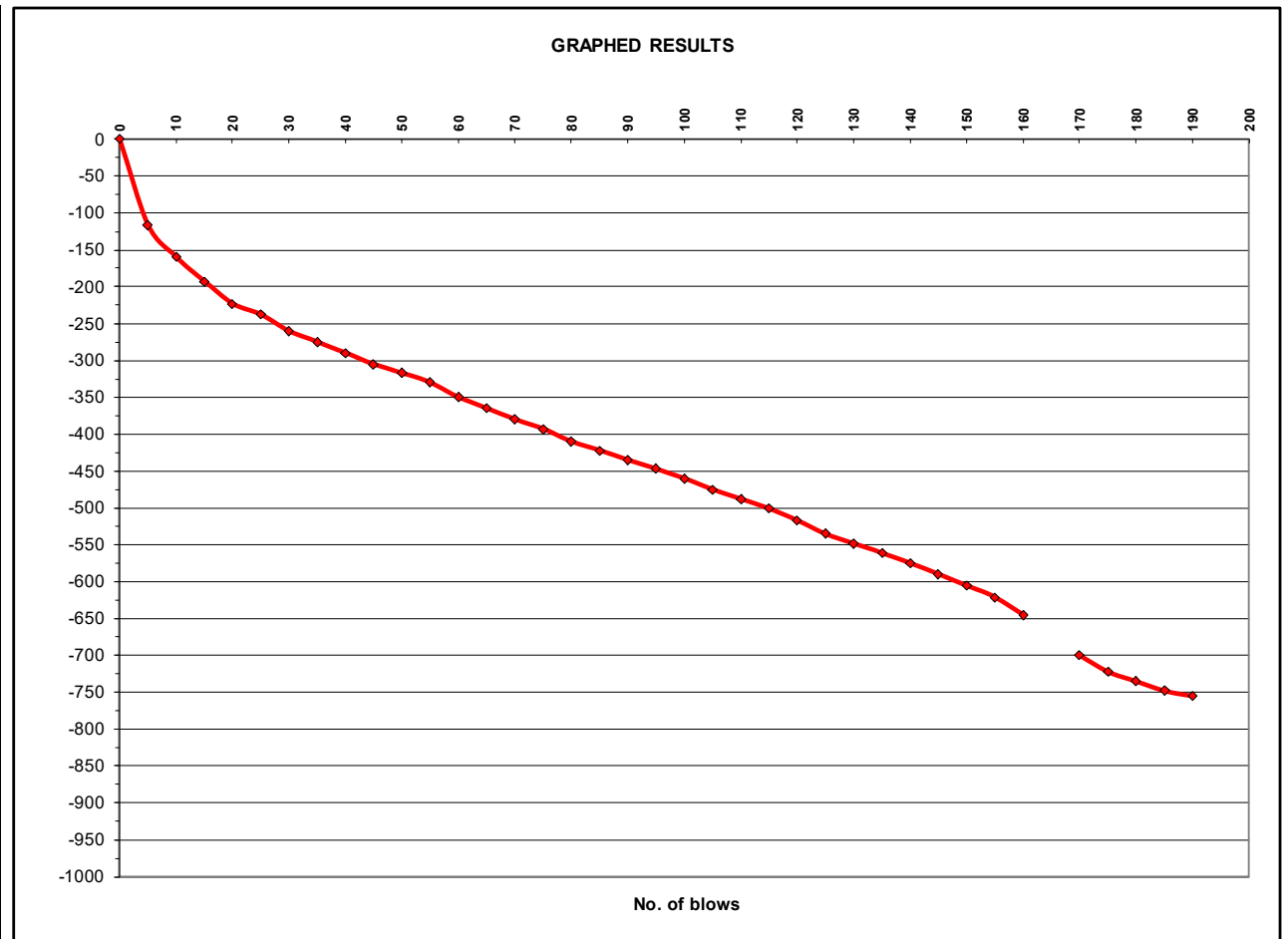
ANALYSES OF DYNAMIC CONE PENETRATION TEST RESULTS

PROJECT: **EAST LONDON IDZ PLATFORM A**

DEPTH: Surface

CONDUCTED ON: Thursday, June 14, 2018

NO. OF BLOWS	TP 13				
	Values (mm)	Cumulative penetration (mm)	mm/blow	UCS (kPa)	CBR
0	25	0	0.0		
5	141	-116	23.2	94	8
10	185	-160	8.8	271	26
15	218	-193	6.6	371	37
20	248	-223	6.0	411	42
25	263	-238	3.0	876	102
30	285	-260	4.4	577	62
35	300	-275	3.0	876	102
40	315	-290	3.0	876	102
45	330	-305	3.0	876	102
50	342	-317	2.4	1117	135
55	355	-330	2.6	1023	122
60	375	-350	4.0	640	70
65	390	-365	3.0	876	102
70	405	-380	3.0	876	102
75	418	-393	2.6	1023	122
80	435	-410	3.4	764	87
85	447	-422	2.4	1117	135
90	460	-435	2.6	1023	122
95	472	-447	2.4	1117	135
100	485	-460	2.6	1023	122
105	500	-475	3.0	876	102
110	513	-488	2.6	1023	122
115	526	-501	2.6	1023	122
120	542	-517	3.2	816	94
125	560	-535	3.6	718	81
130	573	-548	2.6	1023	122
135	586	-561	2.6	1023	122
140	600	-575	2.8	944	111
145	615	-590	3.0	876	102
150	630	-605	3.0	876	102
155	646	-621	3.2	816	94
160	670	-645	4.8	525	56
165					
170	700	-700	140.0	13	1
175	722	-722	4.4	577	62
180	735	-735	2.6	1023	122
185	748	-748	2.6	1023	122
190	755	-755	1.4	2010	267
195					
200					



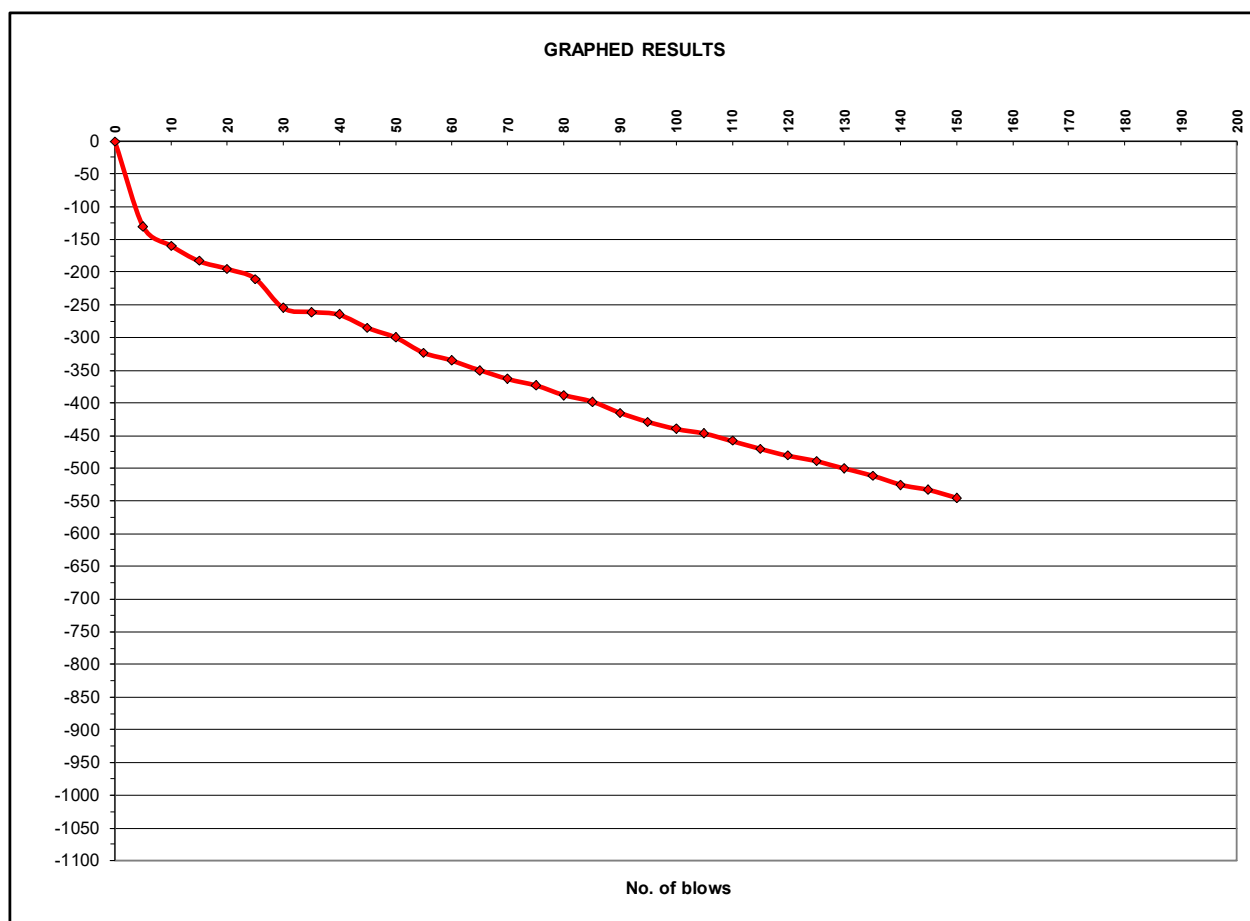
ANALYSES OF DYNAMIC CONE PENETRATION TEST RESULTS

PROJECT: **EAST LONDON IDZ PLATFORM A**

DEPTH: Surface

CONDUCTED ON: Thursday, June 14, 2018

NO. OF BLOWS	TP 14				
	Values (mm)	Cumulative penetration (mm)	mm/blow	UCS (kPa)	CBR
0	25	0	0.0		
5	155	-130	26.0	83	7
10	185	-160	6.0	411	42
15	208	-183	4.6	550	59
20	220	-195	2.4	1117	135
25	235	-210	3.0	876	102
30	280	-255	9.0	264	25
35	286	-261	1.2	2377	325
40	290	-265	0.8	3699	544
45	310	-285	4.0	640	70
50	325	-300	3.0	876	102
55	348	-323	4.6	550	59
60	360	-335	2.4	1117	135
65	375	-350	3.0	876	102
70	388	-363	2.6	1023	122
75	398	-373	2.0	1362	170
80	413	-388	3.0	876	102
85	423	-398	2.0	1362	170
90	440	-415	3.4	764	87
95	454	-429	2.8	944	111
100	465	-440	2.2	1228	151
105	472	-447	1.4	2010	267
110	483	-458	2.2	1228	151
115	495	-470	2.4	1117	135
120	506	-481	2.2	1228	151
125	514	-489	1.6	1737	226
130	525	-500	2.2	1228	151
135	536	-511	2.2	1228	151
140	550	-525	2.8	944	111
145	558	-533	1.6	1737	226
150	570	-545	2.4	1117	135
155					
160					
165					
170					
175					
180					
185					
190					
195					
200					



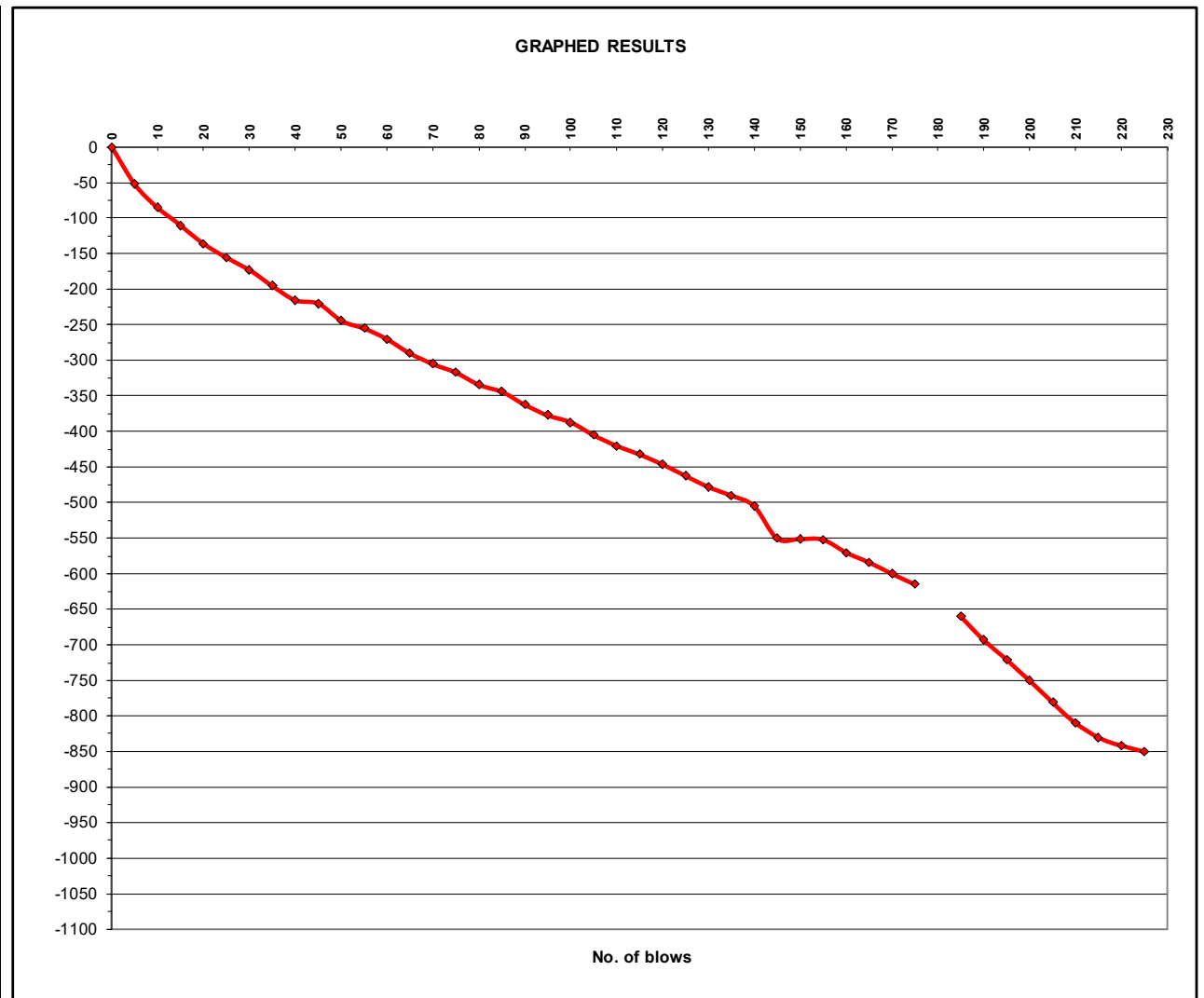
ANALYSES OF DYNAMIC CONE PENETRATION TEST RESULTS

PROJECT: **EAST LONDON IDZ PLATFORM A**

DEPTH: Surface

CONDUCTED ON: Thursday, June 14, 2018

NO. OF BLOWS	TP 15				
	Values (mm)	Cumulative penetration (mm)	mm/blow	UCS (kPa)	CBR
0	30	0	0.0		
5	82	-52	10.4	226	21
10	115	-85	6.6	371	37
15	140	-110	5.0	502	53
20	166	-136	5.2	481	51
25	185	-155	3.8	677	75
30	203	-173	3.6	718	81
35	225	-195	4.4	577	62
40	245	-215	4.0	640	70
45	250	-220	1.0	2900	410
50	274	-244	4.8	525	56
55	285	-255	2.2	1228	151
60	300	-270	3.0	876	102
65	320	-290	4.0	640	70
70	335	-305	3.0	876	102
75	347	-317	2.4	1117	135
80	364	-334	3.4	764	87
85	374	-344	2.0	1362	170
90	392	-362	3.6	718	81
95	407	-377	3.0	876	102
100	417	-387	2.0	1362	170
105	435	-405	3.6	718	81
110	450	-420	3.0	876	102
115	462	-432	2.4	1117	135
120	476	-446	2.8	944	111
125	492	-462	3.2	816	94
130	508	-478	3.2	816	94
135	520	-490	2.4	1117	135
140	535	-505	3.0	876	102
145	580	-550	9.0	264	25
150	581	-551	0.2	16760	3166
155	582	-552	0.2	16760	3166
160	600	-570	3.6	718	81
165	614	-584	2.8	944	111
170	630	-600	3.2	816	94
175	645	-615	3.0	876	102
180					
185	660	-660	132.0	14	1
190	693	-693	6.6	371	37
195	721	-721	5.6	443	46
200	750	-750	5.8	427	44
205	781	-781	6.2	397	40
210	810	-810	5.8	427	44
215	830	-830	4.0	640	70
220	842	-842	2.4	1117	135
225	850	-850	1.6	1737	226
230					



ANALYSES OF DYNAMIC CONE PENETRATION TEST RESULTS

PROJECT: **EAST LONDON IDZ PLATFORM A**

DEPTH: Surface

CONDUCTED ON: Thursday, June 14, 2018

NO. OF BLOWS	TP 16				
	Values (mm)	Cumulative penetration (mm)	mm/blow	UCS (kPa)	CBR
0	70	0	0.0		
5	105	-35	7.0	348	35
10	140	-70	7.0	348	35
15	180	-110	8.0	301	29
20	205	-135	5.0	502	53
25	230	-160	5.0	502	53
30	250	-180	4.0	640	70
35	275	-205	5.0	502	53
40	298	-228	4.6	550	59
45	315	-245	3.4	764	87
50	337	-267	4.4	577	62
55	360	-290	4.6	550	59
60	382	-312	4.4	577	62
65	405	-335	4.6	550	59
70	430	-360	5.0	502	53
75	450	-380	4.0	640	70
80	475	-405	5.0	502	53
85	492	-422	3.4	764	87
90	515	-445	4.6	550	59
95	534	-464	3.8	677	75
100	552	-482	3.6	718	81
105	572	-502	4.0	640	70
110	600	-530	5.6	443	46
115	620	-550	4.0	640	70
120	647	-577	5.4	461	48
125	673	-603	5.2	481	51
130	695	-625	4.4	577	62
135	718	-648	4.6	550	59
140	740	-670	4.4	577	62
145	758	-688	3.6	718	81
150	780	-710	4.4	577	62
155	807	-737	5.4	461	48
160	825	-755	3.6	718	81
165	850	-780	5.0	502	53
170	870	-800	4.0	640	70
175	898	-828	5.6	443	46
180	915	-845	3.4	764	87
185	935	-865	4.0	640	70
190	965	-895	6.0	411	42
195	994	-924	5.8	427	44
200	1040	-970	9.2	258	24
205					
210	1070	-1070	214.0	8	0
215	1090	-1090	4.0	640	70
220	1102	-1102	2.4	1117	135
225	1110	-1110	1.6	1737	226
230	1126	-1126	3.2	816	94
235	1145	-1145	3.8	677	75
240	1162	-1162	3.4	764	87
245	1180	-1180	3.6	718	81
250	1192	-1192	2.4	1117	135
255	1203	-1203	2.2	1228	151
260	1213	-1213	2.0	1362	170
265	1224	-1224	2.2	1228	151
270					



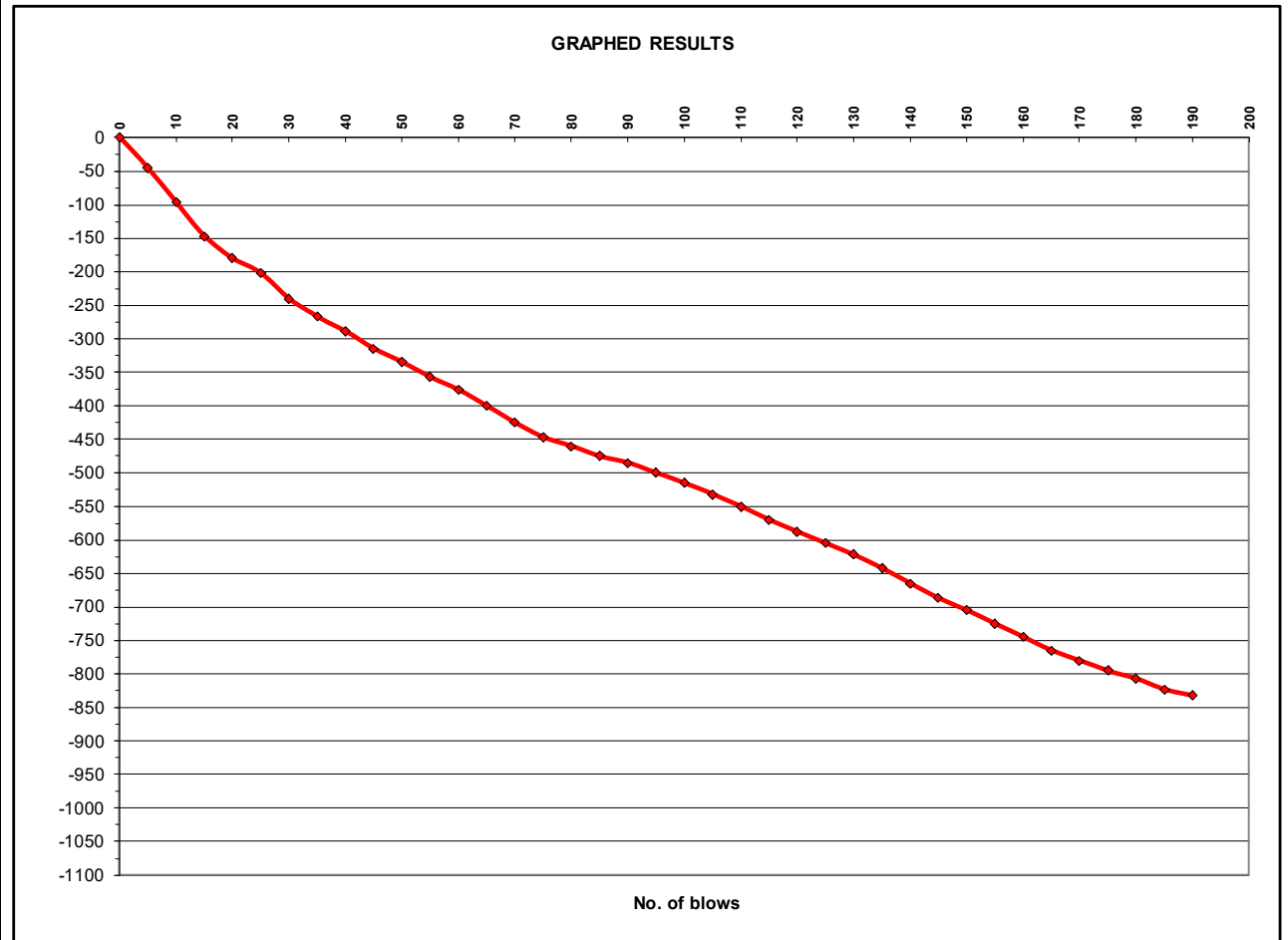
ANALYSES OF DYNAMIC CONE PENETRATION TEST RESULTS

PROJECT: **EAST LONDON IDZ PLATFORM A**

DEPTH: Surface

CONDUCTED ON: Thursday, June 14, 2018

NO. OF BLOWS	TP 17				
	Values (mm)	Cumulative penetration (mm)	mm/blow	UCS (kPa)	CBR
0	25	0	0.0		
5	70	-45	9.0	264	25
10	122	-97	10.4	226	21
15	172	-147	10.0	236	22
20	205	-180	6.6	371	37
25	227	-202	4.4	577	62
30	265	-240	7.6	318	31
35	292	-267	5.4	461	48
40	314	-289	4.4	577	62
45	340	-315	5.2	481	51
50	360	-335	4.0	640	70
55	382	-357	4.4	577	62
60	401	-376	3.8	677	75
65	425	-400	4.8	525	56
70	450	-425	5.0	502	53
75	472	-447	4.4	577	62
80	485	-460	2.6	1023	122
85	500	-475	3.0	876	102
90	510	-485	2.0	1362	170
95	525	-500	3.0	876	102
100	540	-515	3.0	876	102
105	557	-532	3.4	764	87
110	575	-550	3.6	718	81
115	595	-570	4.0	640	70
120	613	-588	3.6	718	81
125	630	-605	3.4	764	87
130	647	-622	3.4	764	87
135	667	-642	4.0	640	70
140	690	-665	4.6	550	59
145	712	-687	4.4	577	62
150	730	-705	3.6	718	81
155	750	-725	4.0	640	70
160	770	-745	4.0	640	70
165	790	-765	4.0	640	70
170	805	-780	3.0	876	102
175	820	-795	3.0	876	102
180	832	-807	2.4	1117	135
185	848	-823	3.2	816	94
190	857	-832	1.8	1528	194
195					
200					



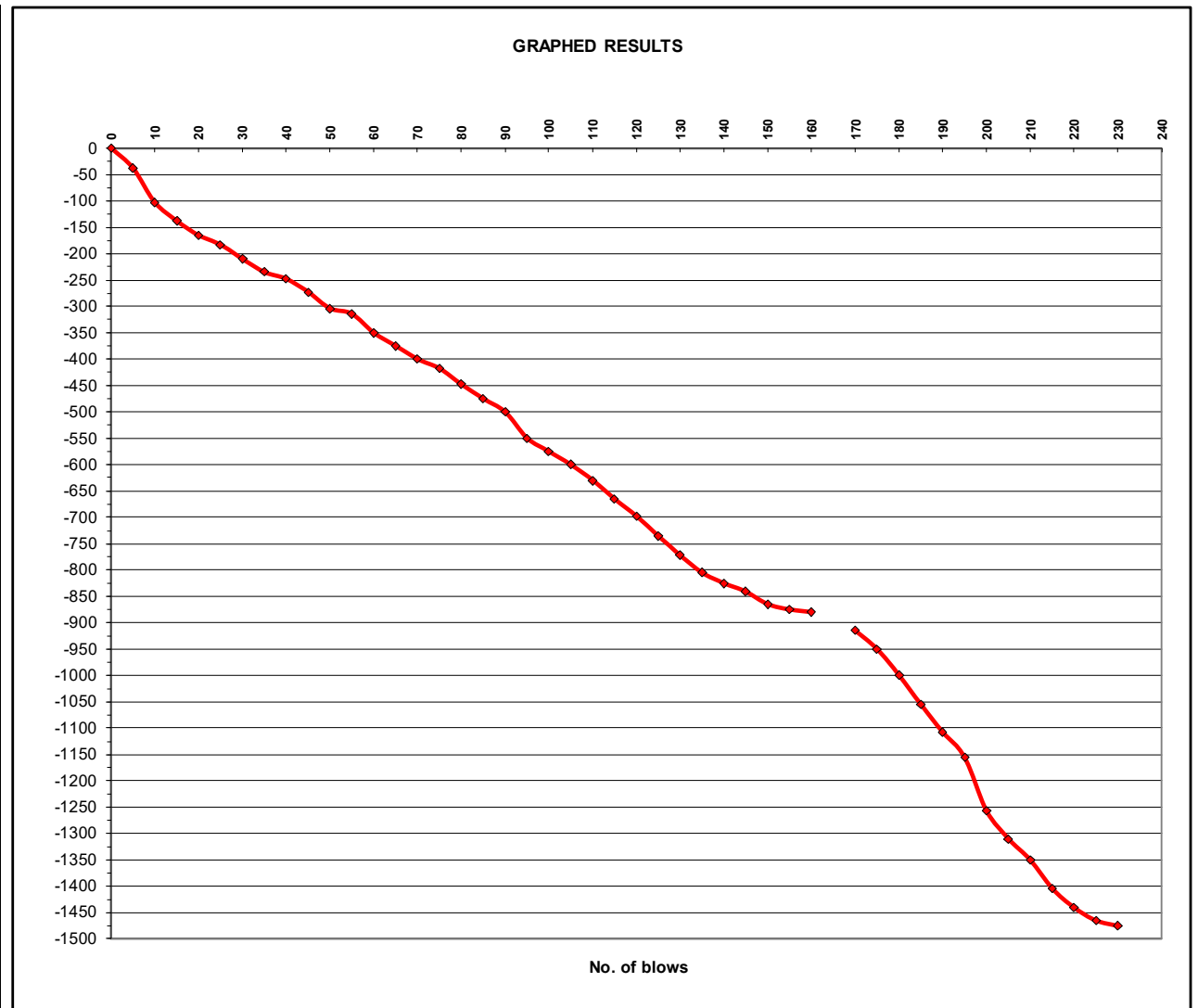
ANALYSES OF DYNAMIC CONE PENETRATION TEST RESULTS

PROJECT: **EAST LONDON IDZ PLATFORM A**

DEPTH: Surface

CONDUCTED ON: Thursday, June 14, 2018

NO. OF BLOWS	TP 21				
	Values (mm)	Cumulative penetration (mm)	mm/blow	UCS (kPa)	CBR
0	10	0	0.0		
5	48	-38	7.6	318	31
10	113	-103	13.0	177	16
15	148	-138	7.0	348	35
20	175	-165	5.4	461	48
25	193	-183	3.6	718	81
30	220	-210	5.4	461	48
35	245	-235	5.0	502	53
40	258	-248	2.6	1023	122
45	283	-273	5.0	502	53
50	314	-304	6.2	397	40
55	324	-314	2.0	1362	170
60	360	-350	7.2	337	33
65	385	-375	5.0	502	53
70	410	-400	5.0	502	53
75	428	-418	3.6	718	81
80	458	-448	6.0	411	42
85	485	-475	5.4	461	48
90	510	-500	5.0	502	53
95	560	-550	10.0	236	22
100	585	-575	5.0	502	53
105	610	-600	5.0	502	53
110	640	-630	6.0	411	42
115	675	-665	7.0	348	35
120	708	-698	6.6	371	37
125	745	-735	7.4	327	32
130	782	-772	7.4	327	32
135	815	-805	6.6	371	37
140	835	-825	4.0	640	70
145	851	-841	3.2	816	94
150	875	-865	4.8	525	56
155	885	-875	2.0	1362	170
160	890	-880	1.0	2900	410
165					
170	915	-915	183.0	10	1
175	950	-950	7.0	348	35
180	1000	-1000	10.0	236	22
185	1055	-1055	11.0	212	20
190	1108	-1108	10.6	221	20
195	1155	-1155	9.4	252	24
200	1257	-1257	20.4	108	9
205	1310	-1310	10.6	221	20
210	1350	-1350	8.0	301	29
215	1404	-1404	10.8	217	20
220	1440	-1440	7.2	337	33
225	1465	-1465	5.0	502	53
230	1475	-1475	2.0	1362	170
235					



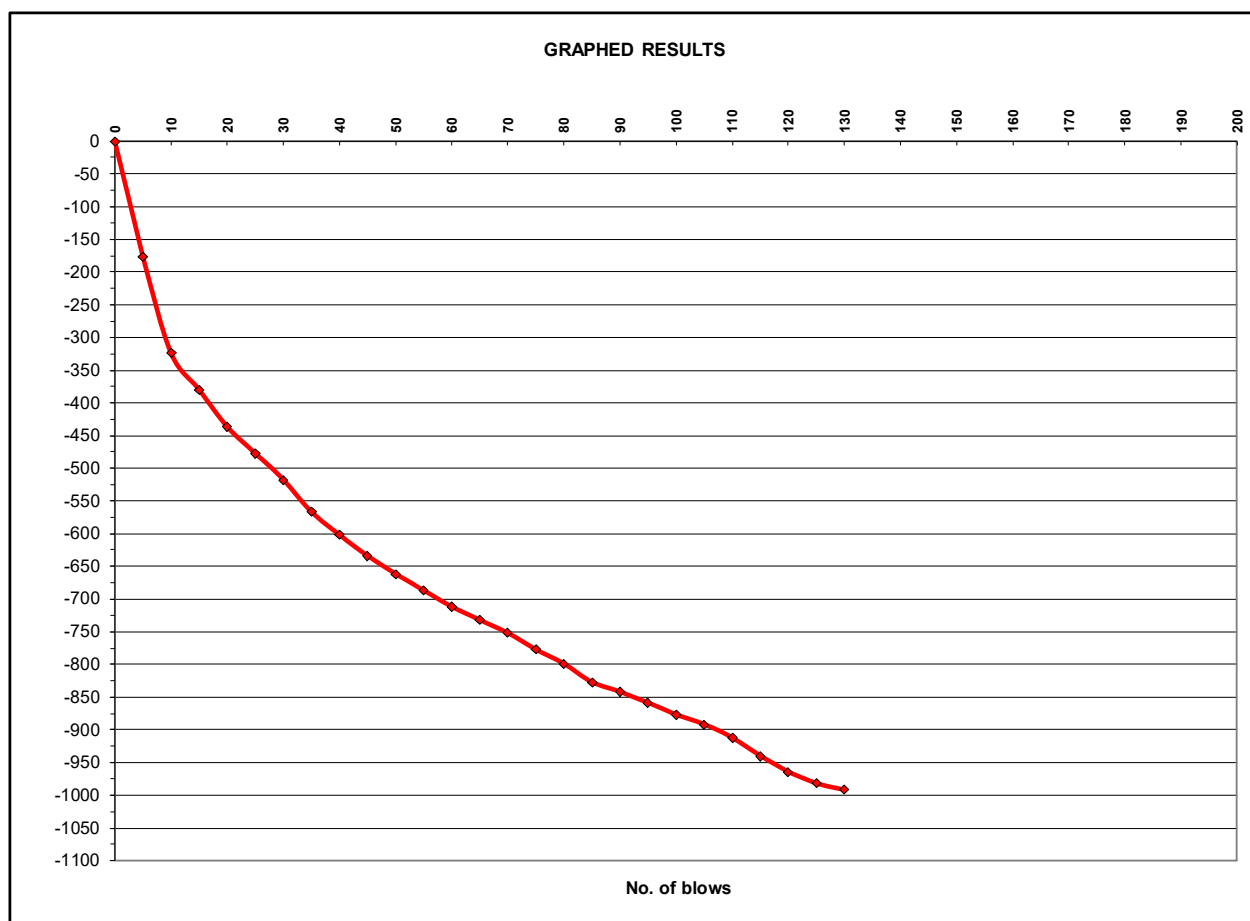
ANALYSES OF DYNAMIC CONE PENETRATION TEST RESULTS

PROJECT: **EAST LONDON IDZ PLATFORM A**

DEPTH: Surface

CONDUCTED ON: Thursday, June 14, 2018

NO. OF BLOWS	TP 22				
	Values (mm)	Cumulative penetration (mm)	mm/blow	UCS (kPa)	CBR
0	28	0	0.0		
5	205	-177	35.4	59	4
10	352	-324	29.4	73	6
15	408	-380	11.2	208	19
20	465	-437	11.4	204	19
25	505	-477	8.0	301	29
30	546	-518	8.2	293	28
35	595	-567	9.8	241	23
40	630	-602	7.0	348	35
45	662	-634	6.4	383	39
50	690	-662	5.6	443	46
55	715	-687	5.0	502	53
60	740	-712	5.0	502	53
65	760	-732	4.0	640	70
70	780	-752	4.0	640	70
75	805	-777	5.0	502	53
80	827	-799	4.4	577	62
85	855	-827	5.6	443	46
90	870	-842	3.0	876	102
95	887	-859	3.4	764	87
100	905	-877	3.6	718	81
105	920	-892	3.0	876	102
110	940	-912	4.0	640	70
115	968	-940	5.6	443	46
120	992	-964	4.8	525	56
125	1010	-982	3.6	718	81
130	1020	-992	2.0	1362	170
135					
140					
145					
150					
155					
160					
165					
170					
175					
180					
185					
190					
195					
200					



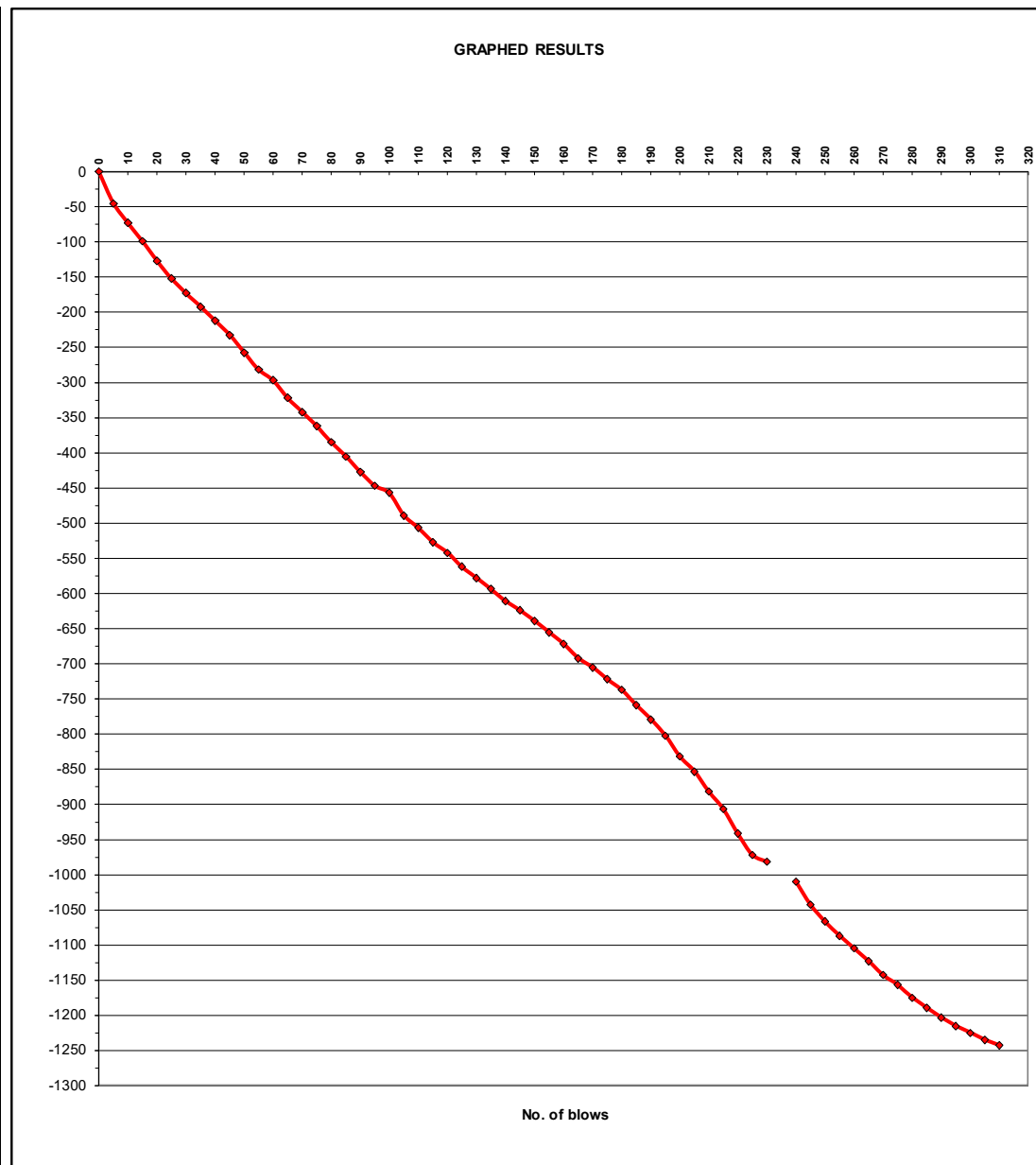
ANALYSES OF DYNAMIC CONE PENETRATION TEST RESULTS

PROJECT: **EAST LONDON IDZ PLATFORM A**

DEPTH: Surface

CONDUCTED ON: Thursday, June 14, 2018

NO. OF BLOWS	TP 23				
	Values (mm)	Cumulative penetration (mm)	mm/blow	UCS (kPa)	CBR
0	23	0	0.0		
5	68	-45	9.0	264	25
10	96	-73	5.6	443	46
15	122	-99	5.2	481	51
20	150	-127	5.6	443	46
25	175	-152	5.0	502	53
30	196	-173	4.2	607	66
35	215	-192	3.8	677	75
40	235	-212	4.0	640	70
45	255	-232	4.0	640	70
50	280	-257	5.0	502	53
55	305	-282	5.0	502	53
60	320	-297	3.0	876	102
65	345	-322	5.0	502	53
70	365	-342	4.0	640	70
75	385	-362	4.0	640	70
80	408	-385	4.6	550	59
85	428	-405	4.0	640	70
90	450	-427	4.4	577	62
95	470	-447	4.0	640	70
100	480	-457	2.0	1362	170
105	512	-489	6.4	383	39
110	530	-507	3.6	718	81
115	550	-527	4.0	640	70
120	565	-542	3.0	876	102
125	585	-562	4.0	640	70
130	601	-578	3.2	816	94
135	617	-594	3.2	816	94
140	634	-611	3.4	764	87
145	647	-624	2.6	1023	122
150	662	-639	3.0	876	102
155	678	-655	3.2	816	94
160	695	-672	3.4	764	87
165	715	-692	4.0	640	70
170	728	-705	2.6	1023	122
175	745	-722	3.4	764	87
180	760	-737	3.0	876	102
185	782	-759	4.4	577	62
190	802	-779	4.0	640	70
195	825	-802	4.6	550	59
200	855	-832	6.0	411	42
205	876	-853	4.2	607	66
210	905	-882	5.8	427	44
215	930	-907	5.0	502	53
220	965	-942	7.0	348	35
225	995	-972	6.0	411	42
230	1005	-982	2.0	1362	170
235					
240	1010	-1010	202.0	9	0
245	1043	-1043	6.6	371	37
250	1067	-1067	4.8	525	56
255	1087	-1087	4.0	640	70
260	1105	-1105	3.6	718	81
265	1123	-1123	3.6	718	81
270	1143	-1143	4.0	640	70
275	1157	-1157	2.8	944	111
280	1175	-1175	3.6	718	81
285	1189	-1189	2.8	944	111
290	1203	-1203	2.8	944	111
295	1215	-1215	2.4	1117	135
300	1225	-1225	2.0	1362	170
305	1235	-1235	2.0	1362	170
310	1243	-1243	1.6	1737	226
315					



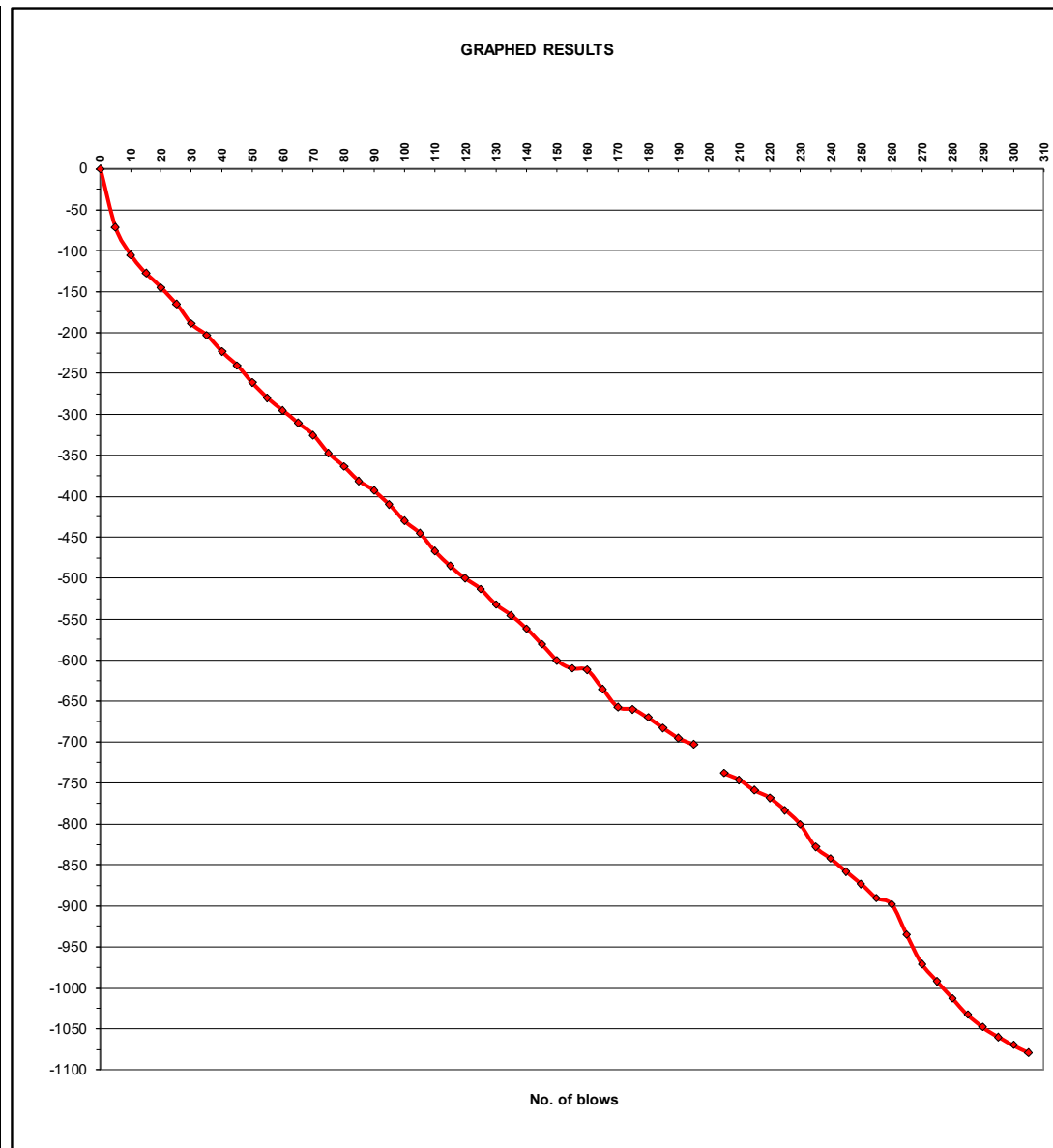
ANALYSES OF DYNAMIC CONE PENETRATION TEST RESULTS

PROJECT: EAST LONDON IDZ PLATFORM A

DEPTH: Surface

CONDUCTED ON: Thursday, June 14, 2018

NO. OF BLOWS	TP 24				
	Values (mm)	Cumulative penetration (mm)	mm/blow	UCS (kPa)	CBR
0	15	0	0.0		
5	86	-71	14.2	161	14
10	120	-105	6.8	359	36
15	142	-127	4.4	577	62
20	160	-145	3.6	718	81
25	180	-165	4.0	640	70
30	204	-189	4.8	525	56
35	218	-203	2.8	944	111
40	238	-223	4.0	640	70
45	255	-240	3.4	764	87
50	276	-261	4.2	607	66
55	295	-280	3.8	677	75
60	310	-295	3.0	876	102
65	325	-310	3.0	876	102
70	340	-325	3.0	876	102
75	362	-347	4.4	577	62
80	378	-363	3.2	816	94
85	396	-381	3.6	718	81
90	408	-393	2.4	1117	135
95	425	-410	3.4	764	87
100	445	-430	4.0	640	70
105	460	-445	3.0	876	102
110	482	-467	4.4	577	62
115	500	-485	3.6	718	81
120	515	-500	3.0	876	102
125	528	-513	2.6	1023	122
130	547	-532	3.8	677	75
135	560	-545	2.6	1023	122
140	576	-561	3.2	816	94
145	595	-580	3.8	677	75
150	615	-600	4.0	640	70
155	625	-610	2.0	1362	170
160	627	-612	0.4	7873	1313
165	650	-635	4.6	550	59
170	672	-657	4.4	577	62
175	675	-660	0.6	5061	784
180	685	-670	2.0	1362	170
185	698	-683	2.6	1023	122
190	710	-695	2.4	1117	135
195	718	-703	1.6	1737	226
200					
205	738	-738	147.6	13	1
210	746	-746	1.6	1737	226
215	759	-759	2.6	1023	122
220	768	-768	1.8	1528	194
225	783	-783	3.0	876	102
230	800	-800	3.4	764	87
235	828	-828	5.6	443	46
240	842	-842	2.8	944	111
245	858	-858	3.2	816	94
250	873	-873	3.0	876	102
255	890	-890	3.4	764	87
260	898	-898	1.6	1737	226
265	935	-935	7.4	327	32
270	971	-971	7.2	337	33
275	992	-992	4.2	607	66
280	1013	-1013	4.2	607	66
285	1033	-1033	4.0	640	70
290	1048	-1048	3.0	876	102
295	1060	-1060	2.4	1117	135
300	1070	-1070	2.0	1362	170
305	1079	-1079	1.8	1528	194
310					



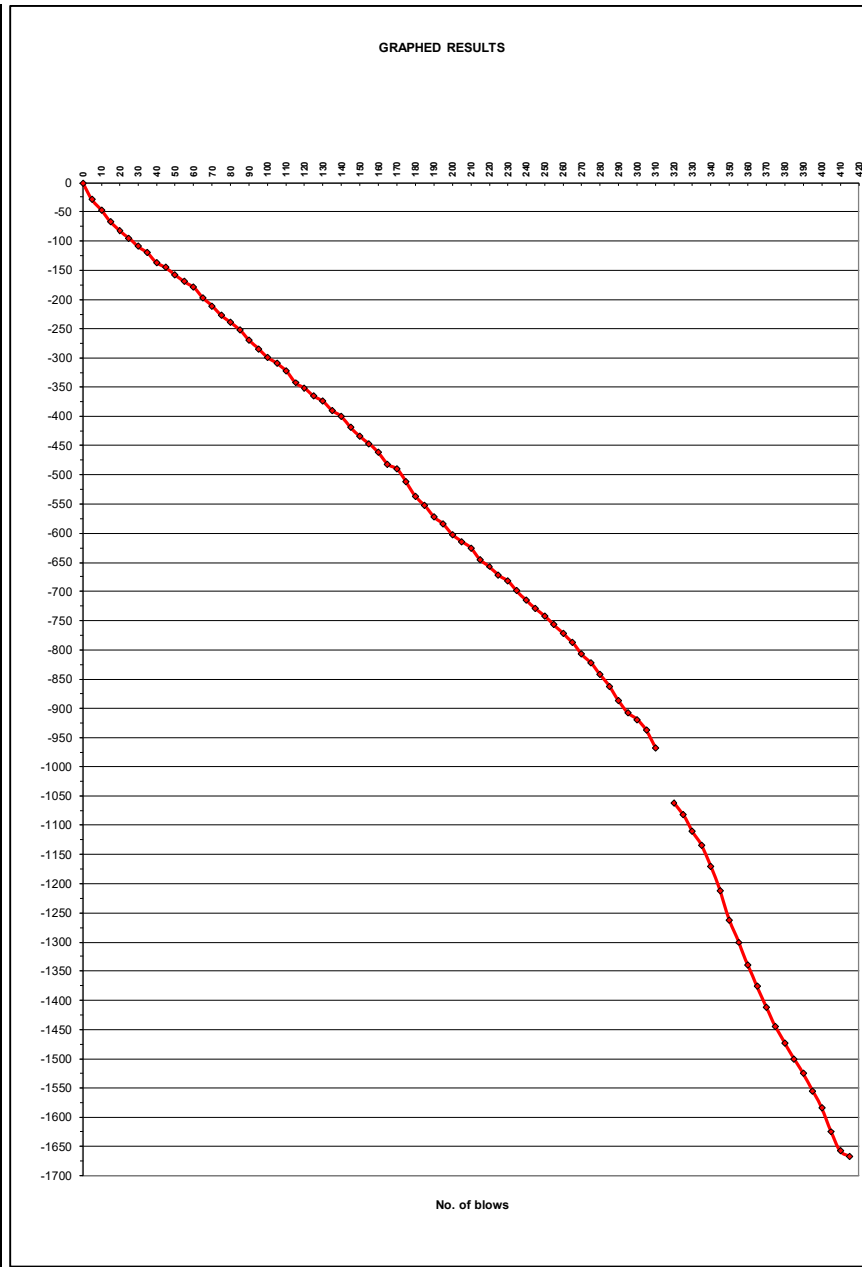
ANALYSES OF DYNAMIC CONE PENETRATION TEST RESULTS

PROJECT: **EAST LONDON IDZ PLATFORM A**

DEPTH: Surface

CONDUCTED ON: Thursday, June 14, 2018

NO. OF BLOWS	TP 25				
	Values (mm)	Cumulative penetration (mm)	mm/blow	UCS (kPa)	CBR
0	63	0	0.0		
5	92	-29	5.8	427	44
10	110	-47	3.6	718	81
15	130	-67	4.0	640	70
20	145	-82	3.0	876	102
25	158	-95	2.6	1023	122
30	172	-109	2.8	944	111
35	183	-120	2.2	1228	151
40	200	-137	3.4	764	87
45	208	-145	1.6	1737	226
50	221	-158	2.6	1023	122
55	232	-169	2.2	1228	151
60	242	-179	2.0	1362	170
65	260	-197	3.6	718	81
70	274	-211	2.8	944	111
75	290	-227	3.2	816	94
80	302	-239	2.4	1117	135
85	315	-252	2.6	1023	122
90	332	-269	3.4	764	87
95	347	-284	3.0	876	102
100	362	-299	3.0	876	102
105	372	-309	2.0	1362	170
110	385	-322	2.6	1023	122
115	405	-342	4.0	640	70
120	415	-352	2.0	1362	170
125	428	-365	2.6	1023	122
130	437	-374	1.8	1528	194
135	453	-390	3.2	816	94
140	463	-400	2.0	1362	170
145	482	-419	3.8	677	75
150	497	-434	3.0	876	102
155	510	-447	2.6	1023	122
160	525	-462	3.0	876	102
165	545	-482	4.0	640	70
170	553	-490	1.6	1737	226
175	575	-512	4.4	577	62
180	600	-537	5.0	502	53
185	615	-552	3.0	876	102
190	635	-572	4.0	640	70
195	647	-584	2.4	1117	135
200	665	-602	3.6	718	81
205	677	-614	2.4	1117	135
210	688	-625	2.2	1228	151
215	708	-645	4.0	640	70
220	720	-667	2.4	1117	135
225	735	-672	3.0	876	102
230	745	-682	2.0	1362	170
235	762	-699	3.4	764	87
240	778	-715	3.2	816	94
245	792	-729	2.8	944	111
250	805	-742	2.6	1023	122
255	820	-757	3.0	876	102
260	835	-772	3.0	876	102
265	850	-787	3.0	876	102
270	870	-807	4.0	640	70
275	885	-822	3.0	876	102
280	905	-842	4.0	640	70
285	925	-862	4.0	640	70
290	950	-887	5.0	502	53
295	970	-907	4.0	640	70
300	982	-919	2.4	1117	135
305	1000	-937	3.6	718	81
310	1030	-967	6.0	411	42
315					
320	1062	-1062	212.4	8	0
325	1082	-1082	4.0	640	70
330	1110	-1110	5.6	443	46
335	1135	-1135	5.0	502	53
340	1170	-1170	7.0	348	35
345	1212	-1212	8.4	285	27
350	1262	-1262	10.0	236	22
355	1300	-1300	7.6	318	31
360	1340	-1340	8.0	301	29
365	1376	-1376	7.2	337	33
370	1412	-1412	7.2	337	33
375	1445	-1445	6.6	371	37
380	1473	-1473	5.6	443	46
385	1500	-1500	5.4	461	48
390	1525	-1525	5.0	502	53
395	1555	-1555	6.0	411	42
400	1584	-1584	5.8	427	44
405	1625	-1625	8.2	293	28
410	1658	-1658	6.6	371	37
415	1668	-1668	2.0	1362	170
420					



ANALYSES OF DYNAMIC CONE PENETRATION TEST RESULTS

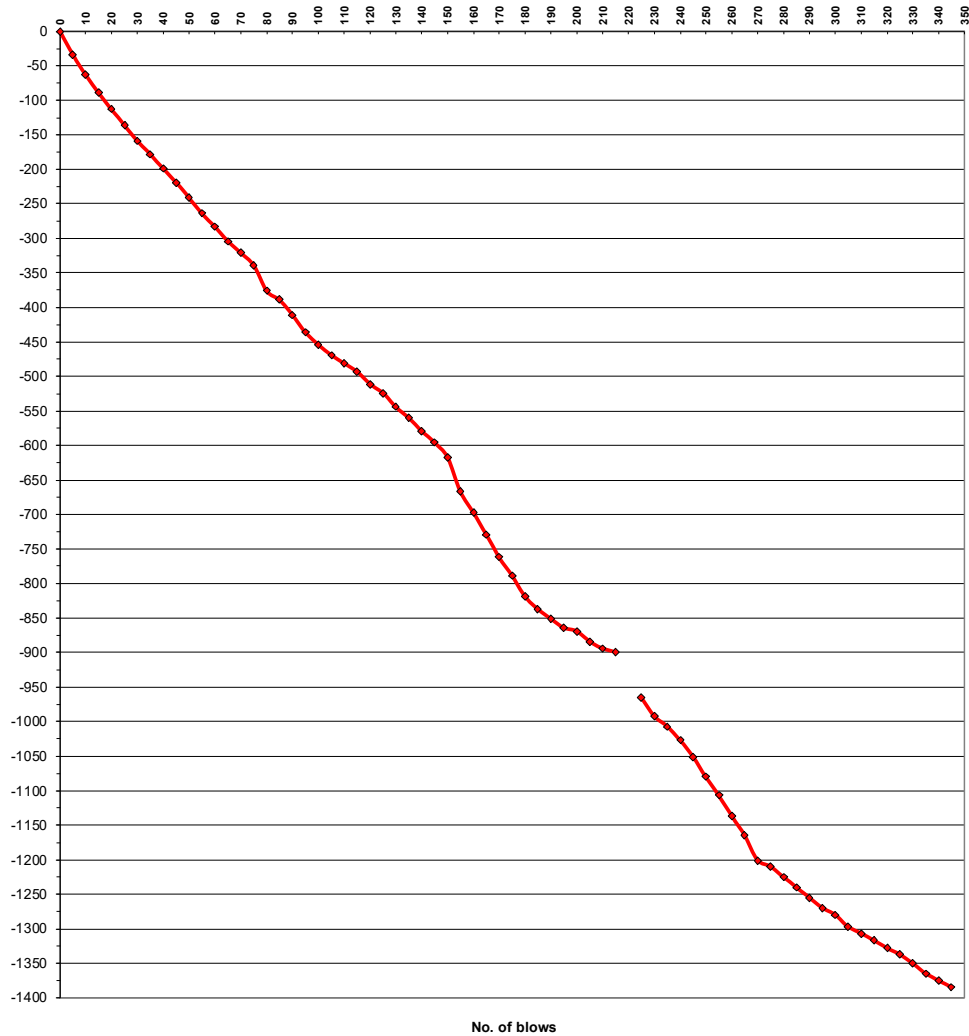
PROJECT: EAST LONDON IDZ PLATFORM A

DEPTH: Surface

CONDUCTED ON: Thursday, June 14, 2018

NO. OF BLOWS	TP 26				
	Values (mm)	Cumulative penetration (mm)	mm/blow	UCS (kPa)	CBR
0	41	0	0.0		
5	75	-34	6.8	359	36
10	104	-63	5.8	427	44
15	130	-89	5.2	481	51
20	154	-113	4.8	525	56
25	177	-136	4.6	550	59
30	200	-159	4.6	550	59
35	219	-178	3.8	677	75
40	240	-199	4.2	607	66
45	260	-219	4.0	640	70
50	282	-241	4.4	577	62
55	305	-264	4.6	550	59
60	324	-283	3.8	677	75
65	345	-304	4.2	607	66
70	362	-321	3.4	764	87
75	380	-339	3.6	718	81
80	417	-376	7.4	327	32
85	430	-389	2.6	1023	122
90	452	-411	4.4	577	62
95	477	-436	5.0	502	53
100	495	-454	3.6	718	81
105	510	-469	3.0	876	102
110	522	-481	2.4	1117	135
115	534	-493	2.4	1117	135
120	552	-511	3.6	718	81
125	565	-524	2.6	1023	122
130	585	-544	4.0	640	70
135	601	-560	3.2	816	94
140	620	-579	3.8	677	75
145	637	-596	3.4	764	87
150	658	-617	4.2	607	66
155	708	-667	10.0	236	22
160	738	-697	6.0	411	42
165	770	-729	6.4	383	39
170	803	-762	6.6	371	37
175	830	-789	5.4	461	48
180	860	-819	6.0	411	42
185	878	-837	3.6	718	81
190	892	-851	2.8	944	111
195	905	-864	2.6	1023	122
200	910	-869	1.0	2900	410
205	925	-884	3.0	876	102
210	935	-894	2.0	1362	170
215	940	-899	1.0	2900	410
220					
225	965	-965	193.0	9	1
230	992	-992	5.4	461	48
235	1007	-1007	3.0	876	102
240	1027	-1027	4.0	640	70
245	1051	-1051	4.8	525	56
250	1080	-1080	5.8	427	44
255	1107	-1107	5.4	461	48
260	1137	-1137	6.0	411	42
265	1165	-1165	5.6	443	46
270	1201	-1201	7.2	337	33
275	1210	-1210	1.8	1528	194
280	1225	-1225	3.0	876	102
285	1240	-1240	3.0	876	102
290	1255	-1255	3.0	876	102
295	1270	-1270	3.0	876	102
300	1280	-1280	2.0	1362	170
305	1297	-1297	3.4	764	87
310	1307	-1307	2.0	1362	170
315	1317	-1317	2.0	1362	170
320	1328	-1328	2.2	1228	151
325	1337	-1337	1.8	1528	194
330	1350	-1350	2.6	1023	122
335	1365	-1365	3.0	876	102
340	1375	-1375	2.0	1362	170
345	1385	-1385	2.0	1362	170
350					

GRAPHED RESULTS



ANALYSES OF DYNAMIC CONE PENETRATION TEST RESULTS

PROJECT: **EAST LONDON IDZ PLATFORM A**

DEPTH: Surface

CONDUCTED ON: Thursday, June 14, 2018

NO. OF BLOWS	TP 28				
	Values (mm)	Cumulative penetration (mm)	mm/blow	UCS (kPa)	CBR
0	10	0	0.0		
5	240	-230	46.0	45	3
10	300	-290	12.0	193	17
15	365	-355	13.0	177	16
20	395	-385	6.0	411	42
25	420	-410	5.0	502	53
30	442	-432	4.4	577	62
35	462	-452	4.0	640	70
40	485	-475	4.6	550	59
45	508	-498	4.6	550	59
50	530	-520	4.4	577	62
55	552	-542	4.4	577	62
60	575	-565	4.6	550	59
65	605	-595	6.0	411	42
70	625	-615	4.0	640	70
75	645	-635	4.0	640	70
80	660	-650	3.0	876	102
85	678	-668	3.6	718	81
90	695	-685	3.4	764	87
95	705	-695	2.0	1362	170
100	720	-710	3.0	876	102
105	735	-725	3.0	876	102
110	755	-745	4.0	640	70
115	775	-765	4.0	640	70
120	790	-780	3.0	876	102
125	800	-790	2.0	1362	170
130	807	-797	1.4	2010	267
135					
140					
145					
150					
155					
160					
165					
170					
175					
180					
185					
190					
195					
200					

