

ELECTROGAS MALTA CONSORTIUM  
 Delimara LNG Regasification Terminal  
 GEOTECHNICAL INVESTIGATION FOR OFFSHORE MARINE WORKS  
 FACTUAL REPORT

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# FOREWARD

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No recommendations are made in this factual reports. Whilst opinions may be expressed relating to sub-soil conditions in parts of the site not investigated, for example away from the location of the borehole drilled, these are only for guidance and no liability can be accepted for their accuracy.

The rocks and soils encountered and the samples retained represent a limited amount of the material present in the subsurface at the site. Although the investigation recovered representative samples of the rocks present, some material present on the site may not have been examined. Should significantly different rocks or soils be determined during site works, then further investigation may prove necessary.

Unless otherwise stated in this report, drilling is undertaken using rotary techniques. This method is regarded as being one of the most reliable.

Boring and sampling procedures are undertaken in accordance with B.S.5930,; 1999 “Code of practice for Site Investigations”. Likewise laboratory testing complies with ISRM Suggested Method 1999.

# 1 INTRODUCTION

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## 1.1 GENERAL

Terracore Limited was commissioned by J&P Avax S.A. to undertake a geotechnical investigation at a number of locations in Delimara, as part of the new proposed regasification plant.

Works included drilling of 10 offshore boreholes through valley fill, sand and Middle Globigerina Limestone with continuous sample recovery. This report contains the factual data collected during the investigation and the results of laboratory testing.



Figure 1: Aerial photograph indicating site location.

## 1.2 SCOPE AND METHODOLOGY OF WORKS

The aim of the investigation is to identify the existing material type and geotechnical properties through insitu testing, namely SPT's, Shelby tubes for undisturbed samples, disturbed sampling and laboratory testing.

The intrusive investigation consisted of rotary drilling at ten (10) locations, drilled with continuous sampling, shelly/piston samples and SPT's. Each sample was duly labelled with permanent ink, and the lid of each core box securely fastened.

The sampling and extraction operation was supervised by Terracore's consulting Geologist/representative together with a representative Geologist of Castor Ltd.

## 1.3 STANDARDS AND GUIDANCE

The site investigation was conducted in full accordance with BS 5930: 1999; Code of practice for geological site investigations and BS EN 1997 - 2: 2007 Geotechnical Design – Part 1 and Part 2. Uniaxial compressive strength tests were done according to BS 5930 and ISRM suggested methods.

In situ testing complies with BS1377:1990 "Soils for civil engineering purposes" – Part 9: In-situ tests, Eurocode 7 (DD ENV 1997-3) and EN ISO 22476:2012.

## 2 THE SITE

### 2.1 LOCATION



Figure 2: Map showing Delimara in 1984 (OS Sheet 1984)





Figure 3: Superimposed Google aerial photo on 1984 OS Map

## 2.2 GEOLOGY

### 2.2.1 GEOLOGY OF MALTA

The geology of Malta can be divided into 5 major formations (**Figure 4**). These are listed below from oldest to youngest:

1. Lower Coralline Limestone (oldest)
2. Globigerina Limestone
3. Blue Clay
4. Green Sand
5. Upper Coralline Limestone (youngest)

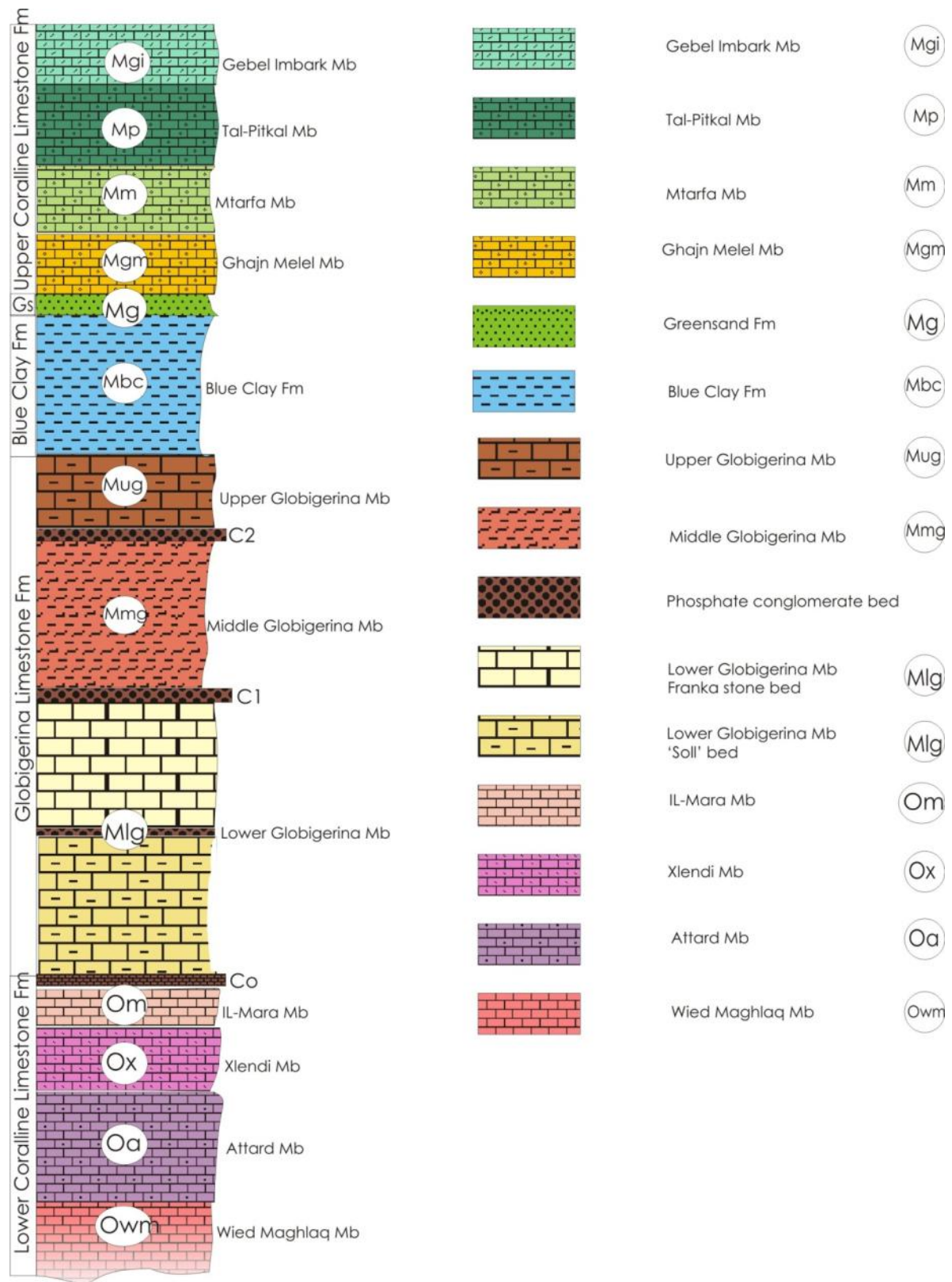


Figure 4: Lithostratigraphy of the Maltese Islands

## 2.2.2 GEOLOGY OF THE SITE

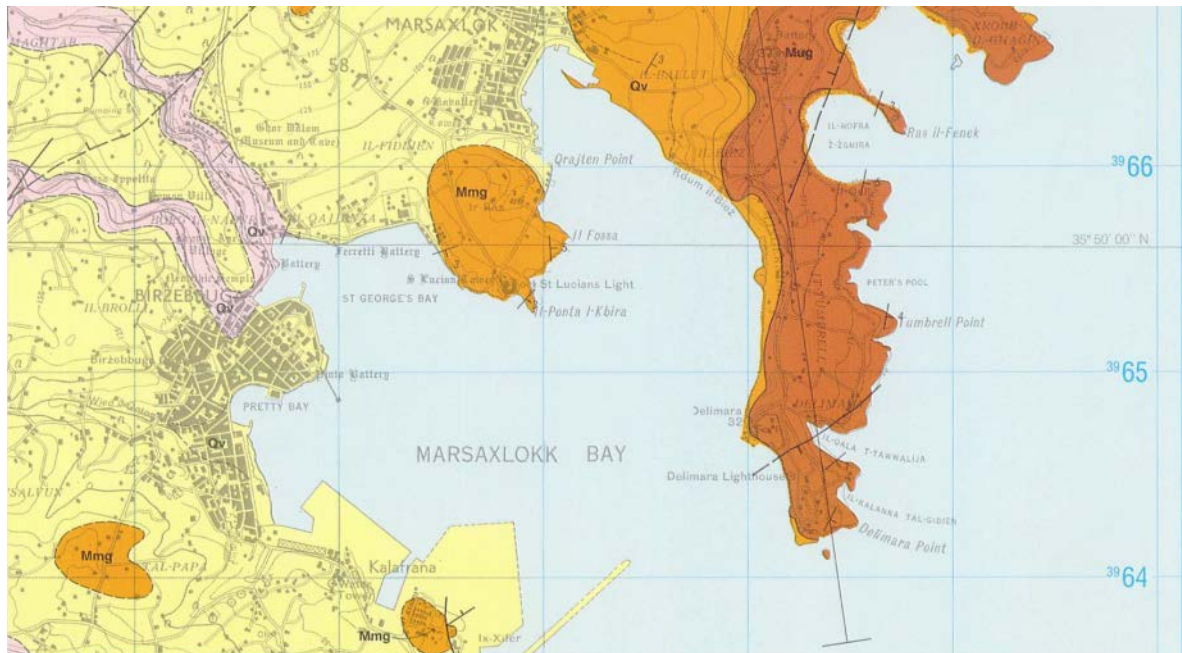


Figure 5: General geological view of DELIMARA and Marsaxlokk

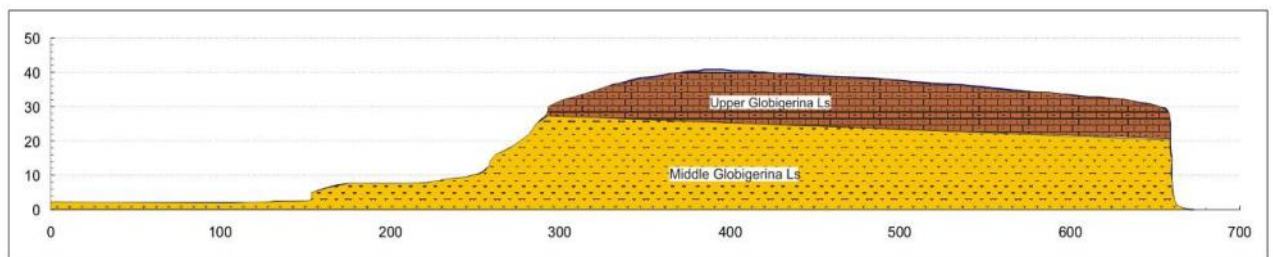


Figure 6: Geological cross-section across the site. Horizontal and vertical scales are in m . For line of section see Figure 6 (Vertical exaggeration 2X)

As show in figures 5-6, the rock exposed at the site is Upper Globigerina Limestone underlain by Middle Globigerina Limestone.



## 3 FIELD WORK

### 3.1 DRILLING

Field work was undertaken in September and October 2014 and comprised the drilling of 10 holes denoted as G01-G10 (**Figure 7**) drilled with continuous sampling by means of a piston sampler, shelby sampler, core sampler, SPT and continuous rock core sample recovery in the underlying rock with a T2 86mm core barrel. 6" casing was used for hole stabilisation from barge to seabed and 101mm casing was used from barge to top of bedrock. Borehole depths ranged from 28.00m to 57.40m below sea level. Core drilling was done using a T2 86 double tube core barrel in conjunction with water circulation using a G40 rotary drill, belonging to Terracore Limited mounted on a barge belonging to Salv Bezzina and Sons Ltd.

Complete drilling records are found in **Appendix 1**. A drilling, rock core sampling summary is shown in **Table 1** below.

**Table 1: Borehole drilling summary**

	<b><u>G01</u></b>	<b><u>G02</u></b>	<b><u>G03</u></b>	<b><u>G04</u></b>	<b><u>G05</u></b>
<b><u>Date drilled</u></b>	30/09/2014	1/10/2014	4/10/2014	29/09/2014	03/10/2014
<b><u>Northings /</u></b> <b><u>UTM 33N</u></b>	9813.57/ 459754.75	9804.82/ 459747.85	9839.11/ 459781.94	9823.95/ 459767.48	9804.85/ 459747.76
<b><u>Eastings /</u></b> <b><u>UTM 33N</u></b>	5012.70/ 3964817.62	4973.31/ 3964778.10	4903.98/ 3964709.44	4813.61/ 3964618.81	5058.80/ 3964863.94
<b><u>Seabed</u></b>	-16.00	-17.1	-8.7	-11.40	-17.1
<b><u>Bedrock, m</u></b>	26.20	24.00	12.35	8.2	25.1
<b><u>Core</u></b> <b><u>sampling</u></b>	26.20-32.2	24.00-38.50	13.3-26.35	8.4-24.9	28.6-36.7
<b><u>TD from</u></b> <b><u>barge</u></b>	50.00	57.40	36.85	38.10	55.50

	<u>G06</u>	<u>G07</u>	<u>G08</u>	<u>G09</u>	<u>G10</u>
<u>Date drilled</u>	27/09/2014	26/09/2014	16/09/2014	15/09/2014	12/09/2014
<u>Northings /</u> <u>UTM 33N</u>	9839.20/ 459781.91	9839.02/ 459781.81	9874.54/ 459817.17	9923.52/ 459866.66	9952.97/ 459895.44
<u>Eastings /</u> <u>UTM 33N</u>	5109.65/ 3964973.99	5194.55/ 3964998.89	5085.25/ 3964889.71	5154.89/ 3964959.17	5196.08/ 3965000.55
<u>Seabed</u>	-15.0	-11.70	-6.00	-5.25	-3.00
<u>Bedrock, m</u>	20.00	21.60	11.90m	9.10	9.70
<u>Core</u> <u>sampling</u>	20.60-31.00	21.60-29.20	11.90-25.00	9.10-25.00	9.70-25.00
<u>TD from</u> <u>barge</u>	47.00	42.60	33.70	33.00	28.00

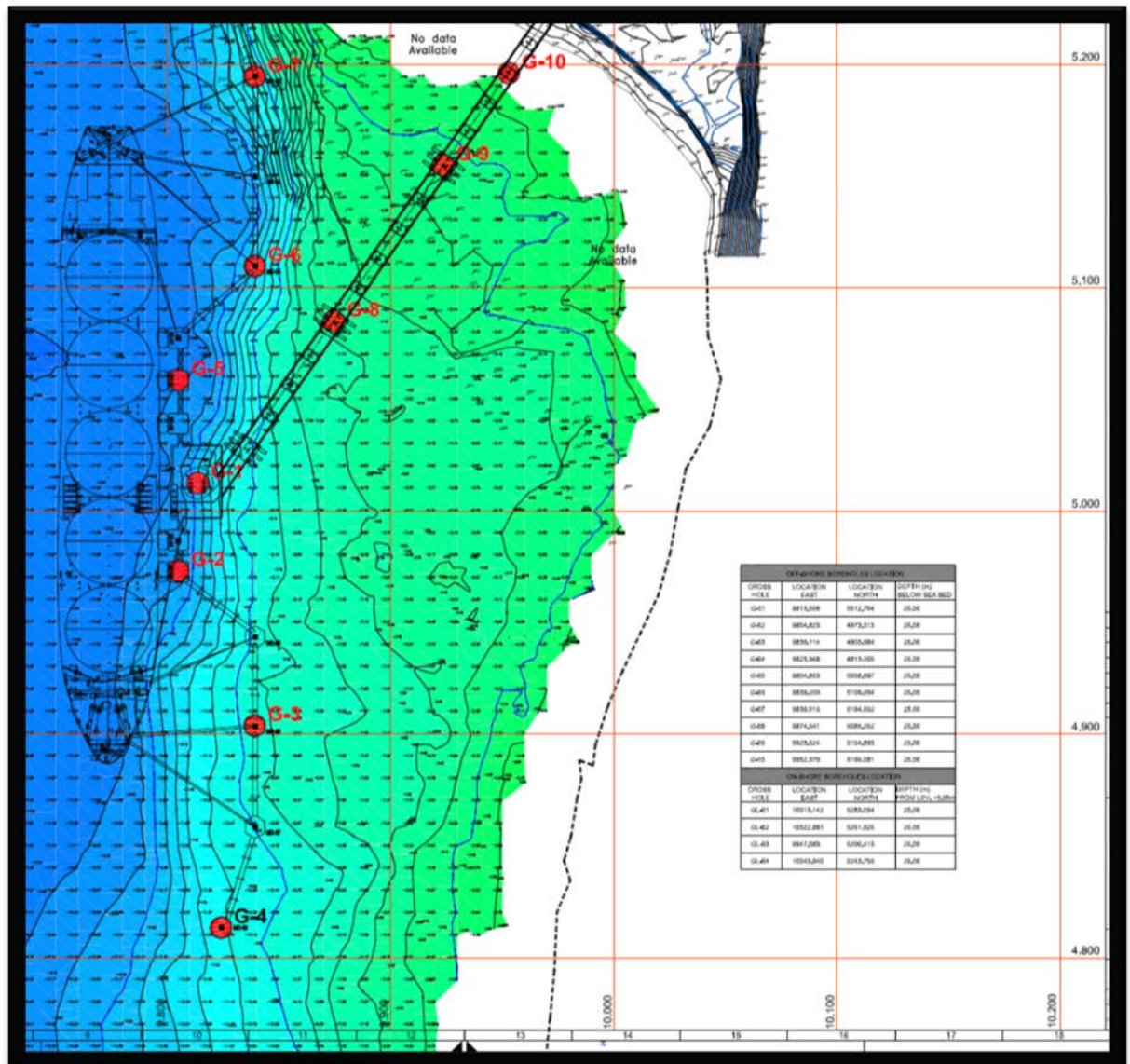


Figure 7: Drawing showing borehole locations

## 4 RESULTS AND INTERPRETATION

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### 4.1 CLASSIFICATION

#### 4.1.1 OVERBURDEN

The top 2-3m consists of Clayey Gravelly SAND (GC) and Sandy CLAY (CL), brown to grey in colour with fossils and organics. It gradually changes to Sandy Clay and Lean Clay (CL), with some gravel at intervals. Medium to Very Stiff

#### 4.1.2 LITHOLOGY

Rock consists of Middle Globigerina Limestone Member (Mmg). First 1-3 meters show signs of weathering (W1-W2), cream in colour MARL. Then changes to grey in colour, weathered (W0-W2), some discontinuities (D1-D4) mainly closed without fill, MARL to MARLY LIMESTONE.

Detailed descriptions are in the attached borehole logs

### 4.2 LABORATORY RESULTS AND INTERPRETATION

Testing was carried out at the materials testing laboratory of Terracore Ltd with the supervision of a representative from Castor Ltd. CU, CD and Oedometer tests were carried out by GEOLabs and ESG which are accredited laboratories in the UK.

Full test details and results are attached in Appendix 3



BH No		Sample	Sample Type	Depth m	Depth to		Water Content	Dry Unit Weight	Liquid Limit	Plastic Limit	Plasticity Index	Specific Gravity	Mass Loss on Ign %	Gravel %	Sand %	Finer %	Soil Type	SPT					
G1	G1	S3	US	2.5	3.4	0.9	25.26	1.56	42.6	11.6	31.0			56.17	20.5	23.33	GC		100	Clayey gravel with sand			
	G1	S3a	SPT	2	2.45	0.45												2,3,3		100	Clayey gravel with sand		
	G1	S4	US	3.45	4.45	1	30.4		41.4	12.1	29.3	2.59		42.6	26.3	31.1	GC		100	Fat clay			
	G1	S6	C	6.6	6.8	0.2	48	1.03	53.5	11.8	41.8			8.78	11.6	79.62	CH		100				
	G1	S6a	SPT	6.8	7.25	0.45												13,8,11	100	Lean clay with sand			
	G1	S7	C	7.8	8	0.2	22.52		34.6	7.2	27.5			16.18	27.7	56.12	CL		100	Lean clay with sand			
	G1	S8	C	12.2	12.4	0.2	27.04		34.9	8.4	26.6			11.24	18.2	70.56	CL		100	Lean clay with sand			
	G1	S9	SPT	14.2	14.65	0.45												21,17,16	100				
	G1	S11	C	16.8	17	0.2	18.28		28.5	10.9	17.6	2.55		25.83	28.5	45.67	SC		100	Sandy lean clay with gravel			
	G1	S12	SPT	18.2	18.65	0.45												7,8,11					
G2	G1	S14	SPT	22.5	22.95	0.45												6,7,9					
	G1	S15	C	23.5	23.7	0.2	22.32		30.1	8.5	21.6			10.7	18.2	71.1	CL		100	Lean clay with gravel			
	G1	S15	SPT	23.7	24.15	0.45												12,14,18					
	G2	S2	UP	1	1.5	0.5	12.03		37.1	non plastic				9.57	88.9	1.53	SM		100	Sandy clay			
	G2	S4	US	3.5	4.5	1	77.51		44.1	non plastic				4.43	50.4	45.17	SM		100	Lean clay			
	G2	S4a	SPT	4.5	4.95	0.45												2,6,11					
	G2	S6	US	7	7.95	0.95			46.4	non plastic		2.43		1.46	38.7	59.84	ML		100	Lean clay			
	G2	S6a	SPT	7.95	8.4	0.45												4,5,3					
	G2	S7	US	10.4	11.4	1	21.51		27.9	6.8	21.1	2.68		22.55	59.5	17.95	SC		100	Gravelly lean clay			
	G2	S8a	SPT	11.4	11.95	0.55												9,12,12					
G3	G2	S9	US	12.7	13.7	1	23.19	1.58	36.0	8.2	27.8	2.44		37.35	17	45.65	GC		100	Gravelly lean clay			
	G2	S10	SPT	15.1	15.55	0.45												15,20,19					
	G2	S12	US	18.1	19.1	1	23.85		25.5	7.8	17.7	2.52		34.42	30	35.58	GC		100	Sandy lean clay with gravel			
	G2	S14a	SPT	22.6	23.05	0.45												17,33,31					
	G3	S2	UP	0.5	1	0.5	32.12		38.5	non plastic				19.08	78.1	2.82	SM		100	Sandy clay			
	G3	S3	US	3	4	1	54.29		41.2	non plastic				3.5	75.1	21.4	SM		100	Sandy Lean clay			
	G3	S3a	SPT	4	4.5	0.5												1,2,3					
	G3	S4	US	6.4	7.4	1	61.12		37.9	non plastic		2.64		4.38	70.3	25.32	SM		100	Lean clay with sand			
	G3	S4a	SPT	7.4	7.85	0.45												3,4,3					
	G3	S5	US	10	10.9	0.9	44.58		34.2	non plastic		2.63		4.5	67.2	28.3	SM		100	Lean clay with sand			
G4	G3	S5a	SPT	10.9	11.35	0.45												9,14,15					
	G4	S1	UP	0.5	1	0.5	22.06		33.2	non plastic				39.24	55	5.76	SM		100	Clayey sand with gravel			
	G4	S2	UP	1	1.5	0.5	31.1	1.42	38.5	non plastic			2.79					0					
	G4	S2a	SPT	1.5	1.95	0.45												2,4,4					
	G4	S3	US	2	3	1	44.92		37.6	non plastic				3.87	80.7	15.43	SM		100	Sandy Lean clay			
	G4	S4	B	4.8	5	0.2																	
	G4	S4a	SPT	5	5.45	0.45												3,7,2					
	G4	S5	US	5.4	6.4	1	44.77	1.16	37.9	non plastic		2.51		3.26	64.4	32.34	SM		100	Lean clay			
	G4	S6	B	6.7	7.3	0.6	37.89	1.26	33.7	non plastic		2.48		3.48	67.9	28.62	SM		100	Lean clay			
	G5	G5	S2	UP	0.5	1	0.5	31.71		39.4	non plastic				29.22	68.2	2.58	SM		100	Clayey sand with gravel		
G5		S3A	SPT	4	4.45	0.45												3,3,4					
G5		S4	US	6.45	7.45	1	27.75		46.3	11.0	32.4	2.45		4.72	16.1	79.18	CL		100	Lean clay			
G5		S4A	SPT	7.5	7.95	0.45												4,3,4					
G5		S5	C	10.7	11	0.3	16.2	1.68	29.8	9.1	32.4	2.55		28.49	28.3	43.21	GC		100	Sandy Lean clay			
G5		S5A	SPT	12.9	13.35	0.45												11,12,14					
G5		S10A	SPT	14.4	14.85	0.45												11,12,14					
G5		S11	C	16.5	16.8	0.3	17	1.68	29.2	7.3	21.1			19.36	58	22.64	SC		100	Sandy lean clay			
G5		S11A	SPT	16.8	17.3	0.5												45,50/30					
G5		S13	C	21.2	21.4	0.2	13	1.72	28.2	7.6	20.6			38.16	17.8	44.04	GC		100	Gravelly lean clay			
G6	G5	S13A	SPT	21.4	21.85	0.45												10,7,9					
	G6	S1	UP	1.2	1.9	0.7	48	1.07	39.9	non plastic				17.02	2.74	26.7	70.56	ML		100	Lean Clay		
	G6	S1a	SPT	1.9	2.35	0.45												0,0,0					
	G6	S2	US	2.4	3	0.6	23		51.4	non plastic				14.47	25.3	60.23	MH		100	Fat clay with gravel			
	G6	S2a	SPT	3	3.45	0.45												0,0,0					
	G6	S3	US	4.2	4.9	0.7	27	1.55	45.8	12.0	33.9	2.52		16.19	26.7	57.11	CL		100	Lean clay with sand			
	G6	S3a	SPT	4.9	5.35	0.45												0,0,0					
	G6	S5	B	7.6	7.8	0.2	28		38.8	11.1	27.7	2.39		14.3	21.1	64.6	CL		100				
	G6	S5a	SPT	7.8	8.25	0.45												21,23,24					
	G6	S6	B	8.6	8.8	0.2	18		35.8					38.5	26.4	35.1	CL		100	Gravelly lean clay			
G7	G6	S8	B	12	12.2	0.2	28	1.38	35.3	8.1	27.2	2.41		27.03	16.4	56.57	CL		100	Gravelly lean clay			
	G6	S8a	SPT	12.2	12.65	0.45												11,16,18					
	G6	S9	B	14	14.2	0.2	29	1.36	39.3	9.8	29.5			51	13.2	35.8	GC		100	Gravelly clay			
	G6	S9a	SPT	14.2	14.65	0.45												11,16,19					
	G6	S11a	SPT	16.2	16.65	0.45												17,19,22					
	G6	S12	B	17	17.2	0.2			39.1	11.8	27.3			48.54	15.6	35.86	GC		100	Gravelly clay			
	G6	S13	B	18.8	19	0.2			39.6	11.7	27.9							0					
	G6	S13a	SPT	19	19.45	0.45												19,24,28					
	G6	S14	B	20.2	20.4	0.2	10	1.74	40.9	8.3	32.6	2.58						0					
	G8	G7	S2	B	1.4	1.6	0.2	64		41.0	non plastic			10.13	6.73	37.3	55.97	ML		100	Lean clay with sand		
G7		S3a	SPT	3	3.45	0.45												1,2,1					
G7		S5	B	5.2	5.4	0.2	69		42.6					6.99	38.4	54.61	CL		100	Lean clay with sand			
G7		S6a	SPT	6	6.45	0.45												1,1,1					
G7		S7	B	6.8	7	0.2	39		38.8					0.74	67.5	31.76	SM		100	Lean Clay			
G7		S7a	SPT	7	7.45	0.45												1,1,2					
G7		S8a	SPT	8	8.45	0.45												1,0,1					
G7		S9	UP	8.85	9.35	0.5	30	1.51	37.4	8.9	28.5			13.98	20.5	65.52	CL		100	Lean Clay			
G7		S10	US	9.35	10.35	1	33					2.48		3.1	15.8	81.1			100				
G7		S10a	SPT	10.35	10.8	0.45												6,6,5					
G9	G7	S11	US	10.8	11.8	1	39	1.26	36.3	8.9	27.4			11.13	47	41.87	SC		100	Gravelly sand with clay			
	G7	S12	US	11.8	12.8	1	39		34.0	9.6	24.4	2.39		6.56	27.3	66.14	CL		100	Gravelly sand with clay			
	G7	S12a	SPT	12.8	13.25	0.45												10,5,6					
	G7	S14	B	15.8	16	0.2	26		26.3	non plastic				31.85	48.2	19.95	SM		100	Gravelly sand with clay			
	G7	S15a	SPT	16.4	16.6	0.2												7,9,12					
	G7	S16	B	19.6	19.8	0.2	26		37.0	9.7	27.3			34.76	24.2	41.04	GC		100	Gravelly sand with clay			
	G7	S16a	SPT	19.8	20.25	0.45												9,11,13					
	G7	S17	B	20.4	20.8	0.4	20	1.62	26.6			2.50						0					
	G8	G8	S2	US	2	3	1	65		42.2	non plastic				1.9	68.06	30.04	SM		100	Lean Clay with sand		
		G8	S2a	SPT	3	3.45	0.45	</															

BH	Sample	Depth	WC	WD	DUW	Cell Pressure	σ1-σ3	Soil Type	C <sub>u</sub>	SPT		BH No		Depth	Depth to	SPT
G1	2	1.5	22	2.03	1.66	50	539	GC	269			G1	G1	2.5	3.4	
	8	12.2	31	2.05	1.57	120	52	CL	26				G1	2	2.45	2,3,3
	10	16.6	26	1.87	1.49	160	116	SC	58				G1	3.45	4.45	
G2	15	23.5	23	2.12	1.72	230	128	CL	64				G1	6.6	6.8	
	2	1	27	2.20	1.73	50	41	SM	20				G1	6.8	7.25	13,8,11
	4	3.8	80	1.52	0.84	50	40	SM	20				G1	7.8	8	
G3	7	10.4	30	1.62	1.25	110	78	SC	39				G1	12.2	12.4	
	2	0.5	34	1.96	1.46	50	45	SM	23				G1	14.2	14.65	21,17,16
	5	9.9	47	1.70	1.16	110	66	SM	33				G1	16.8	17	
G4	2	1	33	1.68	1.27	50	45	SM	22				G1	18.2	18.65	7,8,11
	6	6.5	49	1.70	1.14	50	89	SM	45				G1	22.5	22.95	6,7,9
	7	8	21	2.21	1.83	80	157	-	78				G1	23.5	23.7	
G5	2	0.5	27	1.62	1.28	50	50	SM	25				G1	23.7	24.15	12,14,18
	5	10.7	24	1.90	1.53	110	162	GC	81			G2	G2	1	1.5	
	13	21.2	26	2.05	1.63	210	85	GC	43				G2	3.5	4.5	
G6	1	1.2	34	1.46	1.09	50	16	ML	8				G2	4.5	4.95	2,6,11
	2	2.4	70	1.61	0.95	50	38	MH	19				G2	7	7.95	
	7	9.6	25	2.11	1.68	100	126	CL	63				G2	7.95	8.4	4,5,3
G7	8	12	28	2.03	1.58	120	157	CL	79				G2	10.4	11.4	
	9	14	23	2.01	1.64	140	175	GC	88				G2	11.4	11.95	9,12,12
	13	18.8	34	1.96	1.46	190	71	-	35				G2	12.7	13.7	
G8	7	6.8	37	1.82	1.33	70	85	SM	43				G2	15.1	15.55	15,20,19
	9	9.4	32	1.91	1.44	90	207	CL	104				G2	18.1	19.1	24,50/10
	12	11.8	39	1.76	1.27	120	61	SC	30				G2	22.6	23.05	17,33,31
G9	2	2	55	1.61	1.04	50	10	SM	5			G3	G3	0.5	1	
	4	5.45	59	1.67	1.05	60	16	SM	8				G3	3	4	
	3	5.3	27	1.61	1.26	50	80	SM	40				G3	4	4.5	1,2,3
G10	2	2.3	21	2.00	1.65	40	61	SM	30				G3	6.4	7.4	
	6	8.5	43	1.61	1.13	40	35	SM	17				G3	7.4	7.85	3,4,3
													G3	10	10.9	
												G4	G3	10.9	11.35	9,14,15
													G4	0.5	1	
													G4	1	1.5	
													G4	1.5	1.95	2,4,4
													G4	2	3	
													G4	4.8	5	
												G5	G4	5	5.45	3,7,2
													G4	5.4	6.4	
													G4	6.7	7.3	
													G5	0.5	1	
													G5	4	4.45	3,3,4
													G5	6.45	7.45	
													G5	7.5	7.95	4,3,4
													G5	10.7	11	
													G5	12.9	13.35	11,12,14
													G5	14.4	14.85	11,12,14
												G6	G5	16.5	16.8	
													G5	16.8	17.3	45,50/30
													G5	21.2	21.4	
													G5	21.4	21.85	10,7,9
													G6	1.2	1.9	
													G6	1.9	2.35	0,0,0
													G6	2.4	3	
													G6	3	3.45	0,0,0
													G6	4.2	4.9	
													G6	4.9	5.35	0,0,0
													G6	7.6	7.8	
													G6	7.8	8.25	21,23,24
													G6	8.6	8.8	
													G6	12	12.2	
													G6	12.2	12.65	11,16,18
													G6	14	14.2	
													G6	14.2	14.65	11,16,19
													G6	16.2	16.65	17,19,22
												G7	G6	17	17.2	
													G6	18.8	19	
													G6	19	19.45	19,24,28
													G6	20.2	20.4	
													G7	1.4	1.6	
													G7	3	3.45	1,2,1
													G7	5.2	5.4	
													G7	6	6.45	1,1,1
													G7	6.8	7	
													G7	7	7.45	1,1,2
													G7	8	8.45	1,0,1
													G7	8.85	9.35	
													G7	9.35	10.35	
													G7	10.35	10.8	6,6,5
													G7	10.8	11.8	
												G8	G7	11.8	12.8	
													G7	12.8	13.25	10,5,6
													G7	15.8	16	
													G7	16.4	16.6	7,9,12
													G7	19.6	19.8	
													G7	19.8	20.25	9,11,13
												G9	G7	20.4	20.8	
													G8	2	3	
													G8	3	3.45	3,2,2
													G8	5.45	6.45	
													G8	6.5	6.95	5,3,2
													G8	8.9	9.9	
												G10	G8	10	10.45	1,1,1
													G8	10.7	10.9	
													G8	10.9	11.5	
													G9	0	1	
													G9	1.6	2.05	1,2,2
													G9	3	4	
												G10	G9	4	4.45	7,5,2
													G9	5.3	5.5	
													G9	7.75	8.65	
													G9	8.65	9.1	6,8,35
													G10	0	1	
													G10	2.8	3.25	21,23,25
													G11	2.1	2.7	
													G12	3.3	3.8	
													G13	3.8	4.25	3,2,5
													G14	6.5	6.7	
													G15	6.8	7.25	1,1,0
													G16	8.6	9	
													G17			

Table summarising soil Triaxial UU and SPT results.

			Initial			After Test									
BH	Sample	Depth	WC	WD	DUW	WC	WD	DUW	Cell Pressure	$\sigma_1-\sigma_3$	$C_{vi}$	$M_{vi}$	$k_{vi}$	$\phi$	C'
G1	3	2.45	37	1.87	1.36	31	1.95	1.50	40	88.3	0.77	1.76	4.20E-10	-	-
			40	1.85	1.32	31	1.91	1.46	80	224.8	1.61	1.32	6.60E-10		
			33	1.91	1.43	27	2.00	1.58	160	255.4	1.5	0.54	2.50E-10		
G3	3	3	50	1.71	1.14	47	1.73	1.18	40	196.5	226.57	1.14	8.00E-08	37.8	17.3
			52	1.70	1.12	35	1.88	1.40	80	323.9	124.73	0.99	3.80E-08		
			54	1.63	1.06	31	1.86	1.42	160	575.8	2.27	0.58	4.10E-10		
	4	6.45	42	1.66	1.17	43	1.77	1.24	40	183.4	8132.34	0.16	4.10E-07	36.1	0
			51	1.63	1.08	44	1.75	1.21	160	193.5	1436.51	0.4	1.80E-07		
G4	3	1.95	55	1.63		48	1.63		50	164				52	0
			73	1.68		52	1.70		100	182					
			60	1.63		45	1.68		200	320					
G5	3	3	43	1.80		35	1.85		40	177				41.5	5
			44	1.79		35	1.84		80	211					
			46	1.81		35	1.86		160	312					
	4	6.5	40	2.10		30	2.17		40	94				40	9
			43	2.14		30	2.24		80	200					
			41	1.94		31	2.02		160	247					
G6	3	4.2	80	1.62		61	1.69		40	75				47	0
			78	1.60		57	1.73		80	131					
			66	1.70		43	1.85		160	220					
G7	10	9.35	34	1.92		29	1.95		50	107				37	8
			38	1.81		35	1.85		100	195					
			40	1.79		35	1.85		200	235					
G8	4	10.9	39	1.81	1.30	34	1.87	1.39	50	181.3	11.88	1.1	4.10E-10	36.6	10
			38	1.78	1.29	32	1.89	1.44	220	416.3	3.72	0.38	4.40E-10		
G10	1	3.3	30	1.95	1.50	26	2.00	1.58	40	128.6	0.44	1.38	1.90E-10	-	-
			31	1.86	1.52	31	1.91	1.46	160	441.8	18.91	0.23	1.30E-09		

Table summarising soil Triaxial CUPP.

			Initial			After Test									
BH	Sample	Depth	WC	WD	DUW	WC	WD	DUW	Cell Pressure	$\sigma_1-\sigma_3$	$C_{vi}$	$M_{vi}$	$k_{vi}$	$\phi$	C'
G2	9	12.7	16	2.22	1.92	15	2.24	1.94	140	626.2	1.09	0.4	1.30E-10		
			16	2.26	1.95	14	2.31	2.02	280	482.5	0.05	0.4	3.70E-12		
G3	3	3	50	1.71	1.14	47	1.73	1.18	40	196.5	226.57	1.14	8.00E-08	37.8	17.3
			52	1.70	1.12	43	2.27	1.59	80	323.9	124.73	0.99	3.80E-08		
			54	1.63	1.06	38	1.80	1.31	160	575.8	2.27	0.58	4.10E-10		
G8	3	8.9	61	1.69	1.05	44	1.79	1.25	50	186.1	0.61	2.19	4.10E-10	40.1	1.8
			72	1.62	0.94	46	1.80	1.23	100	372.6	0.6	2.32	4.30E-10		
			76	1.60	0.91	40	1.80	1.28	200	729.6	0.46	1.32	1.90E-10		
G9	2	7.75	51	1.51	1.00	50	1.70	1.14	40	130.6	3.19	0.49	4.80E-10	0	41
			48	1.54	1.04	45	1.74	1.20	80	300.1	5.38	0.5	8.30E-10		
			52	1.63	1.07	36	1.82	1.34	160	619.9	5.57	1.65	1.10E-09		

Table summarising soil Triaxial CD.



			Initial			Final								
Bh Number	Sample	Depth	DUW	WC	Saturation	DUW	WC	Saturation	LL	PL	SG	Pressure	Void Ratio	Soil Type
		m	Mg/m³	%	%	Mg/m³	%	%				kPa		
G1	4	3.45	1.55	24	90	1.6	24	96	41.4	12.1	2.65	0	0.7075	GC
												12	0.7025	
												25	0.7002	
												50	0.6928	
												100	0.6845	
												200	0.67	
												400	0.6572	
												800	0.628	
												200	0.6339	
												50	0.6427	
												12	0.6498	
												2	0.6519	
G2	7	10.4	1.37	30	86	1.44	29	91	27.9	6.8	2.65	0	0.9373	CL
												12	0.9331	
												25	0.9309	
												50	0.9244	
												100	0.9148	
												200	0.8955	
												400	0.8665	
												800	0.8404	
												200	0.8418	
												50	0.8426	
												12	0.8446	
												2	0.8453	
G3	4	6.4	1.04	55	95	1.17	44	92	37.9	-	2.65	0	1.5417	CL
												12	1.5362	
												25	1.5252	
												50	1.5028	
												100	1.4654	
												200	1.4153	
												400	1.3407	
												800	1.2349	
												200	1.2363	
												50	1.2399	
												12	1.25	
												2	1.2611	
G3	5	10	1.18	47	101	1.37	35	101	34.2	-	2.65	0	1.2459	CL
												12	1.1665	
												25	1.1443	
												50	1.1161	
												100	1.083	
												200	1.0368	
												400	0.9799	
												800	0.9074	
												200	0.909	
												50	0.9136	
												12	0.9217	
												2	0.9283	
G4	6	6.7	1.63	22	92	1.65	22	97	33.7	-	2.65	0		CL
												12		
												25	0.6219	
												50	0.619	
												100	0.614	
												200	0.6059	
												400	0.5926	
												800	0.5747	
												200	0.5796	
												50	0.5887	
												12	0.5979	
												2	0.6025	

Table summarising soil oedometer tests (continued on next page).

			Initial			Final								
Bh Number	Sample	Depth	DUW	WC	Saturation	DUW	WC	Saturation	LL	PL	SG	Pressure	Void Ratio	Soil Type
		m	Mg/m <sup>3</sup>	%	%	Mg/m <sup>3</sup>	%	%				kPa		
G6	8	12	1.5	27	95	1.6	25	100	35.3	8.1	2.65	0	0.7656	CL
												12	0.757	
												25	0.7523	
												50	0.7451	
												100	0.7306	
												200	0.7087	
												400	0.67887	
												800	0.6333	
												200	0.637	
												50	0.6438	
												12	0.6513	
												2	0.6552	
G7	11	10.8	1	53	85	1.19	43	93	36.3	8.9	2.65	0	1.6566	CL
												12	1.6392	
												25	1.6308	
												50	1.6106	
												100	1.5761	
												200	1.5075	
												400	1.3821	
												800	1.2092	
												200	1.2154	
												50	1.2155	
												12	1.2218	
												2	1.2262	
G7	17	20.4	1.64	22	96	1.77	18	99	26.6	-	2.65	0	0.6172	
												12	0.612	
												25	0.6083	
												50	0.6134	
												100	0.5884	
												200	0.5631	
												400	0.5282	
												800	0.4818	
												200	0.4836	
												50	0.4882	
												12	0.4927	
												2	0.4956	
G8	3	8.9	0.91	65	91	1.23	42	96	-	-	2.65	0	0.8989	-
												12	1.8382	
												25	1.787	
												50	1.6925	
												100	1.5777	
												200	1.3579	
												400	1.2144	
												800	1.0787	
												200	1.0857	
												50	1.1038	
												12	1.132	
												2	1.1616	
G9	2	7.75	1.08	55	100	1.3	37	96	-	-	2.65	0	1.4504	-
												12	1.3709	
												25	1.3392	
												50	1.2957	
												100	1.2417	
												200	1.1714	
												400	1.0839	
												800	0.9902	
												200	0.9938	
												50	1.0026	
												12	1.0209	
												2	1.0365	
G10	3	3.3	1.3	36	90	1.38	33	94	39.3	-	2.65	0	1.0422	CL
												12	1.0381	
												25	1.0324	
												50	1.0214	
												100	1.0062	
												200	0.9836	
												400	0.9496	
												800	0.9036	
												200	0.9038	
												50	0.9059	
												12	0.9096	
												2	0.9146	

				Point Load					UCS								
BH No	Sample	Depth	Water Content	Test Type	Failure Load	Is	Correction Coeff	Is (50)	Depth	Diameter	Height	DUW	H/D Ratio	Mass	Max. Load	UCS	Em
	Run	m	%		kN	Mpa										Mpa	
G1		26.2	21.43	Perpendicular	0.18	0.2	1.12	0.2	27.6	58.4	129	-	2.21	734	13.1	4.64	1.69
				Parallel	0.16	0.1	1.15	0.2	30.2				2.21			11.23	2.89
		27.6	21.15	Perpendicular	0.51	0.5	1.04	0.5	33.2	58.8	130	-	2.21	778	41.3	16.24	7.61
				Parallel	0.29	0.2	1.01	0.2									
		31.5	16.32	Perpendicular	1.45	1	0.99	1									
				Parallel	0.74	0.5	0.99	0.5									
		33.2	16.55	Perpendicular	1.87	1.5	1.03	1.6									
				Parallel	0.61	0.4	1	0.4									
G2		30.9	13.67	Perpendicular	2.04	1.8	1.04	1.9	30.9	58.4	127	-	2.18	710	39.3	15.07	11.96
				Parallel	1.36	1.1	1.03	1.2	33.5	58.2	158	-	2.72	710	39.2	14.44	3.11
		33.5	14.52	Perpendicular	2.47	2.1	1.03	2.2	33.8	58.2	124	-	2.14	689	37	15.11	2.76
				Parallel	1.15	1	1.04	1									
		33.8	13.99	Perpendicular	1.74	1.4	1.03	1.5									
				Parallel	1.05	0.9	1.03	0.9									
		26.2	2.64	Perpendicular	11.59	9.8	1.09	10.6									
				Parallel	8.15	6.8	1.09	7.4									
G3		13.75	20.45	Perpendicular	0.14	0.1	1	0.1	13.75				2.22			4.19	1.79
				Parallel	0.13	0.1	1.03	0.1	16.35	58.2	128		2.19	672	14.8	5.62	1.23
		16.35	20.57	Perpendicular	0.27	0.2	1.05	0.3	17.4	53.2	128		2.41	561	10.5	4.74	2.14
				Parallel	0.36	0.3	1.02	0.3	20.5	58.3	110		1.89	599	26.9	9.45	5.15
		20.35	16.9	Perpendicular	1.08	0.8	1.05	0.9	25.8	58.3	123		2.12	670	38.3	14.27	4.67
				Parallel	0.47	0.3	1.02	0.3									
		23.75	17.96	Perpendicular	0.66	0.4	0.98	0.4									
				Parallel	0.21	0.2	1.01	0.2									
		25.7	15.89	Perpendicular	1.25	0.7	0.95	0.7									
				Parallel	0.63	0.3	0.94	0.3									
G4		8.4-9	17.79	Parallel	0.32	0.2	1.06	0.3	8.5	58.3	129		2.21	736	21.5	7.99	2.38
				Perpendicular	0.23	0.2	1.06	0.2	11.6	58.3	128		2.19	746	35.8	13.56	1.67
		11.4-11.9	14.96	Parallel	1.22	0.9	1.07	1	15.4	58.7	126		2.15	726	25.5	9.14	1.52
				Perpendicular	0.85	0.6	1.06	0.7	19.1	57.7	126		2.18	726	41.2	15.73	6.34
		15.4		Parallel	1.11	0.8	1.07	0.9	22.1	58	126		2.17	717	33.4	12.89	1.75
				Perpendicular	1.09	0.8	1.07	0.8									
		22		Parallel	1.64	1.6	1.13	1.8									
				Perpendicular	0.69	0.7	1.13	0.7									
G5		29	16.92	Perpendicular	1.48	1	0.99	1	29	58.4	128		2.19	736	26.2	9.59	4.07
				Parallel	0.75	0.6	1.01	0.6	30.6				2.21			11.43	5.8
		35.1	14.7	Perpendicular	1.36	0.7	0.95	0.6	35.1	58.4	128		2.19	711	42.8	15.94	2.58
				Parallel	0.86	0.5	0.99	0.5	36.2	58.3	128		2.19	746	44.2	16.54	2.16
		36.2	13.87	Perpendicular	2.45	2.1	1.04	2.2									
				Parallel	1.1	0.9	1.02	0.9									
G6		23-23.8		Perpendicular	1.59	1.3	1.04	1.3	21.5	58.2	129	1.807	2.21	737	26.4	9.52	2.21
				Parallel	0.86	0.7	1.04	0.7	23.3	58.1	131	1.844	2.25	743	33	12.46	1.21
		25-25.5		Perpendicular	1.5	1.1	1.06	1.2	25.3	58.1	130	1.908	2.24	761	33.6	12.59	0.97
				Parallel	1.05	0.8	1.05	0.8	29.5	58.2	130	1.851	2.24	750	41.6	15.59	1.43
		29-29.6		Perpendicular	1.67	1.3	1.08	1.4									
				Parallel	1.15	0.8	1.06	0.9									
G7		21.8-22.8	18.3	Perpendicular	0.64	0.5	1.06	1.5	22.1	58	128	1.752	2.21	716	12.5	4.77	0.51
				Parallel	0.4	0.3	1.06	0.3	25	58.2	130	2.052	2.24	779	34.1	12.79	1.99
		24.4-25.2	14.7	Perpendicular	2.13	1.7	1.08	1.8	28.6	58.1	128	1.973	2.21	752	48	15.81	2.23
				Parallel	1.04	0.7	1.04	0.7									
G8	3	16.3	21.03	Parallel	0.49	0.6	1.23	0.8	16.7	59.1	120.0	1.8	2.03	702	14.4	5.39	13.96
				Perpendicular	0.39	0.3	1.05	0.3	18.8	55.5	124.0	1.9	2.2	631.0	5.7	2.3	0.9
	3	17.3	18.59	Parallel	0.71	0.9	1.22	1.1	22.3	58.9	124	1.793	2.1	709	23	8.57	1.6
				Perpendicular	0.38	0.2	0.95	0.2	22.7	50	95	1.921	1.9	408	27.8	14.49	3
	4	19.3	17.17	Parallel	0.92	1.2	1.23	1.5									
				Perpendicular	0.61	0.4	1.05	0.4									
	5	24.1	17.03	Parallel	1.72	2.2	1.23	2.7									
				Perpendicular	2.21	2.8	1.23	3.5									
	6	24.9	16.57	Parallel	1.37	1.8	1.23	2.2									
				Perpendicular	0.47	0.3	1.04	0.3									
G9	5	22	18.31	Parallel	0.33	0.4	1.22	0.5									
	1	9.8	20.25	Parallel	0.43	1.1	1.36	1.5	16	56.4	101	1.956	1.79	535	26.2	10.43	4.09
	3	15.4	17.57	Parallel	0.23	0.3	1.22	0.4	18	58.8	129	1.998	2.19	753	35.6	12.94	2.23
	3	15.4		Perpendicular	0.78	0.5	1.05	0.6	24	58.8	125	1.942	2.12	719	34.7	12.56	1.59
	3	14.4	18.99	Parallel	0.46	0.6	1.2	0.7	9.2	57.7	115	1.724	2	640	10.1	3.9	
	3	14.4		Perpendicular	0.6	0.8	1.2	0.9	14.1	62.6	164	2.424	2.61	1056	9.7	3.2	
	4	18.3	16.28	Parallel	1.93	2.5	1.24	3	18.3	66.4	163	1.808	2.46	1209	35.1	10.1	
	4	18.3		Perpendicular	1.7	1.1	1.06	1.2	19.7	64.5	173	1.78	2.67	1203	32.5	9.9	
	5	21.5	16.13	Parallel	1.98	2.6	1.23	3.2	25	63.9	165	1.739	2.59	1117	30	9.4	
	5	21.5		Perpendicular	1.51	0.8	1.01	0.8									
	6	24.6	17.72	Parallel	1.5	2	1.23	2.4									
	6	24.6		Perpendicular	1.4	0.8	1.03	0.8									
G10	3	13.9	19.9	Parallel	0.14	0.2	1.23	0.2	14.5	58.7	128	2.011	2.19	756	30.4	11.24	1.95
	3	14.7	16.55	Parallel	1.11	1.4	1.23	1.8	19	59.2	128	2.147	2.16	801	46.2	16.68	5.8
	3	14.7		Perpendicular	0.98	0.5	1	0.5	21.5	58.7	127	1.973	2.17	735	35.6	13.04	1.98
	4	16.2	15.69	Parallel	1.3	1.7	1.23	2.1	13.9	61.4	134	1.778	2.17	842	23.2	7.8	
	4	16.2		Perpendicular	0.98	0.6	1.06	0.7	14.7	67.2	156	1.806	2.33	1189	23.9	6.7	
	5	21.5	15.41	Parallel	1.92	2.5	1.23	3	18.6	67.4	155	1.753	2.31	1172	23.2	6.5	
	5	21.5		Perpendicular	1.87	1.2	1.04	1.2	21.5	65.6	169	1.808	2.6	1229	23.5	8.7	
									24.6	65.5	162	1.72	2.46	1162	33.3	9.9	

Table summarising Point Load and Unconfined compressive strength tests.

# APPENDIX 1 – SAMPLE PHOTOS

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## Borehole G1



Figure 8: Photograph showing samples recovered from G1 - 0.00m to 6.45.



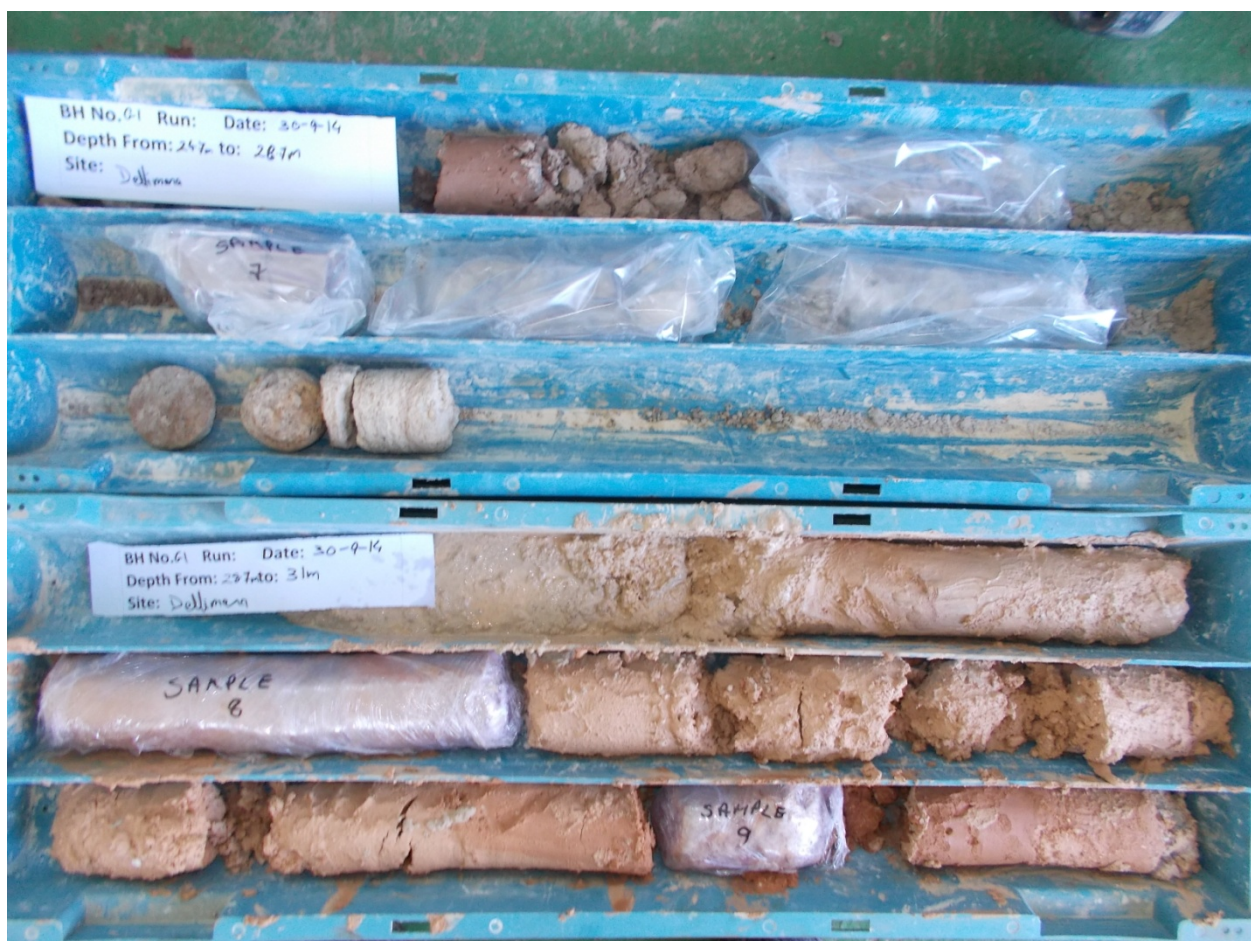


Figure 9: Photograph showing samples recovered from G1 - 6.90m to 14.20.



Figure 10: Photograph showing samples recovered from G1 -14.65m to 16.20.



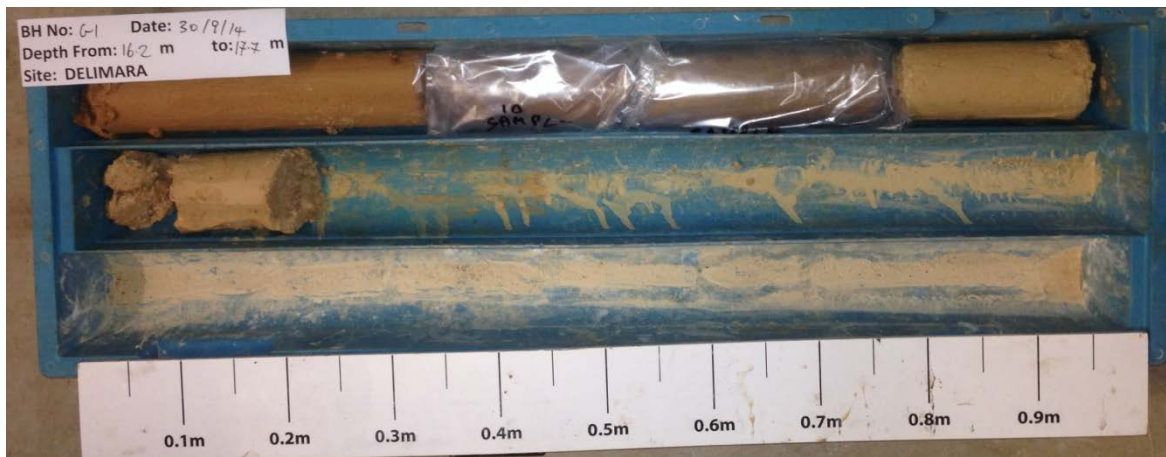


Figure 11: Photograph showing samples recovered from G1 - 16.20m to 17.70.

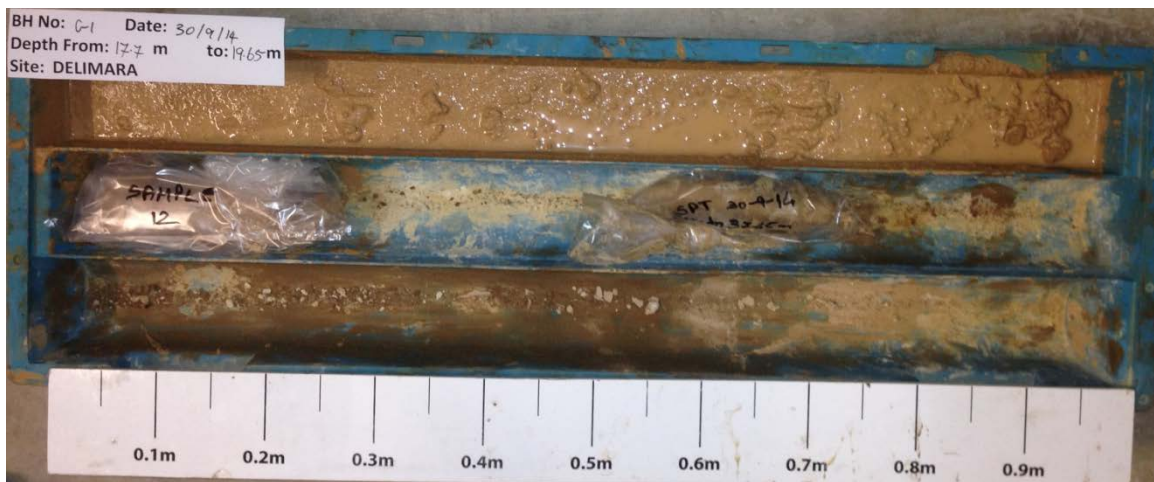


Figure 12: Photograph showing samples recovered from G1 - 17.70m to 19.65.



Figure 13: Photograph showing samples recovered from G1 - 19.65m to 20.20.



Figure 14: Photograph showing samples recovered from G1 - 20.20m to 22.20.



Figure 15: Photograph showing samples recovered from G1 - 22.20m to 23.70.



Figure 16: Photograph showing samples recovered from G1 - 23.70m to 26.20.





Figure 17: Photograph showing samples recovered from G1 - 26.20m to 27.20.



Figure 18: Photograph showing samples recovered from G1 - 27.20m to 29.20.





Figure 19: Photograph showing samples recovered from G1 - 27.20m to 35.20.

## Borehole G2



Figure 20: Photograph showing samples recovered from G2 - 0.50m to 4.95.



Figure 21: Photograph showing samples recovered from G2 - 4.95m to 6.95.





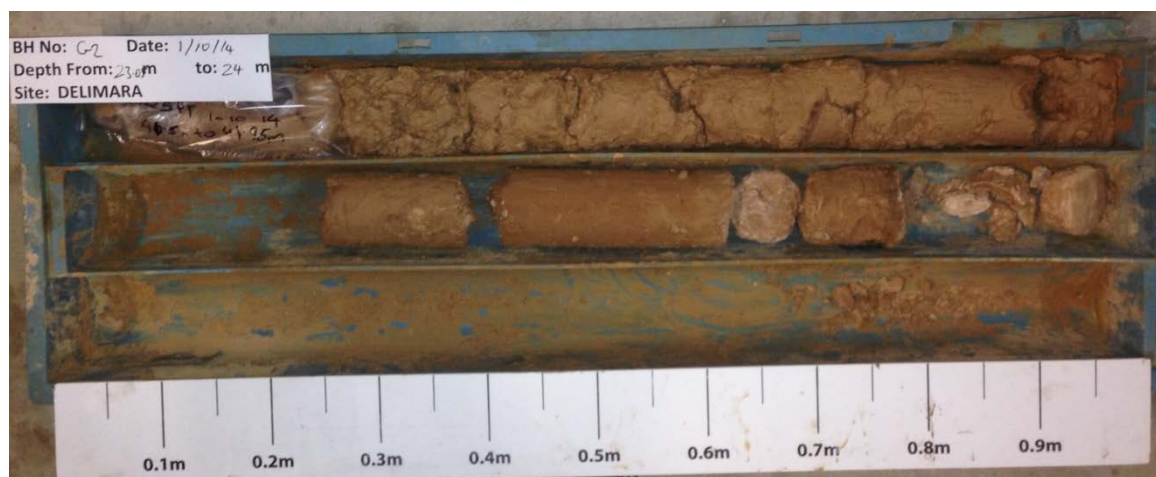
Figure 22: Photograph showing samples recovered from G2 - 6.95m to 11.85.



Figure 23: Photograph showing samples recovered from G2 - 13.70m to 15.70.



**Figure 24: Photograph showing samples recovered from G2 - 13.70m to 22.60.**



**Figure 25: Photograph showing samples recovered from G2 - 23.00m to 24.00.**





Figure 26: Photograph showing samples recovered from G2 - 24.00m to 29.50.



Figure 27: Photograph showing samples recovered from G2 - 29.50m to 32.50.



Figure 28: Photograph showing samples recovered from G2 - 29.50m to 38.50.

## Borehole G3

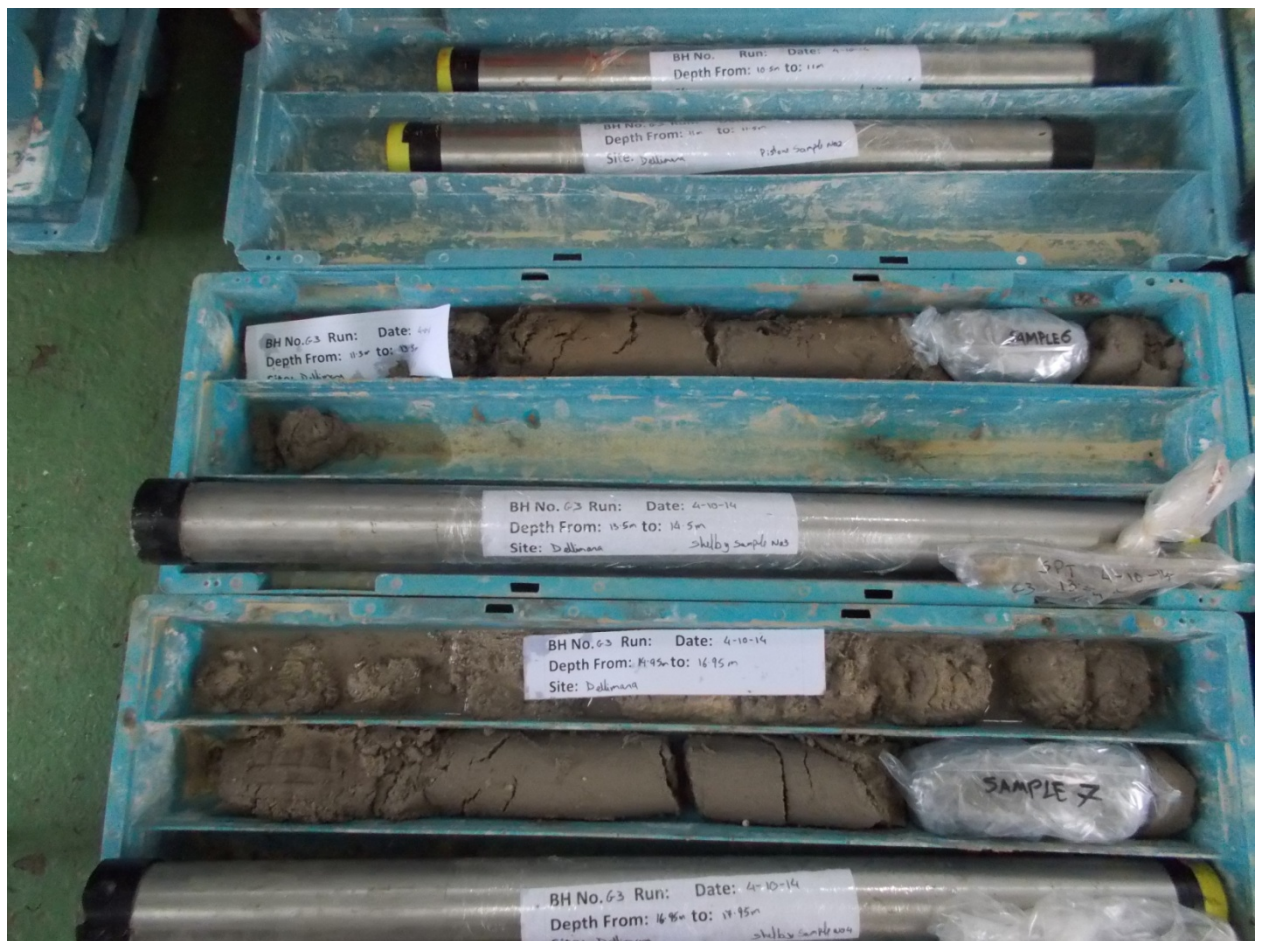


Figure 29: Photograph showing samples recovered from G3 - 0.00m to 7.45.





Figure 30: Photograph showing samples recovered from G3 - 8.00m to 17.35.





Figure 31: Photograph showing samples recovered from G3 - 17.35m to 20.35.



Figure 32: Photograph showing samples recovered from G3 - 20.35m to 23.35.



Figure 33: Photograph showing samples recovered from G3 - 23.35m to 26.35.

## Borehole G4



Figure 34: Photograph showing samples recovered from G4 - 0.50m to 8.40.





Figure 35: Photograph showing samples recovered from G4 - 8.40m to 14.40.

## Borehole G5

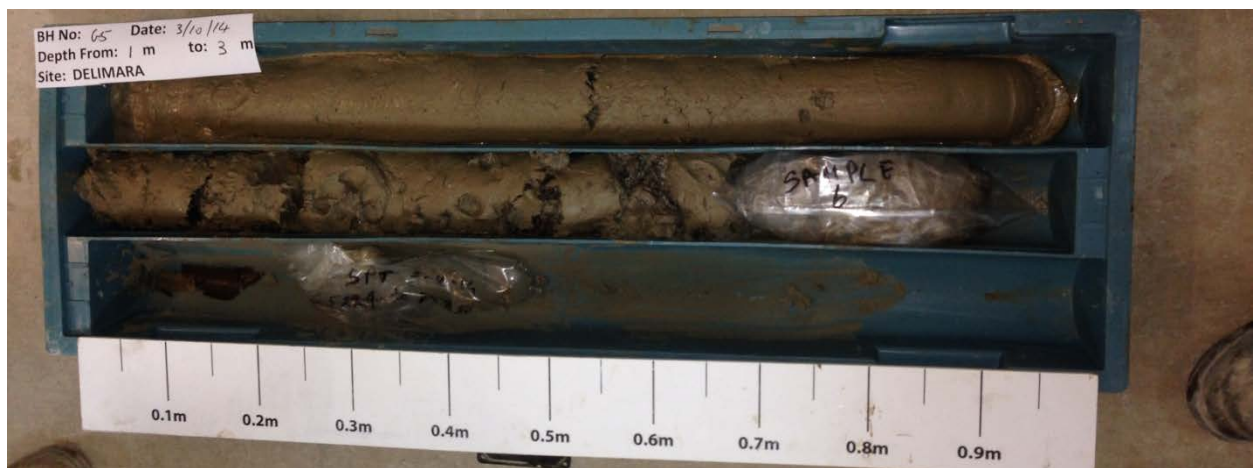


Figure 36: Photograph showing samples recovered from G5 - 1.00m to 3.00.



Figure 37: Photograph showing samples recovered from G5 - 4.45m to 6.45.



Figure 38: Photograph showing samples recovered from G5 - 7.90m to 10.90.



Figure 39: Photograph showing samples recovered from G5 - 12.35m to 14.35.



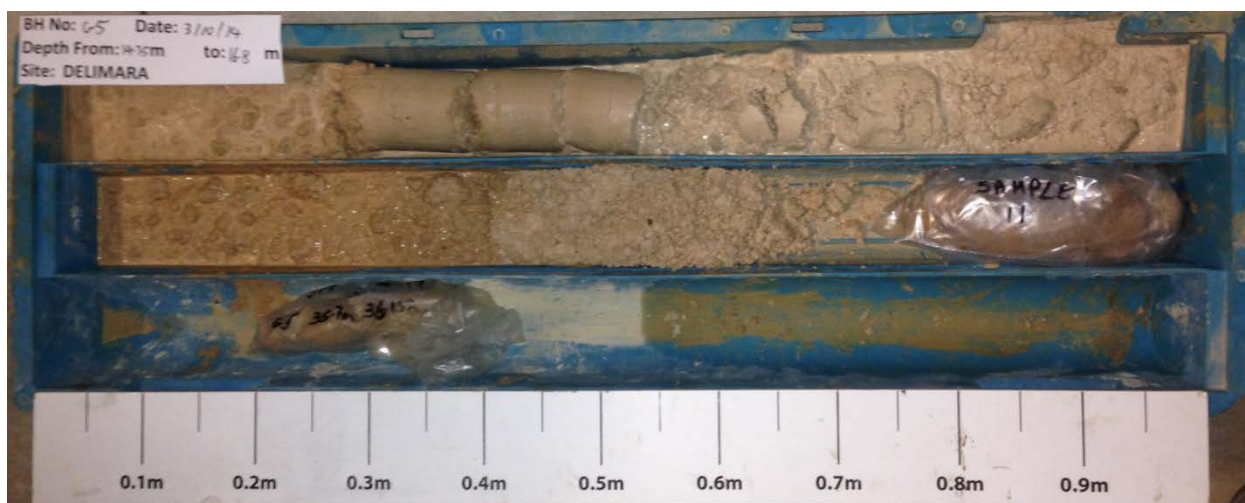


Figure 40: Photograph showing samples recovered from G5 - 14.35m to 16.80.



Figure 41: Photograph showing samples recovered from G5 - 17.25m to 19.25.



Figure 42: Photograph showing samples recovered from G5 - 19.36m to 21.36.





Figure 43: Photograph showing samples recovered from G5 - 21.80m to 24.45.



Figure 44: Photograph showing samples recovered from G5 - 24.45m to 26.45.

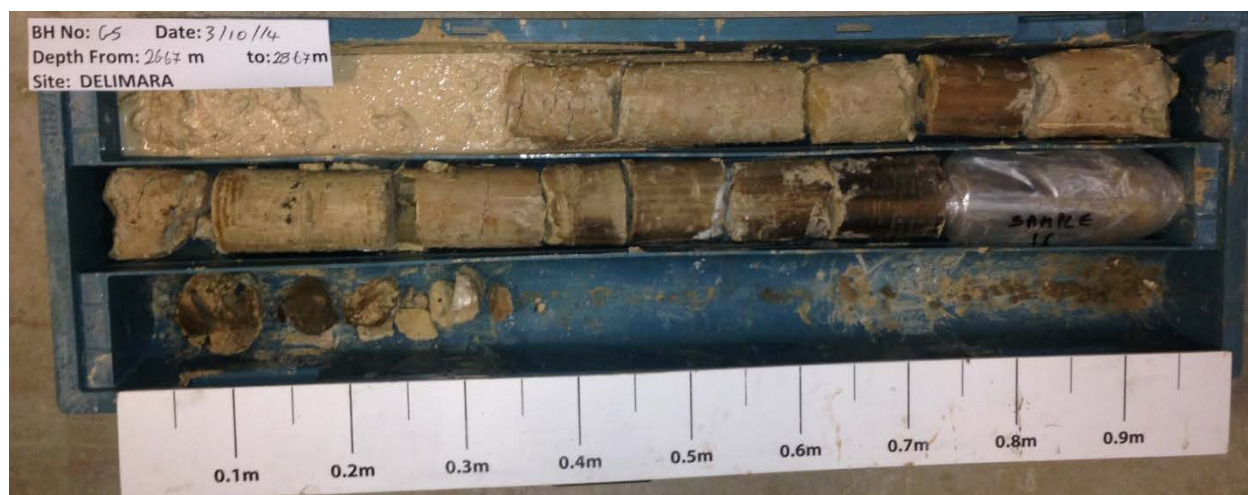


Figure 45: Photograph showing samples recovered from G5 - 26.67m to 28.67.



Figure 46: Photograph showing samples recovered from G5 - 28.67m to 30.67.



Figure 47: Photograph showing samples recovered from G5 - 30.67m to 33.67.



Figure 48: Photograph showing samples recovered from G5 - 33.67m to 36.67.



## Borehole G6



Figure 49: Photograph showing samples recovered from G6 - 0.00m to 5.32.



Figure 50: Photograph showing samples recovered from G6 - 5.32m to 7.82.



Figure 51: Photograph showing samples recovered from G6 - 7.82m to 9.82.



Figure 52: Photograph showing samples recovered from G6 - 10.60m to 13.20.



Figure 53: Photograph showing samples recovered from G6 - 13.20m to 15.30.



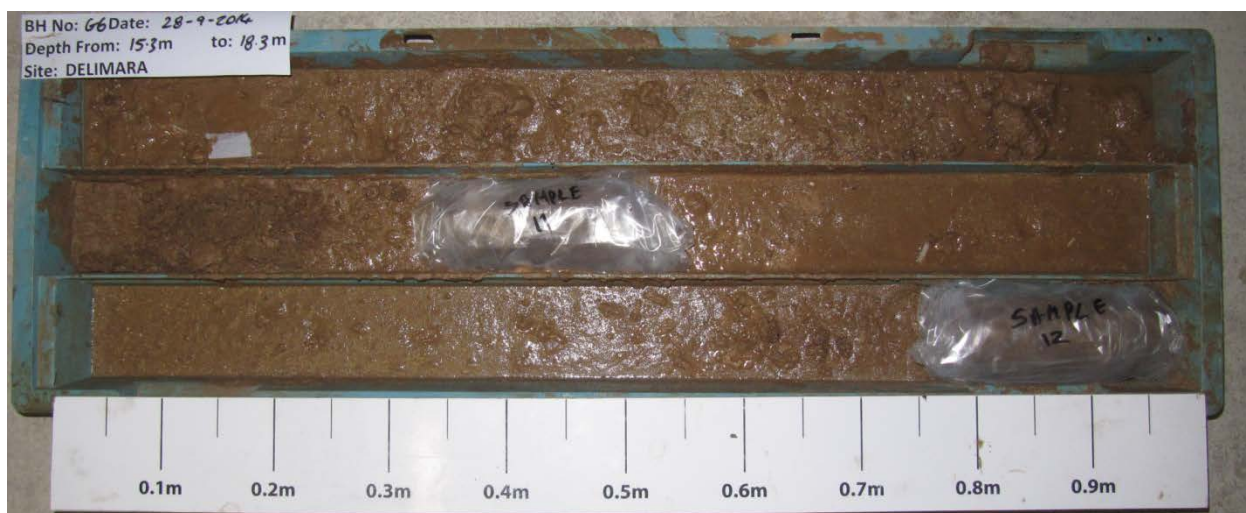


Figure 54: Photograph showing samples recovered from G6 - 15.30m to 18.30.



Figure 55: Photograph showing samples recovered from G6 - 17.30m to 20.60.



Figure 56: Photograph showing samples recovered from G6 - 20.60m to 22.00.



Figure 57: Photograph showing samples recovered from G6 - 22.00m to 25.00.





Figure 58: Photograph showing samples recovered from G6 - 25.00m to 28.00.



Figure 59: Photograph showing samples recovered from G6 - 28.00m to 32.00.

## Borehole G7



Figure 60: Photograph showing samples recovered from G7 - 0.00m to 4.00.



Figure 61: Photograph showing samples recovered from G7 - 4.00m to 6.85.





Figure 62: Photograph showing samples recovered from G7 - 6.85m to 8.85.

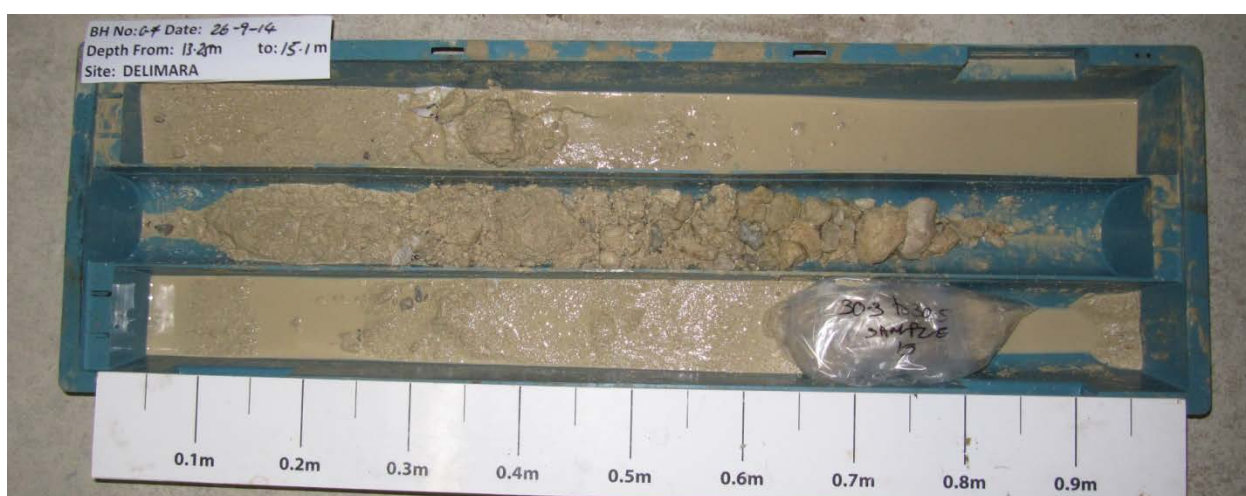


Figure 63: Photograph showing samples recovered from G7 - 13.25m to 15.10.



Figure 64: Photograph showing samples recovered from G7 - 15.10m to 17.10.



Figure 65: Photograph showing samples recovered from G7 - 17.10m to 19.60.



Figure 66: Photograph showing samples recovered from G7 - 19.60m to 21.60.



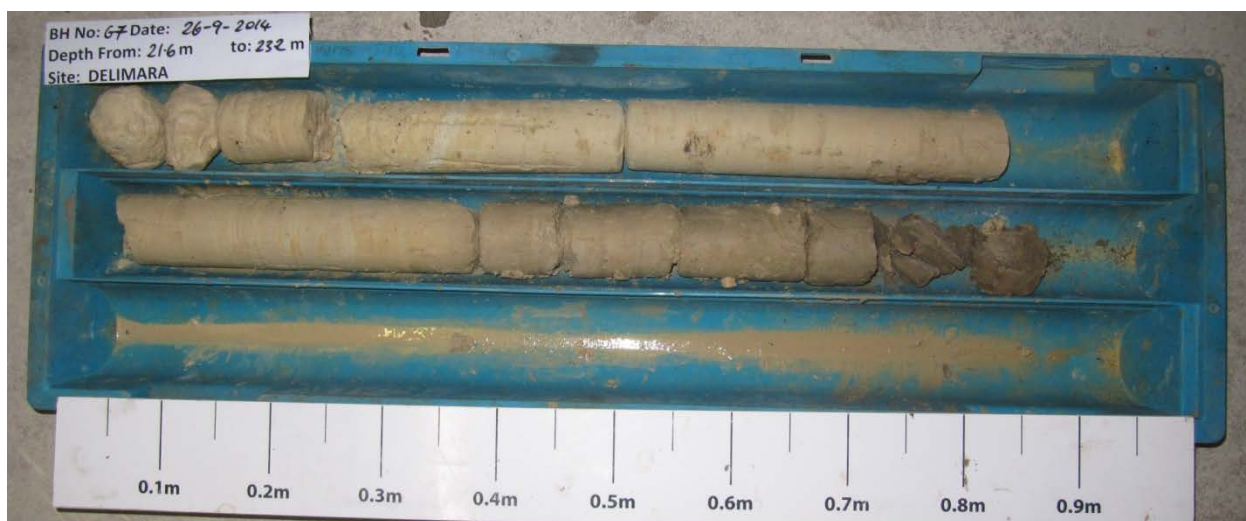


Figure 67: Photograph showing samples recovered from G7 - 21.60m to 23.20.



Figure 68: Photograph showing samples recovered from G7 - 23.20m to 26.20.

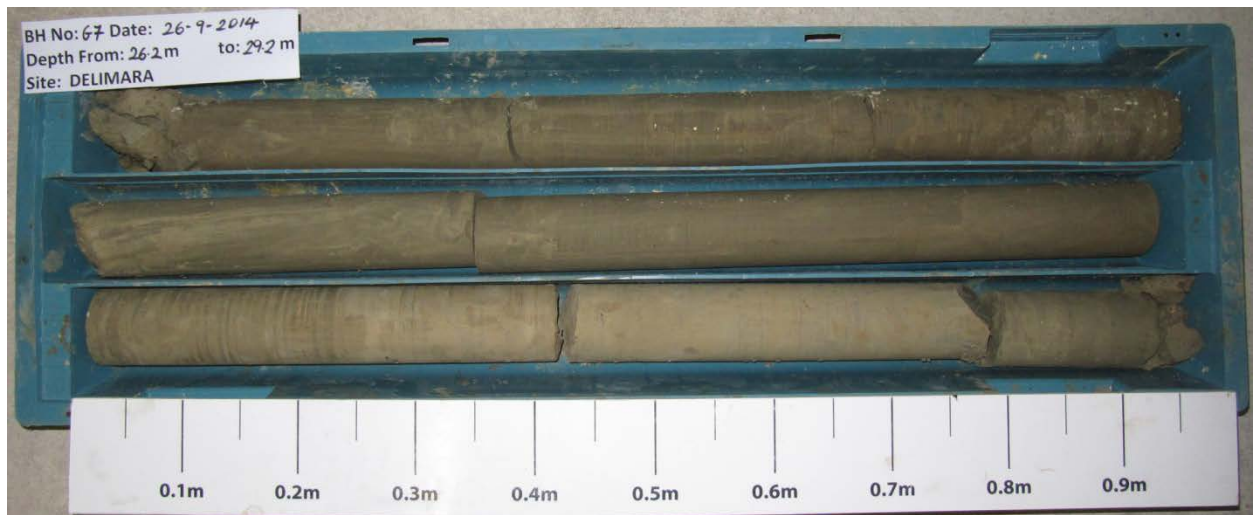


Figure 69: Photograph showing samples recovered from G7 - 26.20m to 29.20.



## Borehole G8



Figure 70: Photograph showing samples recovered from G8 - 0.00m to 3.15.



Figure 71: Photograph showing samples recovered from G8 - 3.15m to 9.90.





Figure 72: Photograph showing samples recovered from G8 - 10.35m to 11.9.

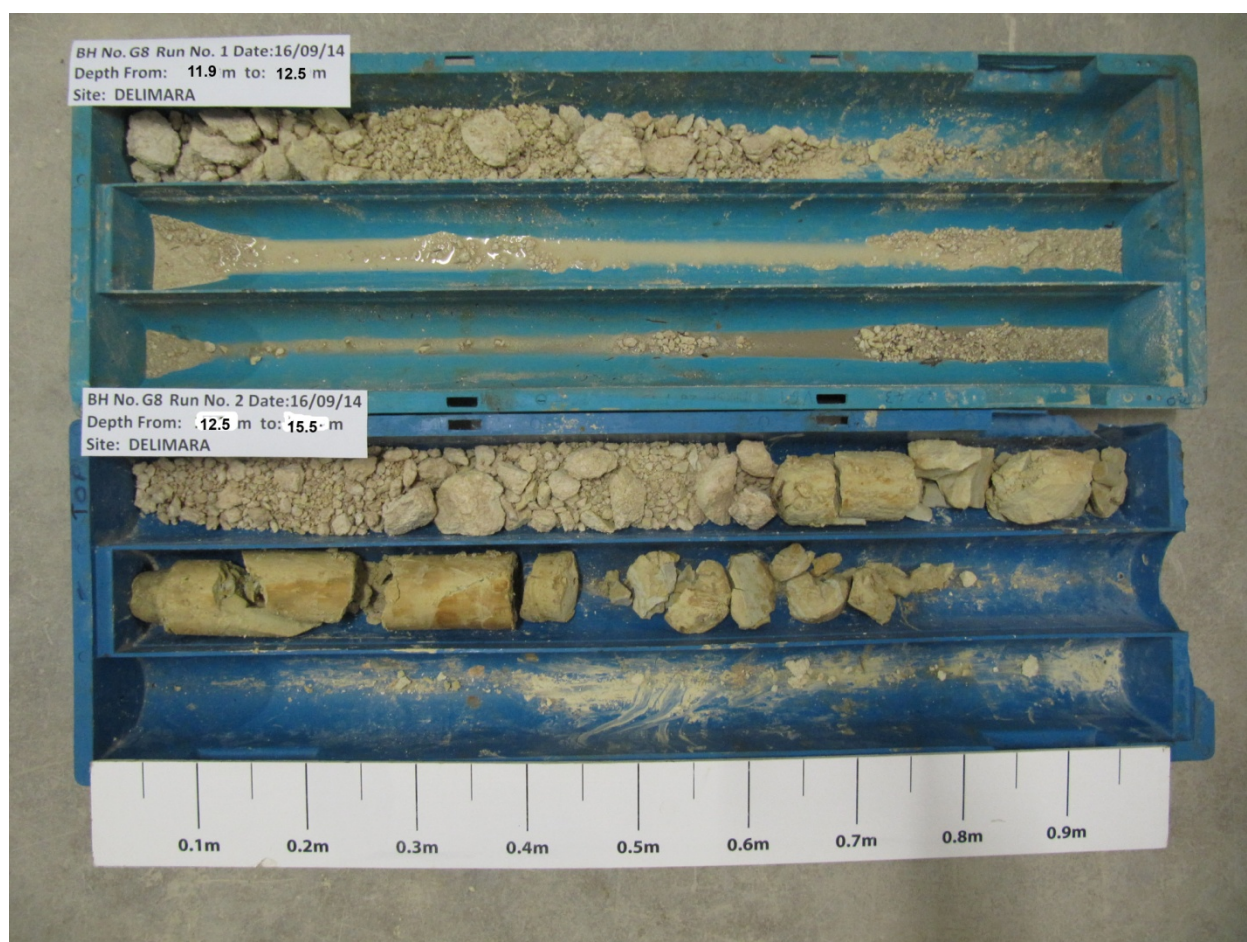


Figure 73: Photograph showing samples recovered from G8 - 11.90m to 15.50.

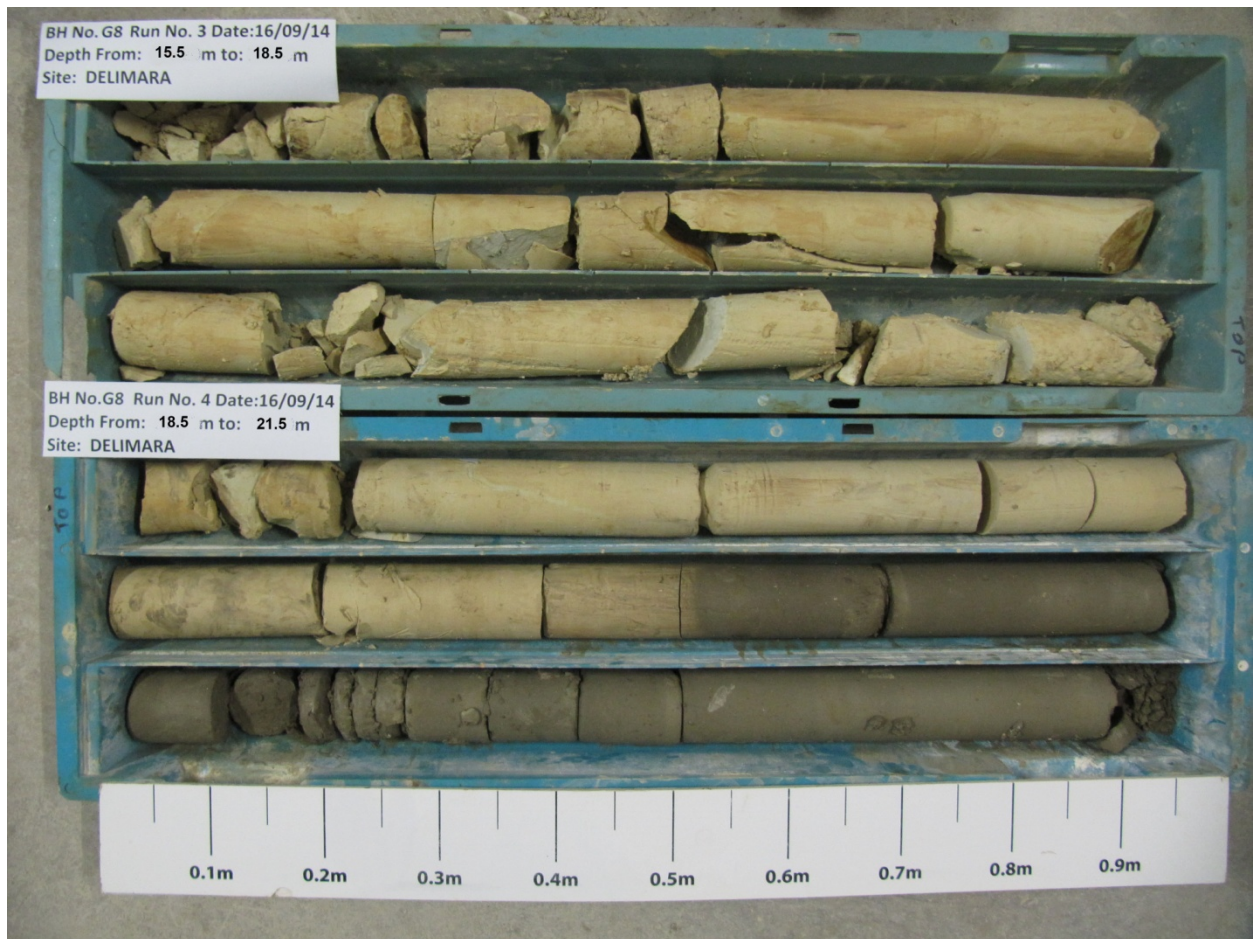


Figure 74: Photograph showing samples recovered from G8 - 15.50m to 21.50.



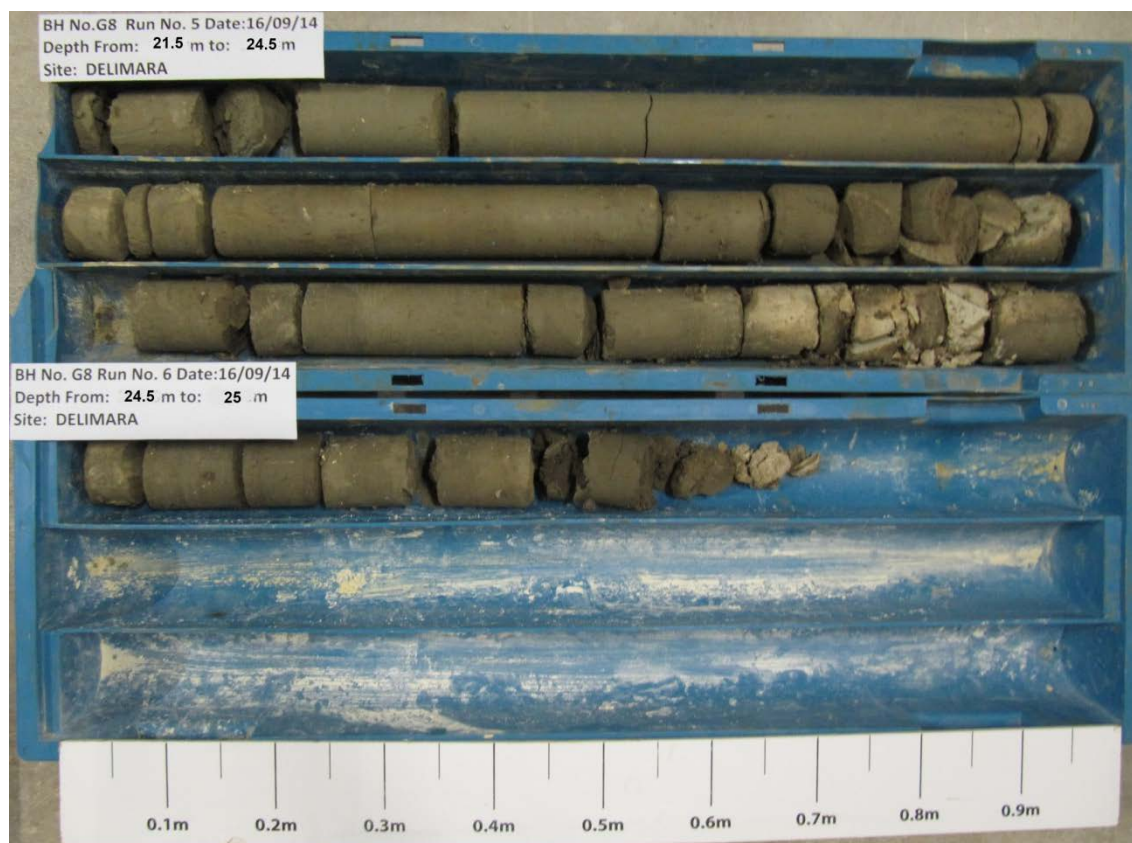


Figure 75: Photograph showing samples recovered from G8 - 21.50m to 25.00.

## Borehole G9



Figure 76: Photograph showing samples recovered from G9 - 0.00m to 9.10.



Figure 77: Photograph showing samples recovered from G9 - 9.10m to 16.90.

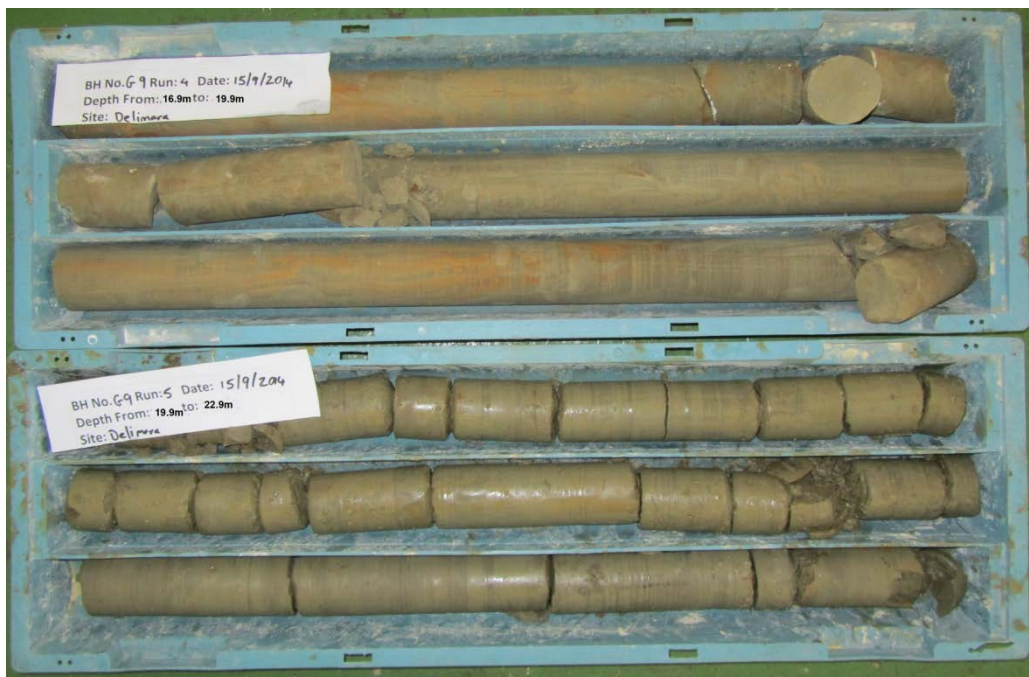


Figure 78: Photograph showing samples recovered from G9 - 16.90m to 22.90.





Figure 79: Photograph showing samples recovered from G9 - 22.90m to 25.00.

## Borehole G10



Figure 80: Photograph showing samples recovered from G9 - 0.00m to 9.70.



Figure 81: Photograph showing samples recovered from G9 - 9.70m to 13.0.





Figure 82: Photograph showing samples recovered from G9 - 13.00m to 19.00.

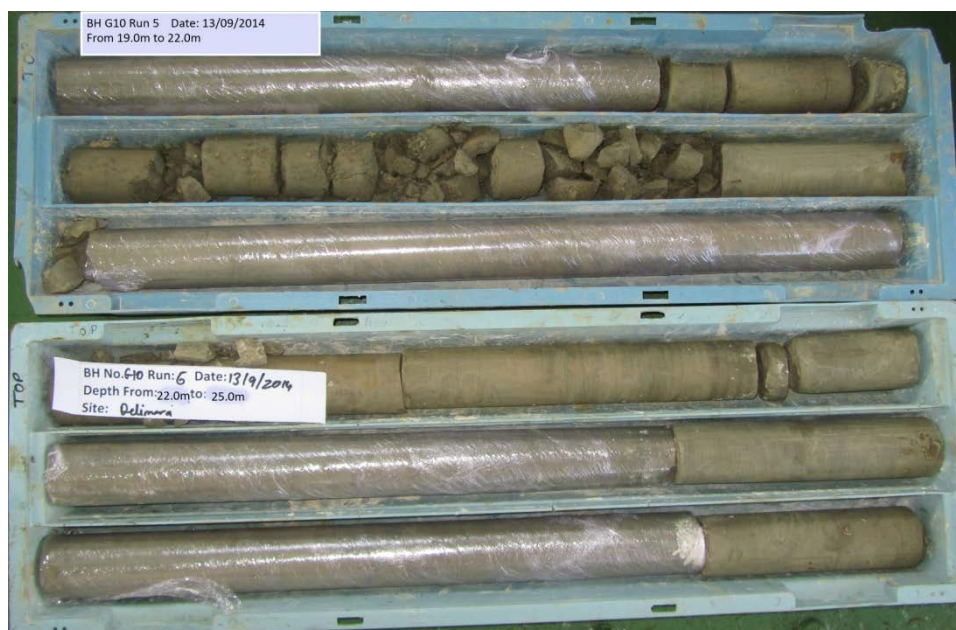


Figure 83: Photograph showing samples recovered from G9 - 19.00m to 25.00.



## APPENDIX 2 – BOREHOLE LOGS

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## SUBSURFACE EXPLORATION LOG



CLIENT: J&P Avax S.A. PROJECT NAME: Delimara Regasification Plant Project ID.: J2094

Borehole: G01 Local X: 9813.57 Local Y: 5012.70

Location: Delimara UTM33N X: 459756.75 UTM33N Y: 3964817.62

Described by: Rodney Xerri Elevation: -16.00 Drilling Rig: B40 on Bezz. Barge

Sheet 1 of 2 Date: 30/09/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Gravel Content (%)	Sand Content (%)	Fines Content (%)	Specific Gravity (Gs)	Dry unit Weight (t/m3)	Consolidation Tests				TRIAXIAL TESTS				Unconfined Compression (kPa)	Daily Groundwater Level	
																			Initial Void Ratio e0	Compression Ratio Cr	Consolidation Co-efficient Cr	Swollenness Modulus Cr	Type	Undrained Shear Strength Cu (kPa)	Cohesion (kPa)	Internal Friction Angle			
1			UP	6					GRAVELS (GC), grey colour, with clay to clayey ,sandy, with presence of fossil cells and organic material, normal dense.	1																			
2			UP							2														UU	269				
3			SPT							2a																			
4			US						3	25.26	43	11.6	56.2	20.5	23.3			1.55					CU		0	0.0			
5			US						4	30.40	41	12.1	42.6	26.3	31.1	2.59			0.708	0.04	25								
6			C						5																				
7			C	19					6	48.00	54	11.8	8.8	11.6	79.6		1.03												
8			SPT						6a																				
9			C						7	22.52	35	7.2	16.2	27.7	56.1														
10																													
11																													
12			C																										
13																													
14																													
15			C	33																									
16			SPT																										
17																													
18			C																										
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21			SPT																										
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Sample Type:  
 B - Bulk Sample  
 C- Core Sample  
 US - Undisturbed Shelby Sample  
 UP - Undisturbed Piston Sample  
 SPT - SPT Sample

SUBSURFACE EXPLORATION LOG



CLIENT: J&P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G01

Local X: 9813.57

Local Y: 5012.70

Location: Delimara

UTM33N X: 459756.75

UTM33N Y: 3964817.62

Described by: Rodney Xerri

Elevation: -16.00

Drilling Rig: B40 on Bezz. Barge

Sheet 2 of 2

Date: 30/09/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Gravel Content (%)	Sand Content (%)	Fines Content (%)	Specific Gravity (Gs)	Dry unit Weight (t/m3)	Consolidation Tests				TRIAXIAL TESTS				Standardised Compression (kPa)	Early Groundwater Level
																			Initial Void Ratio e0	Compression Ratio Cc	Consolidation Coefficient Cv	Oedometer Modulus Esd	Type	Undrained Shear Strength Cu (kPa)	Cohesion (kPa)	Internal Friction Angle		

Sample Type:  
B - Bulk Sample  
C- Core Sample  
US - Undisturbed Shelby Sample  
UP - Undisturbed Piston Sample  
SPT - SPT Sample



SUBSURFACE EXPLORATION LOG



CLIENT: J&P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G01

Local X: 9813.57

Local Y: 5012.70

Location: Delimara

UTM33N X: 459756.75

UTM33N Y: 3964817.62

Described by: Rodney Xerri

Elevation: -16.00

Drilling Rig: B40 on Bezz. Barge

Sheet 1 of 2

Date: 30/09/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Point Load		Anisotropy Index	Uniaxial Compressive Strength (MPa)	Dry Unit Weight (kN/m <sup>3</sup> )
												Is50	Type			
1			UP	6					GRAVELS (GC), grey colour, with clay to clayey, sandy, with presence of fossil cells and organic material, normal dense.	1						
										2						
2			UP							2a						
			SPT							3						
3			US	19					CLAY (CH), dark brown in colour, sand to sandy, with some gravel, stiff to very stiff	4						
4			US													
5																
6			C							5						
7			C	33					CLAY (CL), light brown colour, sand to sandy, with gravel at places, stiff to very stiff.	6						
			SPT							6a						
8			C							7						
9																
10				19												
11																
12			C							8						
13																
14			C	33						9						
			SPT							9a						
15																
16			C							10						
17			C	19						11						
18																
19			C							12						
			SPT							12a						
20			C							13						
									Next Page							

Sample Type:  
B - Bulk Sample  
C - Core Sample  
US - Undisturbed Shelby Sample  
UP - Undisturbed Piston Sample

## SUBSURFACE EXPLORATION LOG



CLIENT: J&amp;P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G01

Local X: 9813.57

Local Y: 5012.70

Location: Delimara

UTM33N X: 459756.75

UTM33N Y: 3964817.62

Described by: Rodney Xerri

Elevation: -16.00

Drilling Rig: B40 on Bezz. Barge

Sheet 2 of 2

Date: 30/09/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Point Load		Anisotropy Index	Uniaxial Compressive Strength (MPa)	Dry Unit Weight (kN/m³)
												Is50	Type			
21									CLAY (CL), light brown colour, sand to sandy, with gravel at places, stiff to very stiff.							
22			C	16						14						
			SPT							14a						
23																
24			C	32						15						
			SPT							22a						
25									Stiff to hard clay to marl, mainly after 26m, light brown in colour (R0-R1) (W1-W2)							
26										Run 1-5	21.4	0.2	P	1		
											25.2	0.2	L			
27					70	32										
28					100	78					21.2	0.5	P	0.4	4.64	
									Marl to Marly limestone, grey in colour, (R0-R1) (W1-W2) fragmented (D2-D4), 2-4 fractures/m, small mainly, open or closed with smooth surface plane, without fill		21.7	0.2	L			
29																
30															11.2	
31			C	100	119											
32									End of Borehole at 32.20m		16.3	1.0	P	0.5		
											16.5	0.5	L			
33																
34											16.6	1.6	P	0.26	16.2	
											16.5	0.4	L			
35																
36																
37																
38																
39																
40																

Sample Type:

B - Bulk Sample

C - Core Sample

US - Undisturbed Shelby Sample

UP - Undisturbed Piston Sample

## SUBSURFACE EXPLORATION LOG



CLIENT: J&amp;P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G02

Local X: 9804.82

Local Y: 4973.31

Location: Delimara

UTM33N X: 459747.85

UTM33N Y: 3964778.10

Described by: Rodney Xerri

Elevation: -17.10

Drilling Rig: B40 on Bezz. Barge

Sheet 1 of 2

Date: 01/10/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Gravel Content (%)	Sand Content (%)	Fines Content (%)	Specific Gravity (Gs)	Dry unit Weight (t/m3)	Consolidation Tests				TRIAXIAL TESTS				Unconfined Compression (kPa)	Daily groundwater level
																			Initial Void Ratio e0	Compression Ratio CC	Consolidation Co-efficient Cv	Oedometer Modulus Ev	Type	Undrained Shear Strength (kPa)	Cohesion (kPa)	Internal Friction Angle		
1			UP						SANDY CLAY (SC), Grey colour, with some gravels, with fossil cells and organic material, loose to medium	1																		
			UP							2	12.03	37		9.6	88.9	1.5							UU	20				
2																												
3																												
4			C						CLAY (CL), brown to grey colour, sand to sandy, with gravel at places, loose to very stiff.	5	77.51	44		4.4	50.4	45.2							UU	20				
5			US	17						4a																		
6			SPT																									
7																												
8			C						CLAY (CL), brown to grey colour, sand to sandy, with gravel at places, loose to very stiff.	5																		
			US	8						6		46		1.5	38.7	59.8	2.43											
9			SPT							6a																		
10																												
11			C							7	21.51	28	6.4	22.6	59.5	18.0	2.68		0.937	0.04	16		UU	39				
12			US	24						7a																		
13			SPT																									
14										9	23.19	36	8.2	37.4	17.0	45.7	2.44	1.57					CD		0	0.0		
15			US																									
16																												
17																												
18			C							10																		
19			US	39						10a																		
20			SPT																									
			C							11																		
			US							12	23.85	26	7.8	34.4	30.0	35.6	2.52											
			SPT							12a																		
									Next Page																			

Sample Type:  
 B - Bulk Sample  
 C- Core Sample  
 US - Undisturbed Shelby Sample  
 UP - Undisturbed Piston Sample  
 SPT - SPT Sample



SUBSURFACE EXPLORATION LOG



CLIENT: J&P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G02

Local X: 9804.82

Local Y: 4973.31

Location: Delimara

UTM33N X: 459747.85

UTM33N Y: 3964778.10

Described by: Rodney Xerri

Elevation: -17.10

Drilling Rig: B40 on Bezz. Barge

Sheet 2 of 2

Date: 01/10/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Gravel Content (%)	Sand Content (%)	Fines Content (%)	Specific Gravity (Gs)	Dry unit Weight (t/m3)	Consolidation Tests				TRIAXIAL TESTS				Unconfined Compression (kPa)	Fully Grained Water Level
																			Initial Void Ratio e0	Compression Ratio Cr	Consolidation Coefficient Cc	Oedometer Swelling Swell	Type	Undrained Shear Strength Cu (kPa)	Cohesion (kPa)	Internal Friction Angle		
			C							13																		
			C	64						14																		
									CLAY to MARL, light brown to cream in colour, sandy to gravel with pieces of marl and marly limestone. very stiff to hard. From 24.00 to 29.50m, only 1.7m sample due to washing out.																			
					30																							
									MARL to MARLY LIMESTONE, grey in colour, (R1-R2) (W1-W2) fragmented at places	Run 1-5																		
					100	76																						
			C		100	58																						
					100	54																						
									End of Borehole at 38.50m																			

Sample Type:  
B - Bulk Sample  
C- Core Sample  
US - Undisturbed Shelby Sample  
UP - Undisturbed Piston Sample  
SPT - SPT Sample

## SUBSURFACE EXPLORATION LOG



CLIENT: J&amp;P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G02

Local X: 9804.82

Local Y: 4973.31

Location: Delimara

UTM33N X: 459747.85

UTM33N Y: 3964778.10

Described by: Rodney Xerri

Elevation: -17.10

Drilling Rig: B40 on Bezz. Barge

Sheet 1 of 2

Date: 01/10/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Point Load		Anisotropy Index	Uniaxial Compression Strength (MPa)	Dry Unit Weight (t/m <sup>3</sup> )
												Is50	Type			
1			UP						SANDY CLAY (SC), Grey colour, with some gravels, with fossil cells and organic material, loose to medium	1						
2			UP							2						
3									CLAY (CL), brown to grey colour, sand to sandy, with gravel at places, loose to very stiff.							
4			C							5						
4			US							4						
5			SPT	17						4a						
6																
7			C						CLAY (CL), brown to grey colour, sand to sandy, with gravel at places, loose to very stiff.	5						
7			US							6						
8			SPT	8						6a						
9																
10			C							7						
11			US							8						
12			SPT	24						7a						
13										9						
14			US													
15			C							10						
15			SPT	39						10a						
16																
17																
18			C							11						
18			US							12						
19			SPT							12a						
20									Next Page							

## Sample Type:

B - Bulk Sample

C - Core Sample

US - Undisturbed Shelby Sample

UP - Undisturbed Piston Sample

SPT - SPT Sample

## SUBSURFACE EXPLORATION LOG



CLIENT: J&amp;P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G02

Local X: 9804.82

Local Y: 4973.31

Location: Delimara

UTM33N X: 459747.85

UTM33N Y: 3964778.10

Described by: Rodney Xerri

Elevation: -17.10

Drilling Rig: B40 on Bezz. Barge

Sheet 2 of 2

Date: 01/10/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Point Load		Anisotropy Index	Uniaxial Compression Strength (MPa)	Dry Unit Weight (t/m <sup>3</sup> )
												Is50	Type			
21			C							13						
22										14						
23			C	64					CLAY to MARL, light brown to cream in colour, sandy to gravel with pieces of marl and marly limestone. very stiff to hard. From 24.00 to 29.50m, only 1.7m sample due to washing out.							
24																
25																
26											2.6 2.9	10.6 7.4	P L	0.69		
27																
28																
29																
30									MARL to MARLY LIMESTONE, grey in colour, (R1-R2) (W1-W2) fragmented at places	Run 1-5						
31											13.7 13.8	1.9 1.2	P L	0.61	15.1	
32																
33																
34			C								14.5 14.6 14.0 14.3	2.2 1.0 1.5 0.9	P L P L	0.47 0.64	14.4 15.1	
35																
36																
37																
38																
39									End of Borehole at 38.50m							
40																

## Sample Type:

B - Bulk Sample

C - Core Sample

US - Undisturbed Shelby Sample

UP - Undisturbed Piston Sample

SPT - SPT Sample



SUBSURFACE EXPLORATION LOG



CLIENT: J&P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G03

Local X: 9839.11

Local Y: 4903.98

Location: Delimara

UTM33N X: 459781.94

UTM33N Y: 3964709.44

Described by: Rodney Xerri

Elevation: -8.70

Drilling Rig: B40 on Bezz. Barge

Sheet 1 of 2

Date: 04/10/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Gravel Content (%)	Sand Content (%)	Fines Content (%)	Specific Gravity (Gs)	Dry unit Weight (t/m3)	Consolidation Tests				TRIAXIAL TESTS				Unconfined Compression (kN/m2)	Soil Gravel/Water Level																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
																			Initial Void Ratio (e0)	Compression Ratio (Cc)	Consolidation Coefficient (Cv)	Oedometer Modulus (Evd)	Type	Undrained Shear Strength (kPa)	Cohesion (kPa)	Internal Friction Angle																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
			UP	5					SANDY CLAY (SC), grey in colour, alternating from sand to sandy clay, Full of organic material, intense smell, with fossil cells. very loose to loose	1	32.12	39		19.1	78.1	2.8						UU	23																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
		UP	2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
		C	6							54.29																		41	3.5	75.1	21.4		CD	17	37.8																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
		US	3a																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
		SPT	3a	7					CLAY (CL), light brown to grey colour, with sand to sandy andy, with gravel at places, loose to medium.	7	61.12	38		4.4	70.3	25.3	2.64		1.542	0.11	13	CU	0	36.1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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		C	8	29						8	44.58	34							1.246	0.09	20	UU	33																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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				R1-5					MARL to MARLY LIMESTONE, light brown to cream in colour, (R0-R1), (W1-W2) fragmantated at places (D2-D6), 2-4 D/m, 45,75 and 90 degrees. Big or small with smooth surface planes with no fill																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
					100	82			MARLY LIMESTONE, grey in colour, (R1-R2), (W1-W2) fragmented (D/2-D/4). Discontinuities 2-5/m, small or big, open or closed with smooth surface planes without fill material.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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Sample Type:  
B - Bulk Sample  
C- Core Sample  
US - Undisturbed Shelby Sample  
UP - Undisturbed Piston Sample  
SPT - SPT Sample

## SUBSURFACE EXPLORATION LOG



CLIENT: J&P Avax S.A. PROJECT NAME: Delimara Regasification Plant Project ID.: J2094  
 Borehole: G03 Local X: 9839.11 Local Y: 4903.98  
 Location: Delimara UTM33N X: 459781.94 UTM33N Y: 3964709.44  
 Described by: Rodney Xerri Elevation: -8.70 Drilling Rig: B40 on Bezz. Barge  
 Sheet 2 of 2 Date: 04/10/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Gravel Content (%)	Sand Content (%)	Fines Content (%)	Specific Gravity (Gs)	Dry unit Weight (t/m3)	Consolidation Tests				TRIAXIAL TESTS				Unconfined Compression (kPa)	Daily Groundwater Level
																			Initial Void Ratio e0	Compression Ratio Cr	Consolidation Co-efficient Cv	Oedometer Settlement (mm)	Type	Undrained Shear Strength Cu (kPa)	Cohesion (kPa)	Internal Friction Angle		
0									MARLY LIMESTONE, grey in colour, (R1-R2), (W1-W2) fragmented (D/2-D/4). Discontinuities 2-5/m, small or big, open or closed with smooth surface planes without fill material.																			
1					100	34																						
2																												
3																												
4					100	18																						
5																												
6																												
7									End of Borehole at 26.35m																			
8																												
9																												
10																												
11																												
12																												
13																												
14																												
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35																												
36																												
37																												
38																												
39																												
40																												

Sample Type:  
 B - Bulk Sample  
 C - Core Sample  
 US - Undisturbed Shelby Sample  
 UP - Undisturbed Piston Sample  
 SPT - SPT Sample

## SUBSURFACE EXPLORATION LOG



CLIENT: J&amp;P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G03

Local X: 9839.11

Local Y: 4903.98

Location: Delimara

UTM33N X: 459781.94

UTM33N Y: 3964709.44

Described by: Rodney Xerri

Elevation: -8.70

Drilling Rig: B40 on Bezz. Barge

Sheet 1 of 2

Date: 04/10/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Point Load		Anisotropy Index	Uniaxial Compression Strength (MPa)	Dry Unit Weight (t/m <sup>3</sup> )
												Is50	Type			
1			UP						SANDY CLAY (SC), grey in colour, alternating from sand to sandy clay, Full of organic material, intense smell, with fossil cells. very loose to loose	1						
			UP							2						
2																
3			C							6						
4			US	5					CLAY (CL), light brown to grey colour, with sand to sandy andy, with gravel at places, loose to medium.	3						
			SPT							3a						
5																
6			C							7						
7			US	7						4						
8			SPT							4a						
9																
10			C							8						
11			UP	29						5						
12			SPT							5a						
13																
14										9						
15										R1-5	20.5 21.9	0.1 0.1	P L	1	4.17	
16									MARL to MARLY LIMESTONE, light brown to cream in colour, (R0-R1), (W1-W2) fragmented at places (D2-D6), 2-4 D/m, 45,75 and 90 degrees. Big or small with smooth surface planes with no fill							
17			C								20.6 20.8	0.3 0.3	P L	1.5	5.62	
18									MARLY LIMESTONE, grey in colour, (R1-R2), (W1-W2) fragmented (D/2-D/4). Discontinuities 2-5/m, small or big, open or closed with smooth surface planes without fill material.						4.74	
19																
20									Next Page							

Sample Type:  
 B - Bulk Sample  
 C - Core Sample  
 US - Undisturbed Shelby Sample  
 UP - Undisturbed Piston Sample  
 SPT - SPT Sample



SUBSURFACE EXPLORATION LOG



CLIENT: J&P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G03

Local X: 9839.11

Local Y: 4903.98

Location: Delimara

UTM33N X: 459781.94

UTM33N Y: 3964709.44

Described by: Rodney Xerri

Elevation: -8.70

Drilling Rig: B40 on Bezz. Barge

Sheet 2 of 2

Date: 04/10/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Point Load		Anisotropy Index	Uniaxial Compression Strength (MPa)	Dry Unit Weight (t/m3)
												Is50	Type			
21					100	34			MARLY LIMESTONE, grey in colour, (R1-R2), (W1-W2) fragmented (D/2-D/4). Discontinuities 2-5/m, small or big, open or closed with smooth surface planes without fill material.		16.9 17.2	0.9 0.3	P L	0.38	9.45	
22																
23																
24																
25					100	18					18.0 17.9	0.4 0.2	P L	0.5		
26											15.9 16.3	0.7 0.3	P L	0.43	14.3	
27									End of Borehole at 26.35m							
28																
29																
30																
31																
32																
33																
34																
35																
36																
37																
38																
39																
40																

Sample Type:  
B - Bulk Sample  
C- Core Sample  
US - Undisturbed Shelby Sample  
UP - Undisturbed Piston Sample  
SPT - SPT Sample

**TERRACORE**

Sheet 1 of 2

Date: 29/09/2014

Sample Type:  
B - Bulk Sample  
C- Core Sample  
US - Undistrubed Shelby Sample  
UP - Undisturbed Piston Sample  
SPT - SPT Sample

SUBSURFACE EXPLORATION LOG



CLIENT: J&P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G04

Local X: 9823.95

Local Y: 4813.61

Location: Delimara

UTM33N X: 459767.48

UTM33N Y: 3964618.81


Described by: Rodney Xerri

Elevation: -11.40

Drilling Rig: B40 on Bezz. Barge

Sheet 2 of 2

Date: 29/09/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)		RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Gravel Content (%)	Sand Content (%)	Fines Content (%)	Specific Gravity (Gs)	Dry unit Weight (t/m3)	Consolidation Tests				TRIAXIAL TESTS				Standardised Compression (kPa)	Early Groundwater Level
																				Initial Void Ratio e0	Compression Ratio Cc	Consolidation Co-efficient Cv	Oedometer Modulus Esd	Type	Undrained Shear Strength Cu (kPa)	Cohesion (kPa)	Internal Friction angle		
					96	62				MARLY LIMESTONE to MARL, grey colour, (R1-R2),(W1-W2), fragmented at places (D/2-D.6) Due to extraction 1-3D/m, mainly closed, small and big. Smooth plane surfaces with no fill material																			
					100	86																							
										End of Borehole at 24.90m																			

Sample Type:  
B - Bulk Sample  
C- Core Sample  
US - Undisturbed Shelby Sample  
UP - Undisturbed Piston Sample  
SPT - SPT Sample



## SUBSURFACE EXPLORATION LOG



CLIENT: J&amp;P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G04

Local X: 9823.95

Local Y: 4813.61

Location: Delimara

UTM33N X: 459767.48

UTM33N Y: 3964618.81

Described by: Rodney Xerri

Elevation: -11.40

Drilling Rig: B40 on Bezz. Barge

Sheet 1 of 2

Date: 29/09/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Point Load		Anisotropy Index	Uniaxial Compression Strength (MPa)	Dry Unit Weight (t/m <sup>3</sup> )
												Is50	Type			
1			UP	8					SANDY CLAY (SC), grey, sandy with organic material and some fossil cells	1						
2			UP							2						
2			SPT						CLAY (CL), grey to brown, sand to sandy, gravel to gravelly at places, medium grained with some organic material	2a						
3			US							3						
4																
5			B	9						4						
5			SPT							4a						
6			US							5						
7			B							6						
8			B							7						
9									MARLY LIMESTONE to HARD CLAY, light brown. (R0-R1) (W1-W2)	Run 1-5	17.8	0.3 0.2	P L	1	7.99	
10									MARLY LIMESTONE to MARL, grey colour, (R1-R2),(W1-W2), fragmented at places (D/2-D.6) Due to extraction 1-3D/m, mainly closed, small and big. Smooth plane surfaces with no fill material							
11																
12											14.9	1.0	P	0.67	13.6	
13																
14			C													
15												0.6	L			
16												0.9 0.8	P L	1	9.14	
17																
18																
19																15.7
20									Next Page							

**Sample Type:**  
**B - Bulk Sample**  
**C - Core Sample**  
**US - Undisturbed Shelby Sample**  
**UP - Undisturbed Piston Sample**  
**SPT - SPT Sample**

## SUBSURFACE EXPLORATION LOG



CLIENT: J&amp;P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G04

Local X: 9823.95

Local Y: 4813.61

Location: Delimara

UTM33N X: 459767.48

UTM33N Y: 3964618.81

Described by: Rodney Xerri

Elevation: -11.40

Drilling Rig: B40 on Bezz. Barge

Sheet 2 of 2

Date: 29/09/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Point Load		Anisotropy Index	Uniaxial Compression Strength (MPa)	Dry Unit Weight (t/m <sup>3</sup> )
												Is50	Type			
21					96	62			MARLY LIMESTONE to MARL, grey colour, (R1-R2),(W1-W2), fragmented at places (D/2-D.6) Due to extraction 1-3D/m, mainly closed, small and big. Smooth plane surfaces with no fill material			1.8	P	0.44	12.9	
22												0.7	L			
23																
24					100	86										
25									End of Borehole at 24.90m							
26																
27																
28																
29																
30																
31																
32																
33																
34																
35																
36																
37																
38																
39																
40																

## Sample Type:

B - Bulk Sample

C - Core Sample

US - Undisturbed Shelby Sample

UP - Undisturbed Piston Sample

SPT - SPT Sample

## SUBSURFACE EXPLORATION LOG



CLIENT: J&amp;P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G05

Local X: 9804.85

Local Y: 5058.80

Location: Delimara

UTM33N X: 459747.76

UTM33N Y: 3964863.97

Described by: Rodney Xerri

Elevation: -17.10

Drilling Rig: B40 on Bezz. Barge

Sheet 1 of 2

Date: 01/10/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Gravel Content (%)	Sand Content (%)	Fines Content (%)	Specific Gravity (Gs)	Dry unit Weight (t/m3)	Consolidation Tests				TRIAXIAL TESTS				Unconfined Compression (kN/m2)	Daily groundwater level
																			Initial Void Ratio e0	Compression Ratio CC	Consolidation Co-efficient Cv	Oedometer Modulus Ev0	Type	Undrained Shear Strength (kPa)	Cohesion (kPa)	Internal Friction Angle		
1			UP						SANDY CLAY (SC), grey in colour, alternating with silty sand with same colour, full of organic material, loose to very loose	1																		
			UP							2	31.71	39		29.2	68.2	2.6						UU	25					
2										6																		
3			C						CLAY (CL), dark to brown colour, sand to sandy, gravelly at places, medium to stiff	3																		
			US							3a																		
4			SPT	7						7																		
5										4	27.75	46		4.7	16.1	79.2	2.45											
6			C							4a																		
7			US																									
8			SPT	7																								
9																												
10																												
11			C							8	16.20	30		28.5	28.3	43.2	2.55	1.68					UU	81				
			US							5																		
12			SPT	26						5a																		
13																												
14			C							9																		
			SPT							10																		
15																												
16																												
17			C							11	17.00	29		19.4	58.0	22.6		1.68										
19			C							12																		
20									Next Page																			


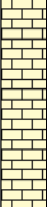
Sample Type:  
 B - Bulk Sample  
 C- Core Sample  
 US - Undisturbed Shelby Sample  
 UP - Undisturbed Piston Sample  
 SPT - SPT Sample



## SUBSURFACE EXPLORATION LOG



CLIENT: J&P Avax S.A. PROJECT NAME: Delimara Regasification Plant Project ID.: J2094  
 Borehole: G05 Local X: 9804.85 Local Y: 5058.80  
 Location: Delimara UTM33N X: 459747.76 UTM33N Y: 3964863.97  
 Described by: Rodney Xerri Elevation: -17.10 Drilling Rig: B40 on Bezz. Barge  
 Sheet 2 of 2 Date: 01/10/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Gravel Content (%)	Sand Content (%)	Fines Content (%)	Specific Gravity (Gs)	Dry unit Weight (t/m3)	Consolidation Tests				TRIAXIAL TESTS				Unconfined Compression (kPa)	Bulk (kPa)	Water Content (%)
																			Initial Void Ratio (e0)	Compression Ratio Cr	Consolidation Coefficient Cv	Oedometer Modulus Ev	Type	Undrained Shear Strength Cu (kPa)	Cohesion (kPa)	Internal Friction Angle			
1			C	16					CLAY (CL) , light brown in colour, sand to sandy, stiff to very stiff with pieces of marly limestone, dense to very dense.	13	13.00	28		38.2	17.8	44.0		1.72						UU	43				
2																													
3																													
4			C								14																		
5																													
6			C						Clay, hard to Marl, white to cream in colour, with big pieces of marly limestone. (R0-R1), (W1-W2). Fragmented at places.	15																			
7																													
8			C							16																			
9									Marl to Marly Limestone, grey to brownish in colour, (R1-R2) (W1-W2) fragmented at places (D/2-D/4). Discontinuities 2-4m open or closed, small mainly smooth surface planes																				
10					100	78																							
11																													
12					100	92																							
13																													
14																													
15																													
16					100	63																							
17									End of Borehole at 36.70m																				
18																													
19																													
20																													

Sample Type:  
 B - Bulk Sample  
 C - Core Sample  
 US - Undisturbed Shelby Sample  
 UP - Undisturbed Piston Sample  
 SPT - SPT Sample

## SUBSURFACE EXPLORATION LOG



CLIENT: J&amp;P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G05

Local X: 9804.85

Local Y: 5058.80

Location: Delimara

UTM33N X: 459747.76

UTM33N Y: 3964863.97

Described by: Rodney Xerri

Elevation: -17.10

Drilling Rig: B40 on Bezz. Barge

Sheet 1 of 2

Date: 01/10/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Point Load		Anisotropy Index	Uniaxial Compression Strength (MPa)	Dry Unit Weight (t/m <sup>3</sup> )
												Is50	Type			
1			UP						SANDY CLAY (SC), grey in colour, alternating with silty sand with same colour, full of organic material, loose to very loose	1						
			UP							2						
2																
3			C						CLAY (CL), dark to brown colour, sand to sandy, gravelly at places, medium to stiff	6						
			US							3						
4			SPT	7						3a						
5																
6			C							7						
			US							4						
7			SPT	7						4a						
8																
9																
10																
11			C							8						
			US							5						
12			SPT	26						5a						
13																
14			C							9						
			SPT							10						
15																
16																
17			C							11						
18																
19			C							12						
20																
									Next Page							

**Sample Type:**  
**B - Bulk Sample**  
**C - Core Sample**  
**US - Undisturbed Shelby Sample**  
**UP - Undisturbed Piston Sample**  
**SPT - SPT Sample**

## SUBSURFACE EXPLORATION LOG



CLIENT: J&amp;P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G05

Local X: 9804.85

Local Y: 5058.80

Location: Delimara

UTM33N X: 459747.76

UTM33N Y: 3964863.97

Described by: Rodney Xerri

Elevation: -17.10

Drilling Rig: B40 on Bezz. Barge

Sheet 2 of 2

Date: 01/10/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Point Load		Anisotropy Index	Uniaxial Compression Strength (MPa)	Dry Unit Weight (t/m <sup>3</sup> )
												Is50	Type			
21			C	16					CLAY (CL) , light brown in colour, sand to sandy, stiff to very stiff with pieces of marly limestone, dense to very dense.	13						
22																
23																
24			C							14						
25																
26			C						Clay, hard to Marl, white to cream in colour, with big pieces of marly limestone. (R0-R1), (W1-W2). Fragmented at places.	15						
27																
28			C							16						
29									Marl to Marly Limestone, grey to brownish in colour, (R1-R2) (W1-W2) fragmented at places (D/2-D/4). Discontinuities 2-4m open or closed, small mainly smooth surface planes					9.59		
30				100	78											
31															11.4	
32				100	92											
33																
34																
35				100	63										15.9	
36																
37									End of Borehole at 36.70m						16.5	
38																
39																
40																

## Sample Type:

B - Bulk Sample

C - Core Sample

US - Undisturbed Shelby Sample

UP - Undisturbed Piston Sample

SPT - SPT Sample

# TERRACORE

Sheet 1 of 2

Date: 27/09/2014

Sample Type:  
B - Bulk Sample  
C- Core Sample  
US - Undisturbed Shelby Sample  
UP - Undisturbed Piston Sample  
SPT - SPT Sample



SUBSURFACE EXPLORATION LOG



CLIENT: J&P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G06

Local X: 9839.20

Local Y: 5109.65

Location: Delimara

UTM33N X: 459781.91

UTM33N Y: 3964913.99

Described by: Rodney Xerri

Elevation: -15.00

Drilling Rig: B40 on Bezz. Barge

Sheet 2 of 2

Date: 27/09/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Gravel Content (%)	Sand Content (%)	Fines Content (%)	Specific Gravity (Gs)	Dry unit Weight (t/m3)	Consolidation Tests				TRIAXIAL TESTS				Unconfined Compression (kPa)	Bulk (kPa)	Water Level
																			Initial Void Ratio (e0)	Compression Ratio (Cc)	Consolidation Coefficient (Cv)	Oedometer Modulus (Eo)	Type	Undrained Shear Strength (Cu (kPa))	Cohesion (kPa)	Internal Friction Angle			
			B						MARL to MARLY LIMESTONE, to marl, grey in colour. (R1-R2), (W1-W2), 1-2 D/m at places fragmented (D2-D8)	Ru n 1-5 15	10.00	41	8.3				2.58	1.74											
			C		98	82			MARLY LIMESTONE, grey in colour, (R1-R2), (W1-W2), 2-4 f/m, open or closed, mainly small with smooth planes. Fragmented D/2-D/2, mainly during extraction																				
					100	84																							
					100	74																							
									End of Borehole at 31.00m																				

Sample Type:  
B - Bulk Sample  
C- Core Sample  
US - Undisturbed Shelby Sample  
UP - Undisturbed Piston Sample  
SPT - SPT Sample

## SUBSURFACE EXPLORATION LOG



CLIENT: J&amp;P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G06

Local X: 9839.20

Local Y: 5109.65

Location: Delimara

UTM33N X: 459781.91

UTM33N Y: 3964913.99

Described by: Rodney Xerri

Elevation: -15.00

Drilling Rig: B40 on Bezz. Barge

Sheet 1 of 2

Date: 27/09/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Point Load		Anisotropy Index	Uniaxial Compression Strength (MPa)	Dry Unit Weight (t/m <sup>3</sup> )
												Is50	Type			
1			UP	0					CLAY (CL), grey colour, sandy, with organic material and some fossils. loose to very Loose	1						
2			US	0					CLAY (CH), brown to grey in colour, silty at places, very loose to loose	2						
3			US	0					CLAY (CL), brown to grey in colour, gravelly at places, very stiff to hard	3						
4			US	0												
5			B							4						
6			B													
7			B							5						
8			B							6						
9			B							7						
10			B							8						
11																
12			B	37						9						
13																
14			B	35						10						
15			B							11						
16			B	41						12						
17			B							13						
18																
19			B	52						14						
20									Next Page							

**Sample Type:**  
**B - Bulk Sample**  
**C - Core Sample**  
**US - Undisturbed Shelby Sample**  
**UP - Undisturbed Piston Sample**  
**SPT - SPT Sample**

## SUBSURFACE EXPLORATION LOG



CLIENT: J&amp;P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G06

Local X: 9839.20

Local Y: 5109.65

Location: Delimara

UTM33N X: 459781.91

UTM33N Y: 3964913.99

Described by: Rodney Xerri

Elevation: -15.00

Drilling Rig: B40 on Bezz. Barge

Sheet 2 of 2

Date: 27/09/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Point Load		Anisotropy Index	Uniaxial Compression Strength (MPa)	Dry Unit Weight (t/m <sup>3</sup> )
												Is50	Type			
21			B						MARL to MARLY LIMESTONE, to marl, grey in colour. (R1-R2), (W1-W2), 1-2 D/m at places fragmented (D2-D8)	Run 1-5 15						
22									MARLY LIMESTONE, grey in colour, (R1-R2), (W1-W2), 2-4 f/m, open or closed, mainly small with smooth planes. Fragmented D/2-D/2, mainly during extraction						9.52	
23					98	82					15.7	1.3	P	0.59		
24												0.7	L		12.5	
25											14.6	1.2	P	0.73		
26			C		100	84						0.8	L		12.6	
27																
28																
29					100	74					15.1	1.4	P	0.62		
30												0.9	P	0.6	15.6	
31									End of Borehole at 31.00m							
32																
33																
34																
35																
36																
37																
38																
39																
40																

## Sample Type:

B - Bulk Sample

C - Core Sample

US - Undisturbed Shelby Sample

UP - Undisturbed Piston Sample

SPT - SPT Sample

## SUBSURFACE EXPLORATION LOG



CLIENT: J&amp;P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G07

Local X: 9839.02

Local Y: 5194.55

Location: Delimara

UTM33N X: 459781.81

UTM33N Y: 3964998.89

Described by: Rodney Xerri

Elevation: -11.70

Drilling Rig: B40 on Bezz. Barge

Sheet 1 of 2

Date: 26/09/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Gravel Content (%)	Sand Content (%)	Fines Content (%)	Specific Gravity (Gs)	Dry unit Weight (t/m3)	Consolidation Tests				TRIAXIAL TESTS				Unconfined Compression (kPa)	Daily Groundwater Level
																			Initial Void Ratio e0	Compression Ratio Cr	Consolidation Co-efficient Cv	Oedometer Modulus Es	Type	Undrained Shear Strength Cu (kPa)	Cohesion (kPa)	Internal Friction Angle		
1			B						Silt, clayey to sandy at places, grey in colour, with organics, loose to very loose.	1																		
										2	64.00	41		6.7	37.3	56.0												
2			B																									
3			B	3							3																	
			SPT								3a																	
4																												
5			B							4																		
6			B							5	69.00	43		7.0	38.4	54.6												
										6																		
7			B	3						6a																		
			SPT																									
8			B	3					Sandy grey to light brown, fine to medium grained, with interlayers of sandy ssilt	7	39.00	39		0.7	67.5	31.8							UU	43				
			SPT							7a																		
9			B							8																		
			SPT							8a																		
10			UP							9	30.00	37	8.9	14.0	20.5	65.5		1.51					UU	104				
										10	33.00						2.48											
11			US	11					Clay, brown in colour, with gravel, medium to stiff	10a																		
			SPT						Sand, grey colour, medium grained	11	39.00	36	8.9	11.1	47.0	41.9		1.62	1.657	0.18	27							
12			US						Alternating sand medium grained, dark brown in colour with fine gravel, layers of clay, with brown colour with fine to medium grains. medium to dense	12	39.00	34	9.6	6.6	27.3	66.1	2.39						UU	30				
			SPT	17						12a																		
13																												
14									Clay, light brown to light grey in colour, sandy with gravel, gravel at 18.4-19.1) at places marl or marly limestone, stiff to very stiff	13																		
15			B							14	26.00			31.9	48.2	20.0												
16										15																		
17			B	21																								
18																												
19																												
20			B							16	26.00	37	9.7	34.8	24.2	41.0												
									Next Page									1.26										

Sample Type:  
 B - Bulk Sample  
 C - Core Sample  
 US - Undisturbed Shelby Sample  
 UP - Undisturbed Piston Sample  
 SPT - SPT Sample



SUBSURFACE EXPLORATION LOG



CLIENT: J&P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G07

Local X: 9839.02

Local Y: 5194.55

Location: Delimara

UTM33N X: 459781.81

UTM33N Y: 3964998.89

Described by: Rodney Xerri

Elevation: -11.70

Drilling Rig: B40 on Bezz. Barge

Sheet 2 of 2

Date: 26/09/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Gravel Content (%)	Sand Content (%)	Fines Content (%)	Specific Gravity (Gs)	Dry unit Weight (t/m3)	Consolidation Tests				TRIAXIAL TESTS				Standardised Compression (kPa)	Bulk (W2) Water Level
																			Initial Void Ratio (e0)	Compression Ratio (Cc)	Consolidation Co-efficient (Cv)	Oedometer Modulus (Eo)	Type	Undrained Shear Strength (Su) (kPa)	Cohesion (kPa)	Internal Friction Angle		

Sample Type:  
B - Bulk Sample  
C- Core Sample  
US - Undisturbed Shelby Sample  
UP - Undisturbed Piston Sample  
SPT - SPT Sample

## SUBSURFACE EXPLORATION LOG



CLIENT: J&amp;P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G07

Local X: 9839.02

Local Y: 5194.55

Location: Delimara

UTM33N X: 459781.81

UTM33N Y: 3964998.89

Described by: Rodney Xerri

Elevation: -11.70

Drilling Rig: B40 on Bezz. Barge

Sheet 1 of 2

Date: 26/09/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Point Load		Anisotropy Index	Uniaxial Compression Strength (MPa)	Dry Unit Weight (t/m <sup>3</sup> )
												Is50	Type			
1			B						Silt, clayey to sandy at places, grey in colour, with organics, loose to very loose.	1						
2			B							2						
3			B	3						3						
			SPT							3a						
4																
5			B							4						
6			B	3						5						
			SPT							6						
7			B	3					Sandy grey to light brown, fine to medium grained, with interlayers of sandy silt	7						
			SPT							7a						
8			B	3						8						
			SPT							8a						
9			UP							9						
10			US	11					Clay, brown in colour, with gravel, medium to stiff	10a						
			SPT						Sand, grey colour, medium grained	11						
11			US						Alternating sand medium grained, dark brown in colour with fine gravel, layers of clay, with brown colour with fine to medium grains. medium to dense	12						
12			US	17						12a						
			SPT													
13									Clay, light brown to light grey in colour, sandy with gravel, gravel at 18.4-19.1) at places marl or marly limestone, stiff to very stiff	13						
14			B							14						
15			B							15						
16			B	21												
17																
18																
19																
20			B							16						
									Next Page							

**Sample Type:**  
**B - Bulk Sample**  
**C - Core Sample**  
**US - Undisturbed Shelby Sample**  
**UP - Undisturbed Piston Sample**  
**SPT - SPT Sample**

SUBSURFACE EXPLORATION LOG



CLIENT: J&P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G07

Local X: 9839.02

Local Y: 5194.55

Location: Delimara

UTM33N X: 459781.81

UTM33N Y: 3964998.89

Described by: Rodney Xerri

Elevation: -11.70

Drilling Rig: B40 on Bezz. Barge

Sheet 2 of 2

Date: 26/09/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Point Load		Anisotropy Index	Uniaxial Compression Strength (MPa)	Dry Unit Weight (t/m3)
												Is50	Type			
21			B	24						17	18.3	0.5 0.3	P L	0.41	4.77	
									Clay, light brown, marly with cobbles of marl							
22					100	87			Marl to Marly Limestone, light brown to cream, (R0) (W1-W2)							
23			C						Marly Limestone, Grey colour, (R1-R2) (W1-W2), slightly fragmented due to extraction, soft (D2-D4), open but mainly closed, with smooth plane surfaces, no fill material	Run 1-5	14.2	1.8 0.7	P L		12.8	15.8
24					100	96										
25																
26																
27																
28					100	98										
29																
30									End of Borehole at 29.20m							
31																
32																
33																
34																
35																
36																
37																
38																
39																
40																

Sample Type:  
B - Bulk Sample  
C- Core Sample  
US - Undisturbed Shelby Sample  
UP - Undisturbed Piston Sample  
SPT - SPT Sample

SUBSURFACE EXPLORATION LOG



CLIENT: J&P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G08

Local X: 9874.54

Local Y: 5085.25

Location: Delimara

UTM33N X: 459817.17

UTM33N Y: 3964889.71

Described by: Rodney Xerri

Elevation: -6.00

Drilling Rig: B40 on Bezz. Barge

Sheet 1 of 2

Date: 16/09/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Gravel Content (%)	Sand Content (%)	Fines Content (%)	Specific Gravity (Gs)	Dry unit Weight (t/m3)	Consolidation Tests				TRIAXIAL TESTS				Standard Compression (kPa)	Daily Groundwater Level		
																			Initial Void Ratio e0	Compression Ratio Cc	Consolidation Co-efficient Cv	Swelling Modulus Swell	Type	Undrained Shear Strength Cu (kPa)	Cohesion (kPa)	Internal Friction Angle				
									Sandy Silt, light grey to grey in colour, loose, organic and fossil cells	1													UU	5						
			B					2		65.00	42			1.9	68.1	30.0														
			US								42																			
			SPT	4				2a																						
									Clayey sand, grey in colour													CU UU	8	10	36.6					
			B					3																						
			US					4		67.00	40			1.7	67.3	31.0														
			SPT	5				4a			40																			
									Silty sand, grey with some organic material													CD								
			B					5																						
			US					6		53.00	37			4.8	42.6	52.6	2.56		1.899	0.15	7.3							2	40.1	
			SPT	2				6a																						
			B						Marly stiff clay, cream to light brown colour, weathered (W2-W3), R0-R1 hardness, very fragmented due to mechanical damage.	7																				
			UP					8		39.00	35			0.7	73.8	25.5	2.63													
			C					Ru n 1																						
								Ru n 2																						
									Marly Limestone, grey colour, Weathered (W1-W2), Hardness (R1-R2), fragmantated at places (D/2-D/6) with 1-3 fractures per meter. Closed to open with																					
			C					Ru n 3																						
								Ru n 4																						
									Next Page																					

Sample Type:  
B - Bulk Sample  
C- Core Sample  
US - Undisturbed Shelby Sample  
UP - Undisturbed Piston Sample  
SPT - SPT Sample



SUBSURFACE EXPLORATION LOG



CLIENT: J&P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G08

Local X: 9874.54

Local Y: 5085.25

Location: Delimara

UTM33N X: 459817.17

UTM33N Y: 3964889.71


Described by: Rodney Xerri

Elevation: -6.00

Drilling Rig: B40 on Bezz. Barge

Sheet 2 of 2

Date: 16/09/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Gravel Content (%)	Sand Content (%)	Fines Content (%)	Specific Gravity (Gs)	Dry unit Weight (t/m3)	Consolidation Tests				TRIAXIAL TESTS				Unconfined Compression (kPa)	Early Groundwater Level
																			Initial Void Ratio (e0)	Compression Ratio (Cc)	Consolidation Coefficient (Cv)	Oedometer Modulus (Eo)	Type	Undrained Shear Strength (kPa)	Cohesion (kPa)	Internal Friction Angle		
			C		100	86			smooth surface plane.	Ru n 5																		
			C		100	82																						
			C		100	92					Ru n 6																	
									End of Borehole at 25.00m																			

Sample Type:  
B - Bulk Sample  
C- Core Sample  
US - Undisturbed Shelby Sample  
UP - Undisturbed Piston Sample  
SPT - SPT Sample

## SUBSURFACE EXPLORATION LOG



CLIENT: J&amp;P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G08

Local X: 9874.54

Local Y: 5085.25

Location: Delimara

UTM33N X: 459817.17

UTM33N Y: 3964889.71

Described by: Rodney Xerri

Elevation: -6.00

Drilling Rig: B40 on Bezz. Barge

Sheet 1 of 2

Date: 16/09/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Point Load		Anisotropy Index	Uniaxial Compression Strength (MPa)	Dry Unit Weight (t/m <sup>3</sup> )
												Is50	Type			
1									Sandy Silt, light grey to grey in colour, loose, organic and fossil cells	1						
2			B							2						
			US													
3				4						2a						
			SPT						Clayey sand, grey in colour							
4																
5			B							3						
6			US							4						
				5					Silty sand, grey with some organic material	4a						
7			SPT													
8																
9			B							5						
			US						Marly stiff clay, cream to light brown colour, weathered (W2-W3), R0-R1 hardness, very fragmented due to mechanical damage.	6						
10				2						6a						
11			SPT													
			B							7						
12			UP						Marly Limestone, grey colour, Weathered (W1-W2), Hardness (R1-R2), fragmented at places (D/2-D/6) with 1-3 fractures per meter. Closed to open with smooth surface plane.	8						
										Run 1						
13			C							Run 2						
14			C						Next Page	Run 3						
15																
16																
17			C													
									Next Page							
18																
19																
20																

Sample Type:  
 B - Bulk Sample  
 C - Core Sample  
 US - Undisturbed Shelby Sample  
 UP - Undisturbed Piston Sample  
 SPT - SPT Sample

## SUBSURFACE EXPLORATION LOG



CLIENT: J&amp;P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G08

Local X: 9874.54

Local Y: 5085.25

Location: Delimara

UTM33N X: 459817.17

UTM33N Y: 3964889.71

Described by: Rodney Xerri

Elevation: -6.00

Drilling Rig: B40 on Bezz. Barge

Sheet 2 of 2

Date: 16/09/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Point Load		Anisotropy Index	Uniaxial Compression Strength (MPa)	Dry Unit Weight (t/m <sup>3</sup> )
												Is50	Type			
21			C		100	86				Run 5						
22											18.3	0.3 0.5	P L	0.6	8.57	
23			C		100	82									14.5	
24											17.0	2.7	L			
25			C		100	92				Run 6						
25									End of Borehole at 25.00m		16.6	2.2 3.5	L P	0.63		
26																
27																
28																
29																
30																
31																
32																
33																
34																
35																
36																
37																
38																
39																
40																

## Sample Type:

B - Bulk Sample

C - Core Sample

US - Undisturbed Shelby Sample

UP - Undisturbed Piston Sample

SPT - SPT Sample

SUBSURFACE EXPLORATION LOG



CLIENT: J&P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G09

Local X: 9923.52

Local Y: 5154.89

Location: Delimara

UTM33N X: 459866.66

UTM33N Y: 3964959.19

Described by: Rodney Xerri

Elevation: -5.25

Drilling Rig: B40 on Bezz. Barge

Sheet 1 of 2

Date: 15/09/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Gravel Content (%)	Sand Content (%)	Fines Content (%)	Specific Gravity (Gs)	Dry unit Weight (t/m3)	Consolidation Tests				TRIAXIAL TESTS				Standardized Compression (kN/m2)	Soil Moisture Content	
																			Initial Void Ratio e0	Compression Ratio Cc	Consolidation Coefficient Cv	Oedometer Modulus Esd	Type	Undrained Shear Strength Cu (kPa)	Cohesion (kPa)	Internal Friction Angle			
			B	4					Silty Sand, grey in colour, filled with organic material and fossil cells	1	64.00	25		0.3	88.7	11.0													
			B						Clayey sand, grey in colour	2	37.00	25		1.9	89.1	9.0	2.68												
			US	7					Silty sand, grey with some organic material	3a	56.00																		
			SPT							4	62.00	40		4.2	69.5	26.4													
			US	43					Marl to stiff clay, cream to light brown, Weathered (W2-W3), hardness (R0-R1), fragmented (D/2-D/10)		58.00	40		19.3	36.4	44.3	2.52		1.450	0.11	19		UU	40					
										Ru n 1-5	31.00	40																	
			C		71				Marly Limestone, grey colour, Weathered (W1-W2), Hardness (R1-R2), fragmented at places (D/2-D/6) with 1-3 fractures per meter. Closed to open with smooth surface plane.																				
					52																								
					100	98																							
					100	100																							
									Next Page																				

Sample Type:  
B - Bulk Sample  
C- Core Sample  
US - Undisturbed Shelby Sample  
UP - Undisturbed Piston Sample  
SPT - SPT Sample



SUBSURFACE EXPLORATION LOG



CLIENT: J&P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G09

Local X: 9923.52

Local Y: 5154.89

Location: Delimara

UTM33N X: 459866.66

UTM33N Y: 3964959.19


Described by: Rodney Xerri

Elevation: -5.25

Drilling Rig: B40 on Bezz. Barge

Sheet 2 of 2

Date: 15/09/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)		RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Gravel Content (%)	Sand Content (%)	Fines Content (%)	Specific Gravity (Gs)	Dry unit Weight (t/m3)	Consolidation Tests				TRIAXIAL TESTS				Unconfined Compression (kPa)	Only Groundwater Level
																				Initial Void Ratio (e)	Compression Ratio (Cr)	Consolidation Coefficient (Cc)	Oedometer Swell Ratio (s)	Type	Undrained Shear Strength (kPa)	Cohesion (kPa)	Internal Friction Angle		
					100	82				End of Borehole at 25.00m																			
					100	100																							

Sample Type:  
B - Bulk Sample  
C- Core Sample  
US - Undisturbed Shelby Sample  
UP - Undisturbed Piston Sample  
SPT - SPT Sample

## SUBSURFACE EXPLORATION LOG



CLIENT: J&amp;P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G09

Local X: 9923.52

Local Y: 5154.89

Location: Delimara

UTM33N X: 459866.66

UTM33N Y: 3964959.19

Described by: Rodney Xerri

Elevation: -5.25

Drilling Rig: B40 on Bezz. Barge

Sheet 1 of 2

Date: 15/09/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Point Load		Anisotropy Index	Uniaxial Compression Strength (MPa)	Dry Unit Weight (t/m <sup>3</sup> )
												Is50	Type			
1			B	4					Silty Sand, grey in colour, filled with organic material and fossil cells	1						
2																
3			B							2						
4			US	7					Clayey sand, grey in colour	3						
5			SPT							3a						
6									Silty sand, grey with some organic material							
7																
8			US	43						4						
9									Marl to stiff clay, cream to light brown, Weathered (W2-W3), hardness (R0-R1), fragmented (D/2-D/10)	Run 1-5						3.9
10					71						20.3	1.5	L			
11																
12					52											
13																
14			C													
15											19.0	0.7	L	1.33		3.2
16					100	98			Marly Limestone, grey colour, Weathered (W1-W2), Hardness (R1-R2), fragmented at places (D/2-D/6) with 1-3 fractures per meter. Closed to open with smooth surface plane.		19.0	0.9	P			
17											17.6	0.4	L	1.67		10.4
18											17.6	0.5	P			
19																
20					100	100					16.3	3.0	L	0.44		12.9
											16.3	1.2	P			10.1
																9.9
									Next Page							

**Sample Type:**  
**B - Bulk Sample**  
**C- Core Sample**  
**US - Undisturbed Shelby Sample**  
**UP - Undisturbed Piston Sample**  
**SPT - SPT Sample**

SUBSURFACE EXPLORATION LOG



CLIENT: J&P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G09

Local X: 9923.52

Local Y: 5154.89

Location: Delimara

UTM33N X: 459866.66

UTM33N Y: 3964959.19

Described by: Rodney Xerri

Elevation: -5.25

Drilling Rig: B40 on Bezz. Barge

Sheet 2 of 2

Date: 15/09/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Point Load		Anisotropy Index	Uniaxial Compression Strength (MPa)	Dry Unit Weight (t/m3)
												Is50	Type			
21					100	82					16.1	3.2	L	0.31		
22											16.1	0.8	P			
23																
24					100	100									12.6	
25									End of Borehole at 25.00m		17.7	2.4	L	0.4		9.4
25											17.7	0.8	P			
26																
27																
28																
29																
30																
31																
32																
33																
34																
35																
36																
37																
38																
39																
40																

Sample Type:  
B - Bulk Sample  
C- Core Sample  
US - Undisturbed Shelby Sample  
UP - Undisturbed Piston Sample  
SPT - SPT Sample

SUBSURFACE EXPLORATION LOG



CLIENT: J&P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G10

Local X: 9952.97

Local Y: 5196.08

Location: Delimara

UTM33N X: 459895.44

UTM33N Y: 3965000.55

Described by: Rodney Xerri

Elevation: -3.00

Drilling Rig: B40 on Bezz. Barge

Sheet 1 of 2

Date: 12/09/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Gravel Content (%)	Sand Content (%)	Fines Content (%)	Specific Gravity (Gs)	Dry unit Weight (t/m3)	Consolidation Tests				TRIAXIAL TESTS				Standard Compression (kPa)	Daily groundwater Level
																			Initial Void Ratio e0	Compression Ratio Cc	Consolidation Co-efficient Cv	Swelling Swell Modulus Esd	Type	Undrained Shear Strength Cu (kPa)	Cohesion (kPa)	Internal Friction Angle		
				48					Boulders - no sample		22.00																	
			B						Medium to stiff clay, green to grey in colour, probably part of limestone boulders	1												CU	30	0	0.0			
			US					2		27.00	34		34	34.2	36.5	29.3												
			SPT							2a																		
			US						Silty sand, medium to fine grained, light grey to grey, full of organic material and at places cells of fossils. Intense organic smell from 8.50m to 9.40m	3	36.00	39		4.1	82.9	13.0	2.72		1.042	0.06	6.6							
			SPT					3a																				
				7						4																		
			B																									
			B							5	40.00	38		6.5	72.5	21.0												
				1							52.00	38																
										6	48.00	35		2.5	67.1	30.4						UU	17					
									Stiff light grey marly clay, changing to rock	Ru n 1																		
			C		100				Marly Limestone, yellow to light cream in colour, weathered (W2-W3), 60% recovery	Ru n 2																		
					60	36																						
			C																									
									Marly Limestone, grey in colour, slightly weathered (W1-W2), R1-R2 hardness, Gradually getting stronger. Fragmented at places due to mechanical damage. Discontinuities 0-2/m. Closed discontinuities at 45-75 degrees	Ru n 3																		
			C		100	92																						
										Ru n 4																		
			C		100	73																						
										Ru n 5																		
									Next Page																			

Sample Type:  
B - Bulk Sample  
C- Core Sample  
US - Undisturbed Shelby Sample  
UP - Undisturbed Piston Sample  
SPT - SPT Sample



SUBSURFACE EXPLORATION LOG



CLIENT: J&P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G10

Local X: 9952.97

Local Y: 5196.08

Location: Delimara

UTM33N X: 459895.44

UTM33N Y: 3965000.55

Described by: Rodney Xerri

Elevation: -3.00

Drilling Rig: B40 on Bezz. Barge

Sheet 2 of 2

Date: 12/09/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Gravel Content (%)	Sand Content (%)	Fines Content (%)	Specific Gravity (Gs)	Dry unit Weight (t/m3)	Consolidation Tests				TRIAXIAL TESTS				Unconfined Compression (kPa)	Early Groundwater Level
																			Initial Void Ratio (e0)	Compression Ratio Cc	Consolidation Coefficient Cv	Oedometer Modulus (kPa)	Type	Undrained Shear Strength (kPa)	Cohesion (kPa)	Internal Friction Angle		
			C		100	78				Run 6																		
			C		100	95																						
									End of Borehole at 25.00m																			
		</																										

Sample Type:  
B - Bulk Sample  
C- Core Sample  
US - Undisturbed Shelby Sample  
UP - Undisturbed Piston Sample  
SPT - SPT Sample

## SUBSURFACE EXPLORATION LOG



CLIENT: J&amp;P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G10

Local X: 9952.97

Local Y: 5196.08

Location: Delimara

UTM33N X: 459895.44

UTM33N Y: 3965000.55

Described by: Rodney Xerri

Elevation: -3.00

Drilling Rig: B40 on Bezz. Barge

Sheet 1 of 2

Date: 12/09/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Point Load		Anisotropy Index	Uniaxial Compression Strength (MPa)	Dry Unit Weight (t/m3)	
												Is50	Type				
				48					Boulders - no sample								
1									Medium to stiff clay, green to grey in colour, probably part of limestone boulders	1							
2			B							2							
			US							2a							
3			SPT						Silty sand, medium to fine grained, light grey to grey, full of organic material and at places cells of fossils. Intense organic smell from 8.50m to 9.40m	3							
4			US							3a							
			SPT														
5				7						4							
6			B														
										5							
7			B	1					Stiff light grey marly clay, changing to rock								
10			C		100					Run 1							
										Run 2							
11			C		60	30											
13									Marly Limestone, yellow to light cream in colour, weathered (W2-W3), 60% recovery								
14			C		100	92				Run 3	19.9	0.2	L		7.8		
											16.4				7.8		
15									Marly Limestone, grey in colour, slightly weathered (W1-W2), R1-R2 hardness, Gradually getting stronger. Fragmented at places due to mechanical damage. Discontinuities 0-2/m. Closed discontinuities at 45-75 degrees		16.6	1.8	L	11.2			
											15.9	0.5	P	0.36	6.7		
16			C							Run 4	15.7	2.1	L	0.35			
17																	
18			C		100	73											
19										Run 5	17.4				6.5		
															6.5		
20															16.7		
									Next Page								

**Sample Type:**  
**B - Bulk Sample**  
**C - Core Sample**  
**US - Undisturbed Shelby Sample**  
**UP - Undisturbed Piston Sample**  
**SPT - SPT Sample**

## SUBSURFACE EXPLORATION LOG



CLIENT: J&amp;P Avax S.A.

PROJECT NAME: Delimara Regasification Plant

Project ID.: J2094

Borehole: G10

Local X: 9952.97

Local Y: 5196.08

Location: Delimara

UTM33N X: 459895.44

UTM33N Y: 3965000.55

Described by: Rodney Xerri

Elevation: -3.00

Drilling Rig: B40 on Bezz. Barge

Sheet 2 of 2

Date: 12/09/2014

Depth (m)	Elevation	Temporary Casing	Sample	SPT N Value	Recovery & TCR (%)	RQD %	Piezometer	Symbol	Description	Sample No.	Water Content (%)	Point Load		Anisotropy Index	Uniaxial Compression Strength (MPa)	Dry Unit Weight (t/m <sup>3</sup> )
												Is50	Type			
21			C		100	78				Run 6	15.4 15.7	3.0 1.2	L P	0.48	8.7 8.7 13	
22																
23			C		100	95										
24																
25									End of Borehole at 25.00m		15.4				9.9 9.9	
26																
27																
28																
29																
30																
31																
32																
33																
34																
35																
36																
37																
38																
39																
40																

## Sample Type:

B - Bulk Sample

C - Core Sample

US - Undisturbed Shelby Sample

UP - Undisturbed Piston Sample

SPT - SPT Sample

## APPENDIX 3 – LABORATORY TEST CERTIFICATES

---



## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR243
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	ATT052
				Tested by:	LS
				Date of test:	10/19/2014

#### Test Information

Sample Ref No: 140930 - Soil  
 Sampling Location: BH G1  
 Sample Description: BH G1 Sample 3  
 Date of sampling: 9/30/2014  
 Type of Material: Soil

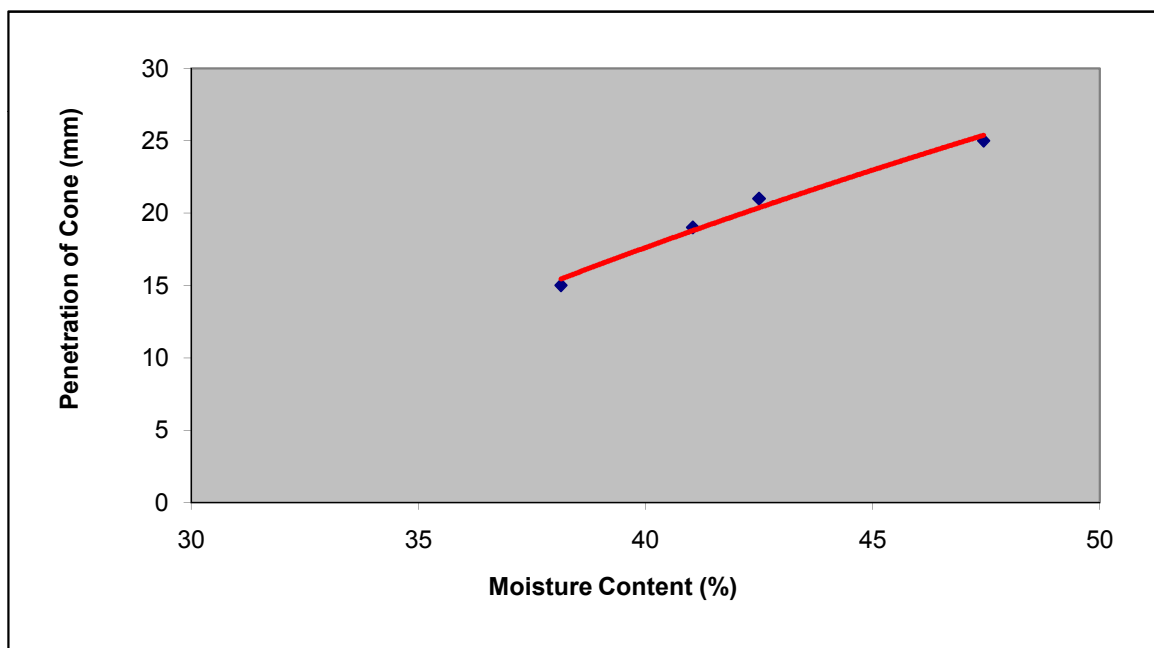
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** **42.58**

**Plastic Limit (%):** **11.62**

**Placticity Index (%):** **30.96**



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

#### Approved By:

*Chris Magro*

Chris Magro  
Laboratory Manager

## TEST CERTIFICATE

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revision and with written authorisation from Terracore Ltd

## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR244
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	ATT053
				Tested by:	LS
				Date of test:	10/19/2014

#### Test Information

Sample Ref No: 140930 - Soil  
 Sampling Location: BH G1  
 Sample Description: BH G1 Sample 4  
 Date of sampling: 9/30/2014  
 Type of Material: Soil

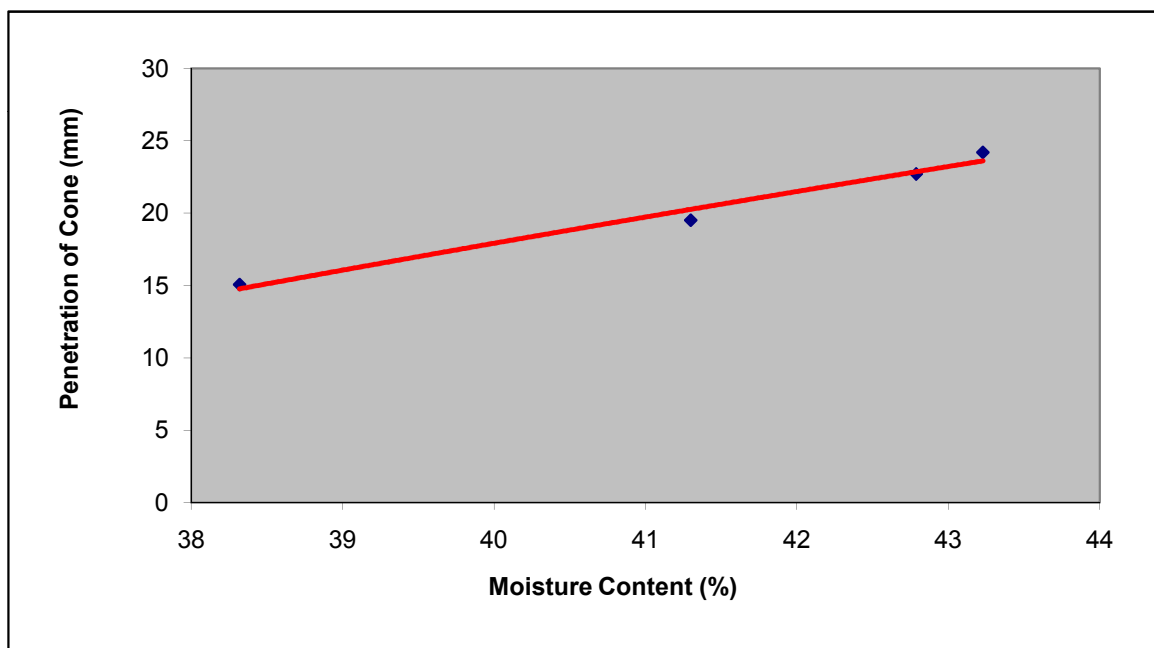
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** **41.39**

**Plastic Limit (%):** **12.12**

**Placticity Index (%):** **29.27**



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

#### Approved By:

*Chris Magro*

Chris Magro  
Laboratory Manager

## TEST CERTIFICATE

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revision and with written authorisation from Terracore Ltd

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Registration No.: C32227  
 Alfred Xerri  
 Filename: J2094\_Soil\_ATT\_TCR249\_ATT058.xls

## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR245
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	ATT054
				Tested by:	LS
				Date of test:	10/19/2014

#### Test Information

Sample Ref No: 140930 - Soil  
 Sampling Location: BH G1  
 Sample Description: BH G1 Sample 6  
 Date of sampling: 9/30/2014  
 Type of Material: Soil

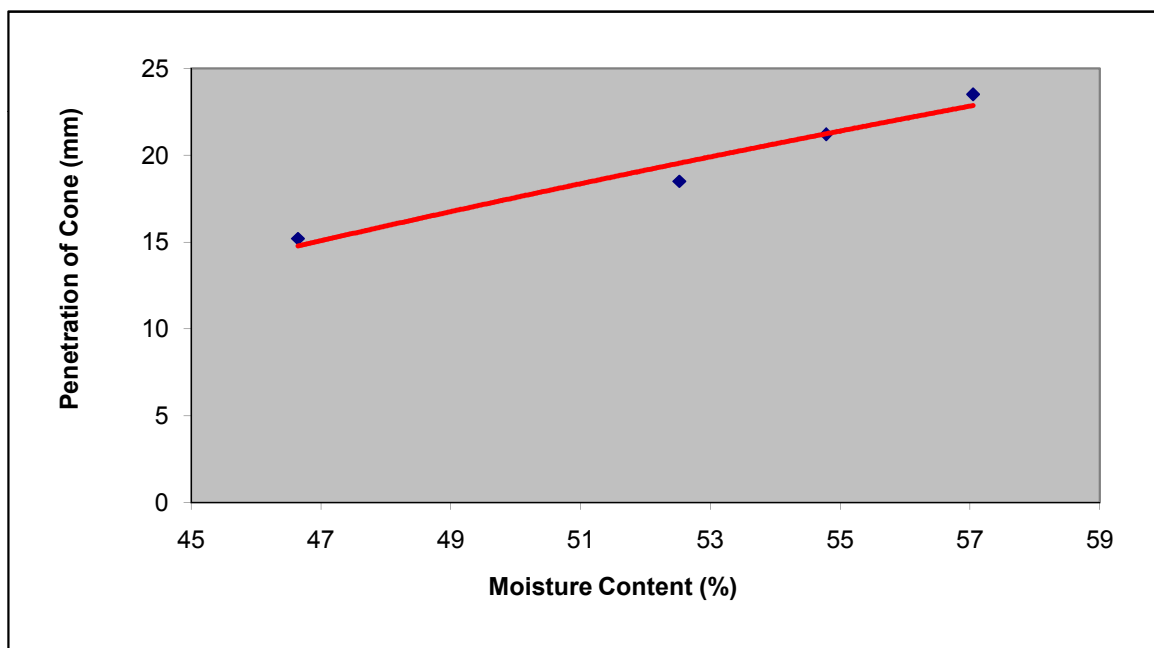
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** **53.53**

**Plastic Limit (%):** **11.76**

**Placticity Index (%):** **41.77**



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

#### Approved By:

*Chris Magro*

Chris Magro  
Laboratory Manager

## TEST CERTIFICATE

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Registration No.: C32227  
 Alfred Xerri  
 Filename: J2094\_Soil\_ATT\_TCR249\_ATT058.xls

## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name: J&P AVAX S.A.	Project: Onshore & Offshore	Certificate Nº: TCR246
Client address: 29, Maroussiou	Geotechnical	Date of certificate: 20/10/2014
Holandriou Street	Investigation	Client/Job Nº: J2094
151-25 Maroussi Greece	Location/Town: Delimara	Test Reference No: ATT055
Attn: Giorgos Rousopoulos		Tested by: LS
Client Tel Nº: 306972019434		Date of test: 10/19/2014

#### Test Information

Sample Ref No: 140930 - Soil  
 Sampling Location: BH G1  
 Sample Description: BH G1 Sample 7  
 Date of sampling: 9/30/2014  
 Type of Material: Soil

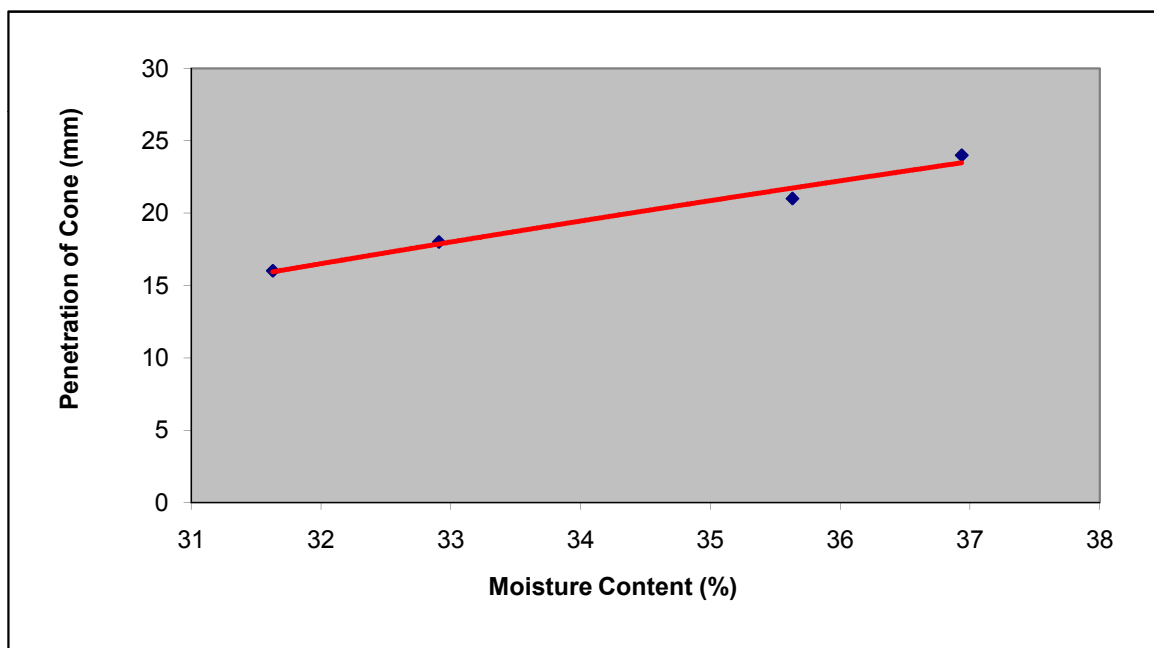
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** **34.61**

**Plastic Limit (%):** **7.15**

**Placticity Index (%):** **27.46**



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR247
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test Reference No:	ATT056
				Tested by:	LS
				Date of test:	10/19/2014

#### Test Information

Sample Ref No: 140930 - Soil  
 Sampling Location: BH G1  
 Sample Description: BH G1 Sample 8  
 Date of sampling: 9/30/2014  
 Type of Material: Soil

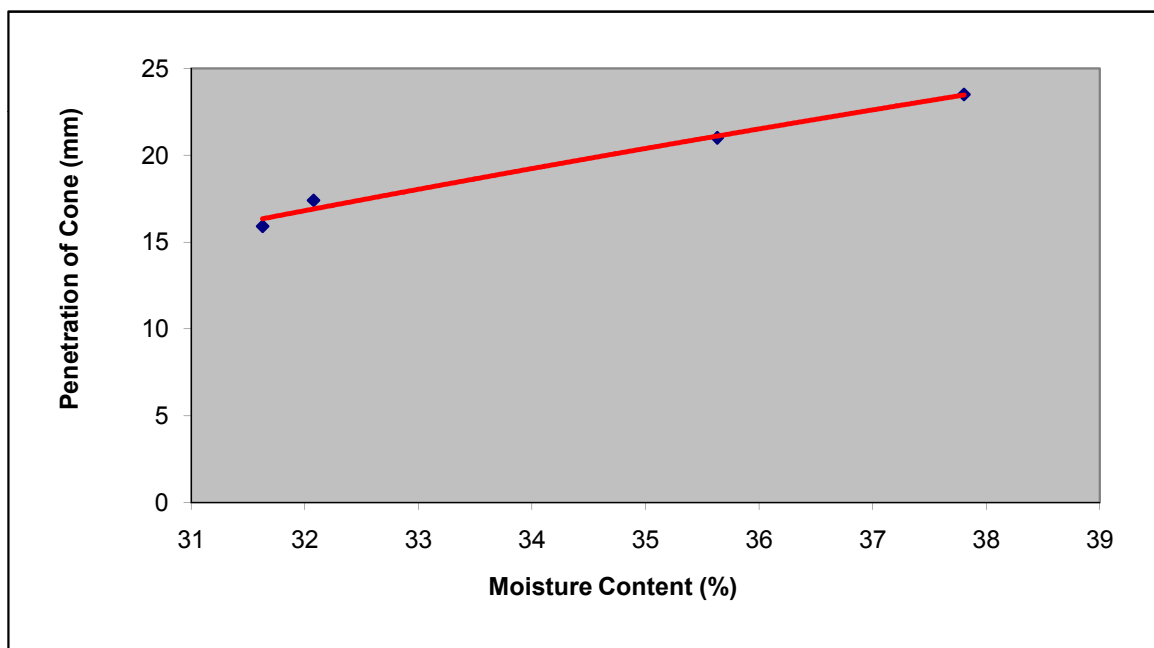
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** **34.94**

**Plastic Limit (%):** **8.35**

**Placticity Index (%):** **26.59**



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

#### Approved By:

*Chris Magro*

Chris Magro  
Laboratory Manager

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Registration No.: C32227  
 Alfred Xerri

Filename: J2094\_Soil\_ATT\_TCR249\_ATT058.xls

## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR248
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	ATT057
				Tested by:	LS
				Date of test:	10/19/2014

#### Test Information

Sample Ref No: 140930 - Soil  
 Sampling Location: BH G1  
 Sample Description: BH G1 Sample 11  
 Date of sampling: 9/30/2014  
 Type of Material: Soil

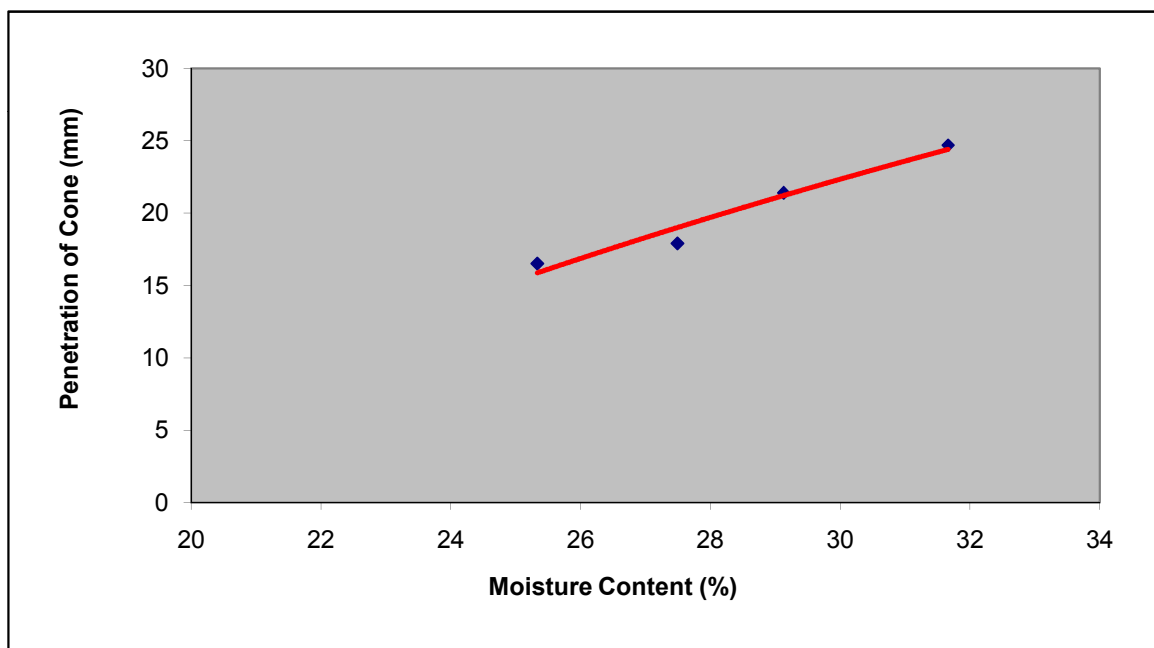
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** **28.49**

**Plastic Limit (%):** **10.93**

**Placticity Index (%):** **17.56**



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

*[Signature]*

Jessica Farrugia  
Quality Manager

#### Approved By:

*[Signature]*

Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR249
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test Reference No:	ATT058
				Tested by:	LS
				Date of test:	10/19/2014

#### Test Information

Sample Ref No: 140930 - Soil  
 Sampling Location: BH G1  
 Sample Description: BH G1 Sample 15  
 Date of sampling: 9/30/2014  
 Type of Material: Soil

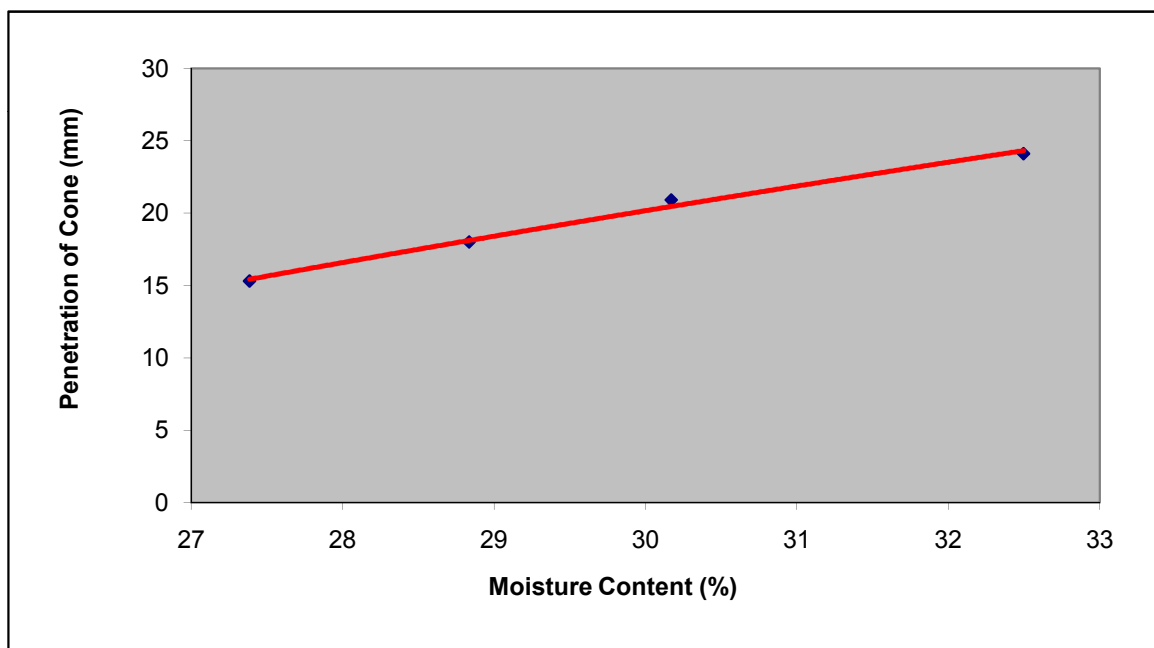
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 30.11

**Plastic Limit (%):** 8.49

**Placticity Index (%):** 21.62



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

*[Signature]*

Jessica Farrugia  
Quality Manager

#### Approved By:

*[Signature]*

Chris Magro  
Laboratory Manager

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Registration No.: C32227  
 Alfred Xerri

Filename: J2094\_Soil\_ATT\_TCR249\_ATT058.xls

## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR320
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Geotechnical Investigation Delimara	Date of certificate:	22/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	ATT059
				Tested by:	LS
				Date of test:	21/10/2014

#### Test Information

Sample Ref No: 141004 - Soil  
 Sampling Location: BH G3  
 Sample Description: BH G3 Sample 2  
 Date of sampling: 04/10/2014  
 Type of Material: Soil

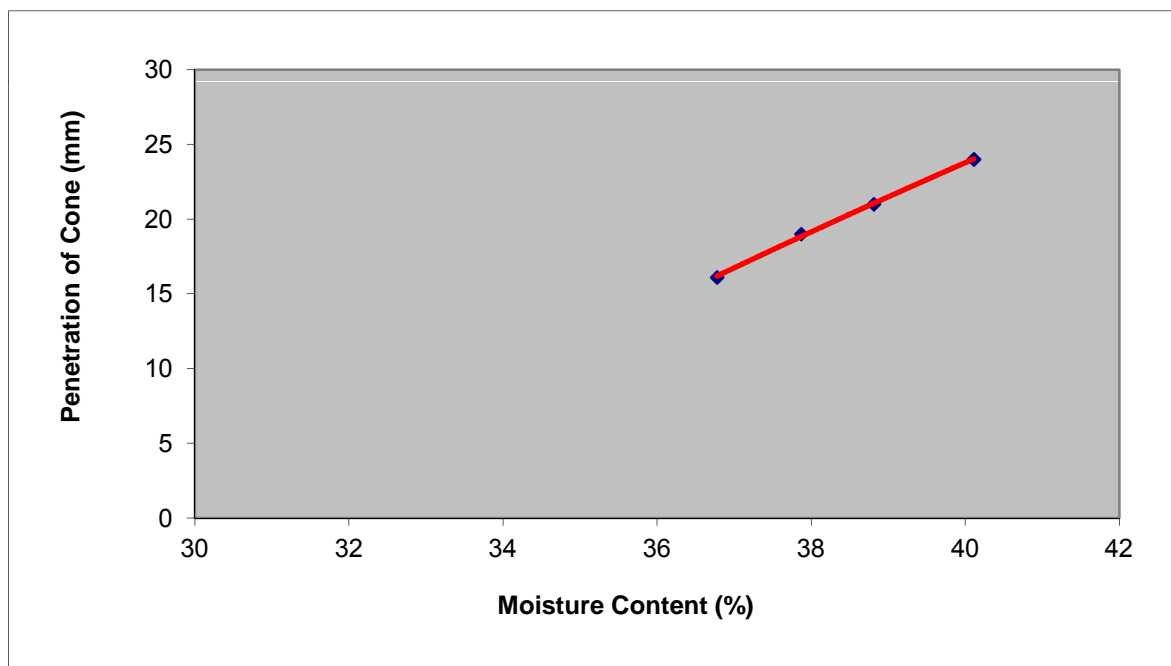
#### Results

Proportion received on 425µm sieve \_\_\_\_\_

**Liquid Limit (%):** 38.47

**Plastic Limit (%):** Non Plastic

**Placticity Index (%):** -



#### Deviation from Standard:

Nil

#### Remarks:

Plastic limit determination could not be obtained due to non plasticity in Material

#### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

#### Approved By:

*Chris Magro*

Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR321
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Geotechnical Investigation Delimara	Date of certificate:	22/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	ATT060
				Tested by:	LS
				Date of test:	21/10/2014

#### Test Information

Sample Ref No: 141004 - Soil  
Sampling Location: BH G3  
Sample Description: BH G3 Sample 3  
Date of sampling: 04/10/2014  
Type of Material: Soil

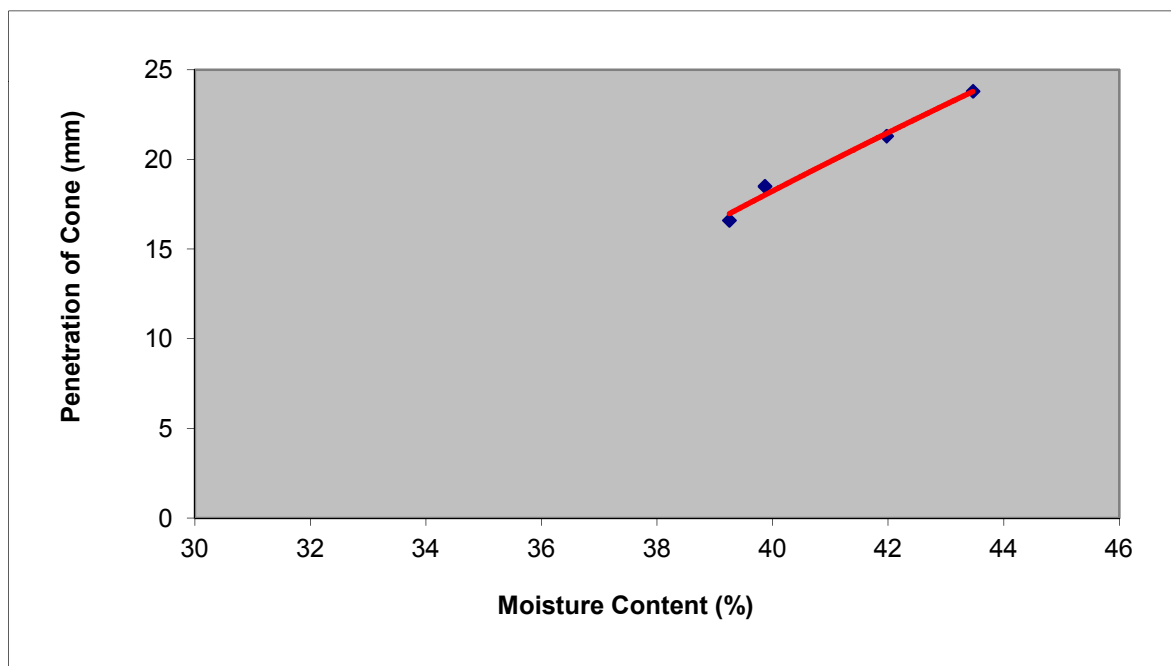
#### Results

Proportion received on 425µm sieve \_\_\_\_\_

**Liquid Limit (%):** 41.22

**Plastic Limit (%):** Non-Plastic

**Placticity Index (%):** -



#### Deviation from Standard:

Nil

#### Remarks:

Plastic limit determination could not be obtained due to non plasticity in Material

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR322
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	22/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test Reference No:	ATT061
				Tested by:	LS
				Date of test:	21/10/2014

#### Test Information

Sample Ref No: 141004 - Soil  
 Sampling Location: BH G3  
 Sample Description: BH G3 Sample 4  
 Date of sampling: 04/10/2014  
 Type of Material: Soil

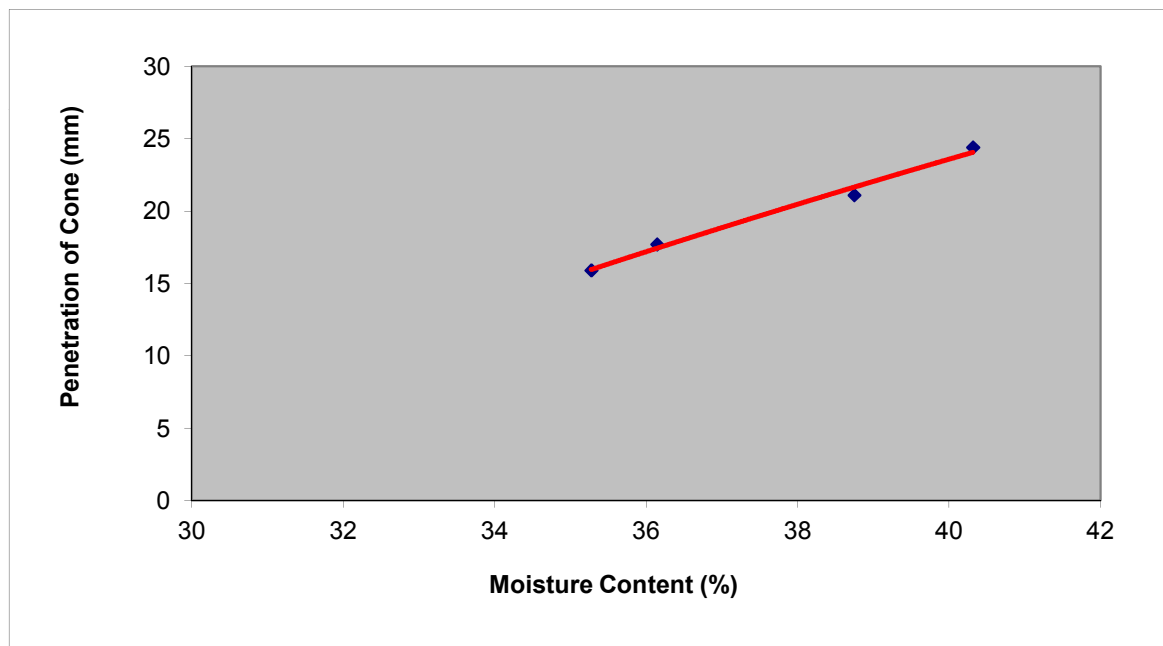
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 37.92

**Plastic Limit (%):** Non-Plastic

**Placticity Index (%):** -



#### Deviation from Standard:

Nil

#### Remarks:

Plastic limit determination could not be obtained due to non plasticity in Material

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Laboratory Manager

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Registration No.: C32227  
 Alfred Xerri

Filename: J2094\_Soil\_ATT\_TCR322\_ATT061.xls

## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR323
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Geotechnical Investigation Delimara	Date of certificate:	22/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	ATT062
				Tested by:	LS
				Date of test:	21/10/2014

#### Test Information

Sample Ref No: 141004 - Soil  
Sampling Location: BH G3  
Sample Description: BH G3 Sample 5  
Date of sampling: 04/10/2014  
Type of Material: Soil

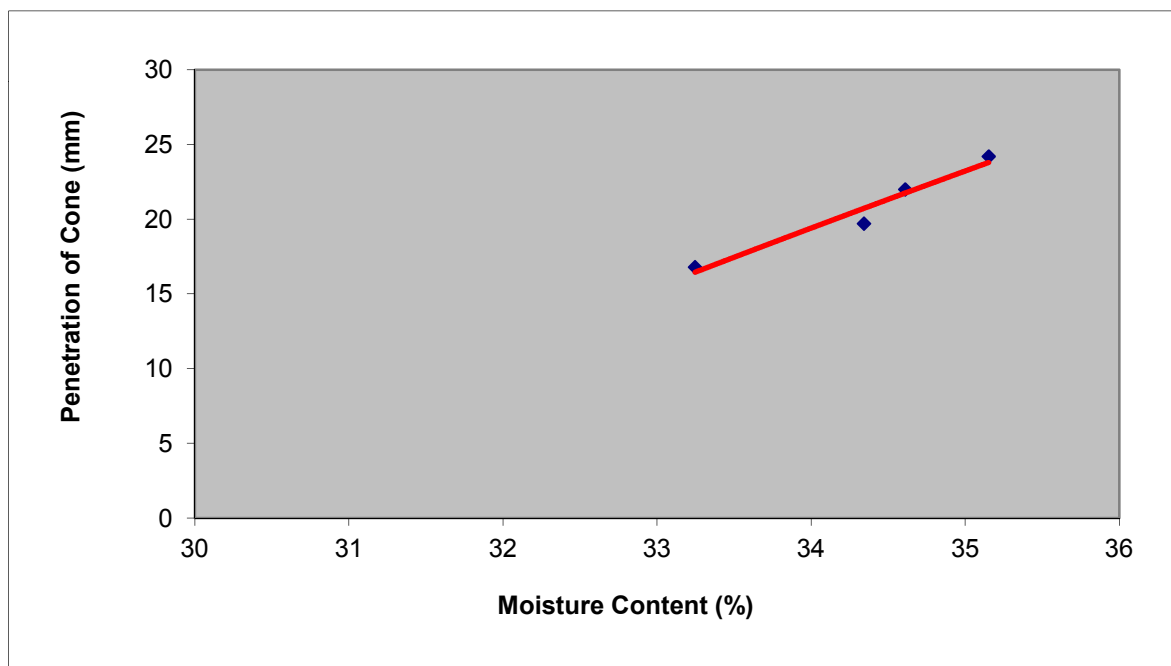
#### Results

Proportion received on 425µm sieve \_\_\_\_\_

**Liquid Limit (%):** 34.22

**Plastic Limit (%):** Non-Plastic

**Placticity Index (%):** -



#### Deviation from Standard:

Nil

#### Remarks:

Plastic limit determination could not be obtained due to non plasticity in Material

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR117
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Geotechnical Investigation Delimara	Date of certificate:	09/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	ATT027
				Tested by:	LS
				Date of test:	08/10/2014

#### Test Information

Sample Ref No: 140929 - Soil  
Sampling Location: BH G4  
Sample Description: BH G4 Sample 1  
Date of sampling: 29/09/2014  
Type of Material: Soil

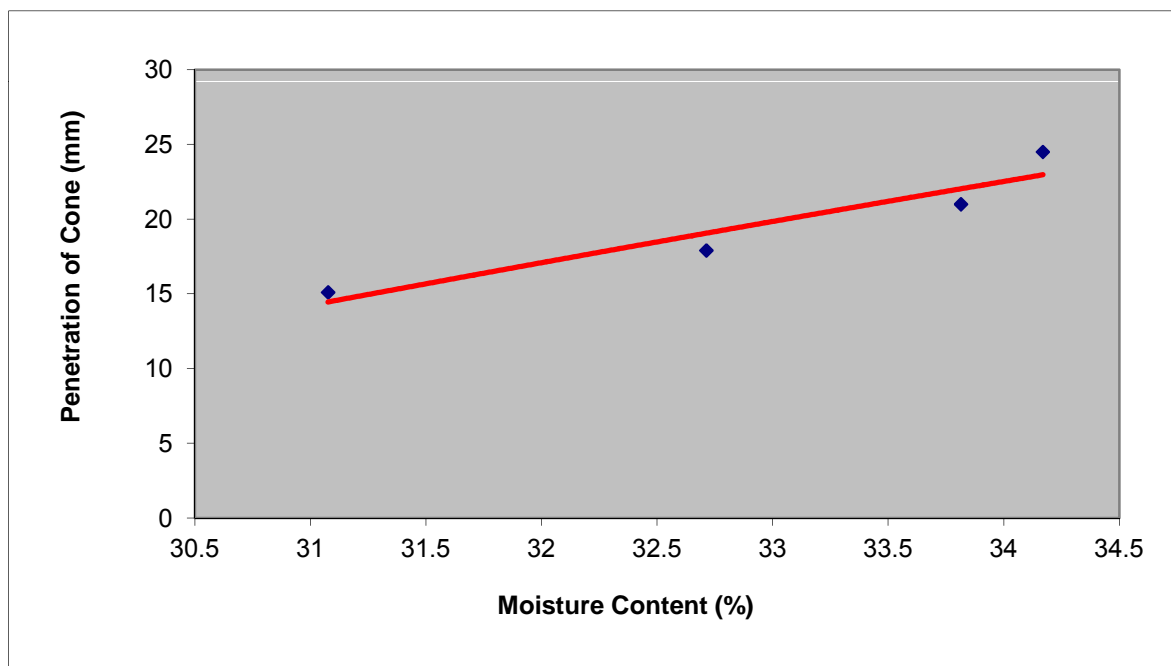
#### Results

Proportion received on 425µm sieve \_\_\_\_\_

Liquid Limit (%): 33.17

Plastic Limit (%): Non Plastic

Placticity Index (%): -



#### Deviation from Standard:

Nil

#### Remarks:

Plastic limit determination could not be obtained due to non plasticity in Material

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR118
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	09/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test Reference No:	ATT028
				Tested by:	LS
				Date of test:	08/10/2014

#### Test Information

Sample Ref No: 140929 - Soil  
 Sampling Location: BH G4  
 Sample Description: BH G4 Sample 3  
 Date of sampling: 29/09/2014  
 Type of Material: Soil

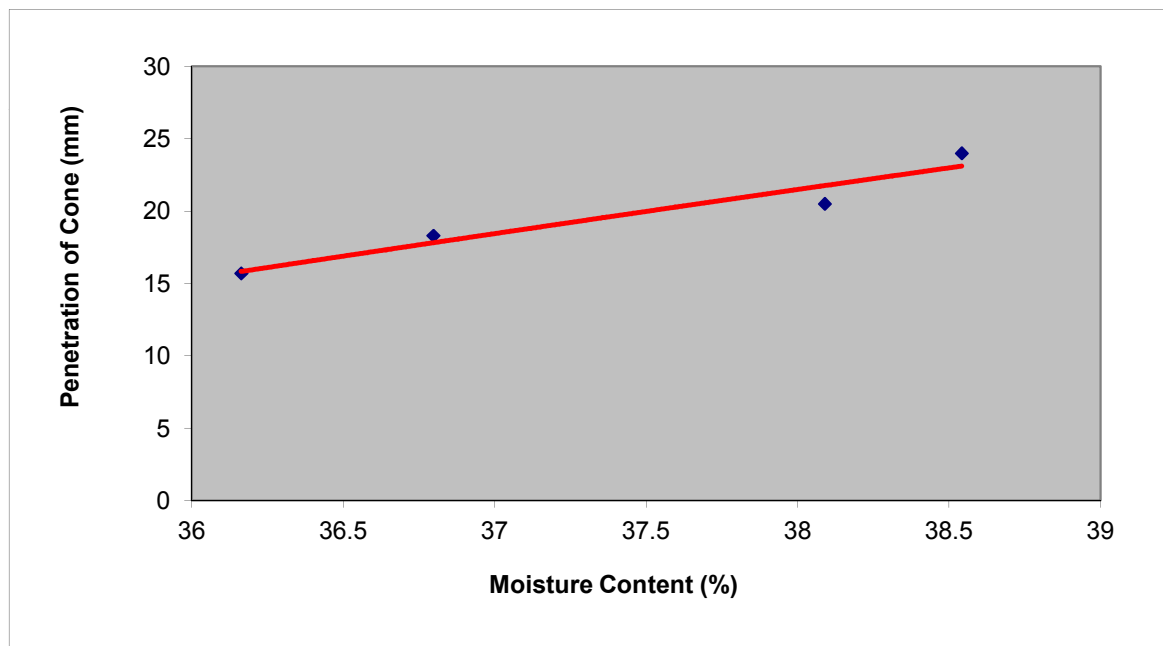
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 37.58

**Plastic Limit (%):** Non Plastic

**Placticity Index (%):** -



#### Deviation from Standard:

Nil

#### Remarks:

Plastic limit determination could not be obtained due to non plasticity in Material

#### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

#### Approved By:

*Chris Magro*

Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR119
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	09/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test Reference No:	ATT029
				Tested by:	LS
				Date of test:	08/10/2014

#### Test Information

Sample Ref No: 140929 - Soil  
 Sampling Location: BH G4  
 Sample Description: BH G4 Sample 5  
 Date of sampling: 29/09/2014  
 Type of Material: Soil

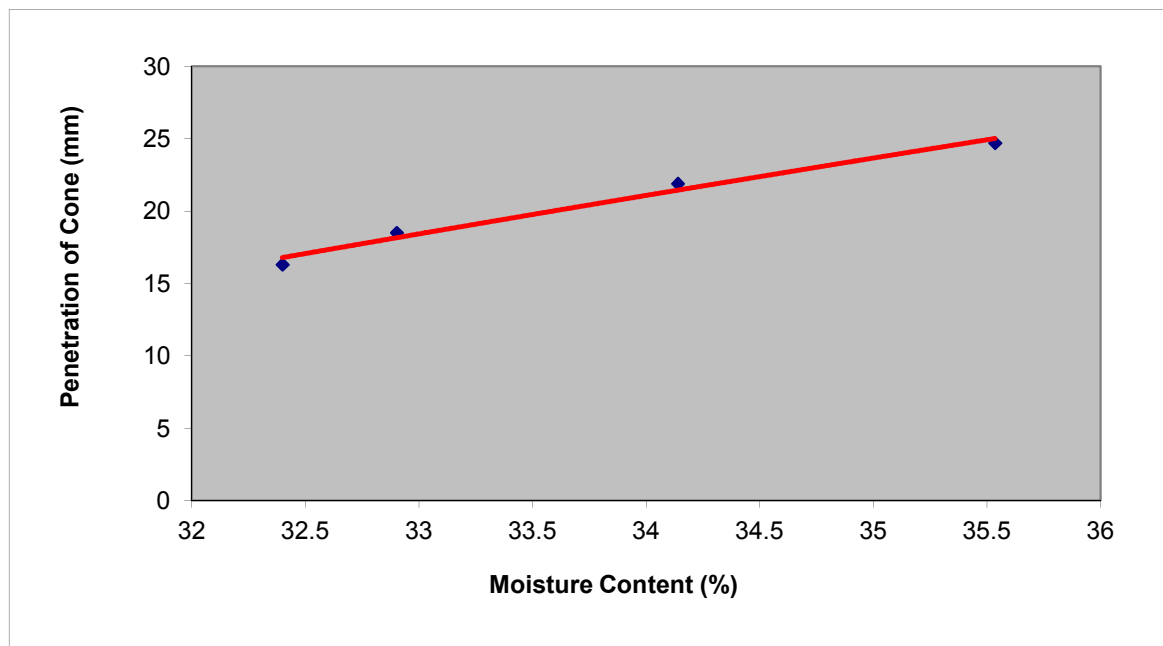
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 33.71

**Plastic Limit (%):** Non Plastic

**Placticity Index (%):** -



#### Deviation from Standard:

Nil

#### Remarks:

Plastic limit determination could not be obtained due to non plasticity in Material

#### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

#### Approved By:

*Chris Magro*

Chris Magro  
Laboratory Manager

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Registration No.: C32227  
 Alfred Xerri

Filename: J2094\_Soil\_ATT\_TCR119\_ATT029.xls

## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR120
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Geotechnical Investigation Delimara	Date of certificate:	09/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	ATT030
				Tested by:	LS
				Date of test:	08/10/2014

#### Test Information

Sample Ref No: 140929 - Soil  
Sampling Location: BH G4  
Sample Description: BH G4 Sample 6  
Date of sampling: 29/09/2014  
Type of Material: Soil

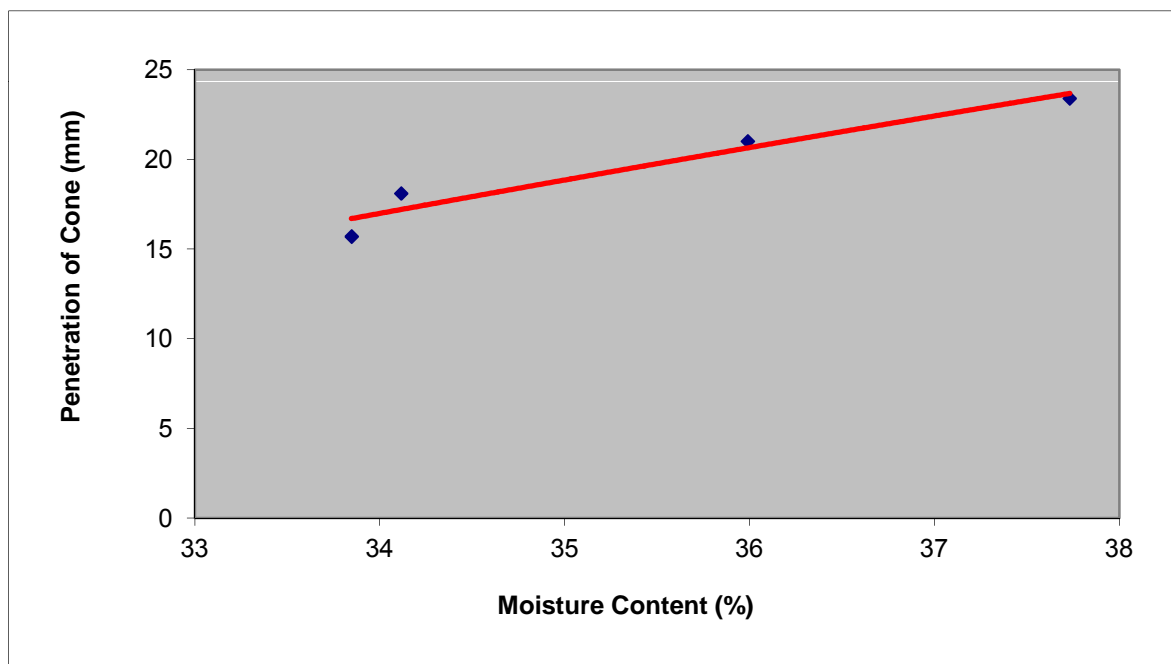
#### Results

Proportion received on 425µm sieve \_\_\_\_\_

Liquid Limit (%): 35.76

Plastic Limit (%): Non Plastic

Placticity Index (%): -



#### Deviation from Standard:

Nil

#### Remarks:

Plastic limit determination could not be obtained due to non plasticity in Material

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Laboratory Manager

## TEST CERTIFICATE

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## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR334
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	24/10/2014
Attn:	Giorgos Rousopoulos			Client/Job N°:	J2094
Client Tel N°:	306972019434			Test Reference No:	ATT069
				Tested by:	LS
				Date of test:	23/10/2014

#### Test Information

Sample Ref No: 141003 - Soil  
Sampling Location: BH G5  
Sample Description: BH G5 Sample 2  
Date of sampling: 03/10/2014  
Type of Material: Soil

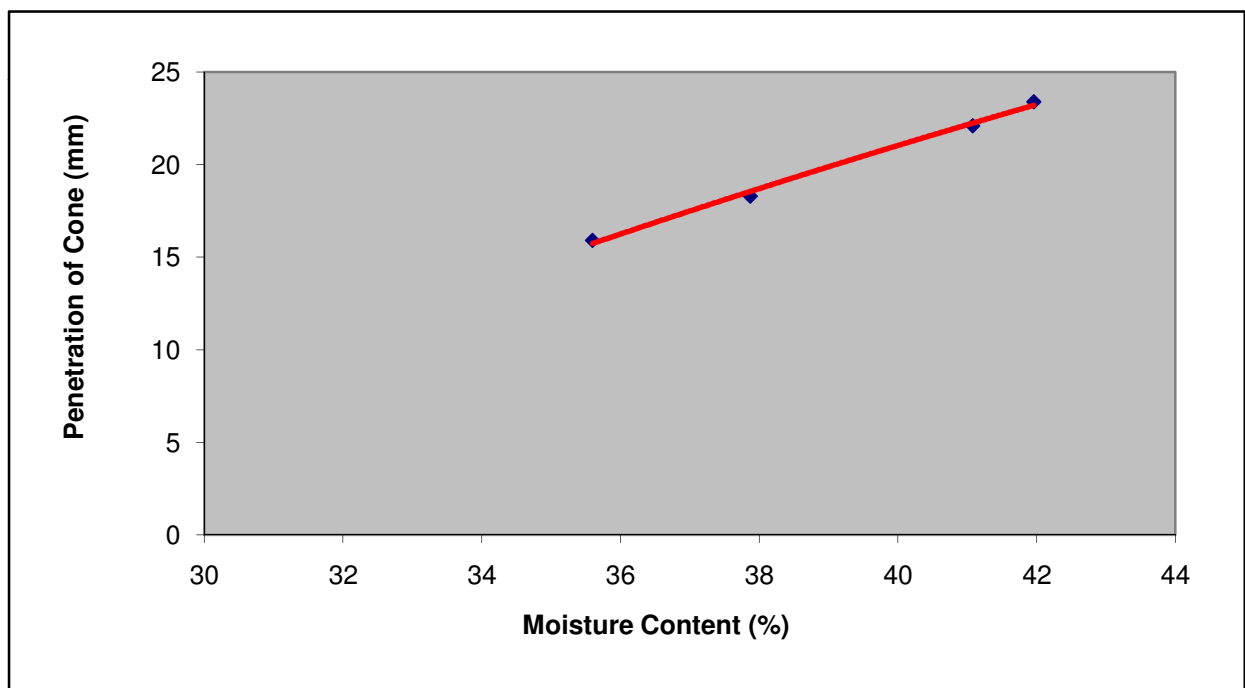
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 39.38

**Plastic Limit (%):** Non Plastic

**Placticity Index (%):** -



#### Deviation from Standard:

Nil

#### Remarks:

Plastic limit determination could not be obtained due to non plasticity in Material

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Laboratory Manager

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Registration No.: C32227

Alfred Xerri

Filename:

J2094\_Soil\_ATT\_TCR334\_ATT069.xls

## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR335
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	24/10/2014
Attn:	Giorgos Rousopoulos			Client/Job N°:	J2094
Client Tel N°:	306972019434			Test Reference No:	ATT070
				Tested by:	LS
				Date of test:	23/10/2014

#### Test Information

Sample Ref No: 141003 - Soil  
Sampling Location: BH G5  
Sample Description: BH G5 Sample 4  
Date of sampling: 03/10/2014  
Type of Material: Soil

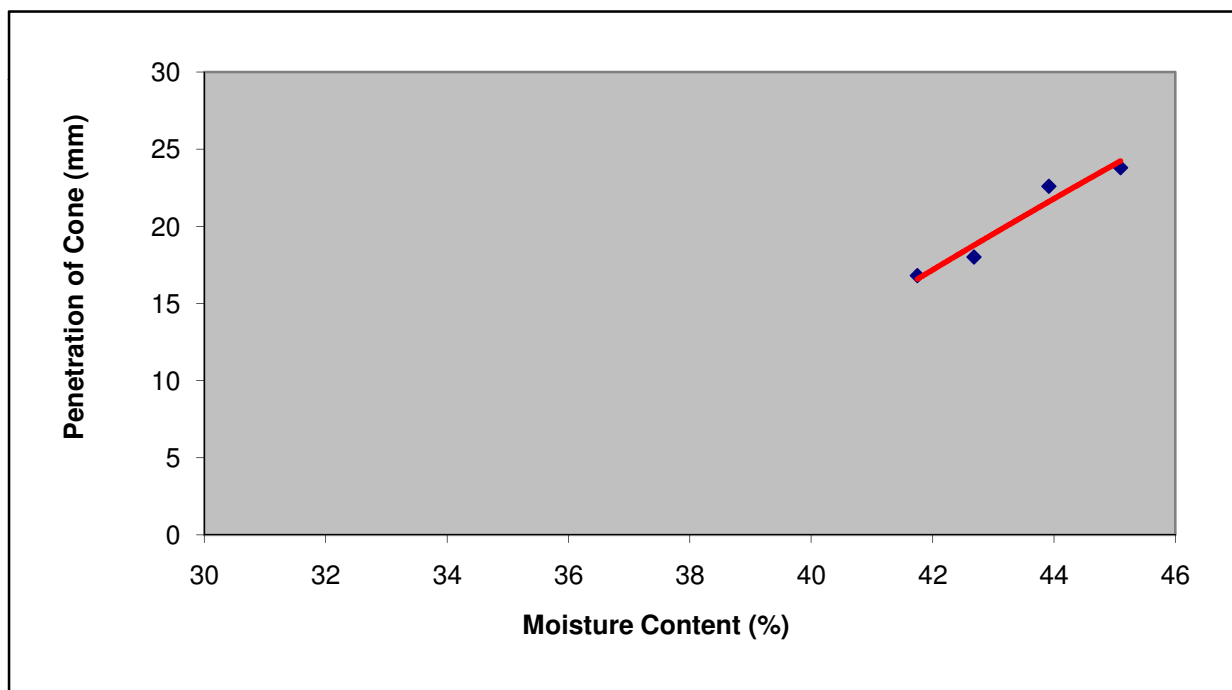
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** **43.33**

**Plastic Limit (%):** **10.97**

**Placticity Index (%):** **32.36**



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Laboratory Manager

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Registration No.: C32227

Directors: Alfred Xerri

Filename:

J2094\_Soil\_ATT\_TCR335\_ATT070.xls

## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR336
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	24/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test Reference No:	ATT071
				Tested by:	LS
				Date of test:	23/10/2014

#### Test Information

Sample Ref No: 141003 - Soil  
 Sampling Location: BH G5  
 Sample Description: BH G5 Sample 5  
 Date of sampling: 03/10/2014  
 Type of Material: Soil

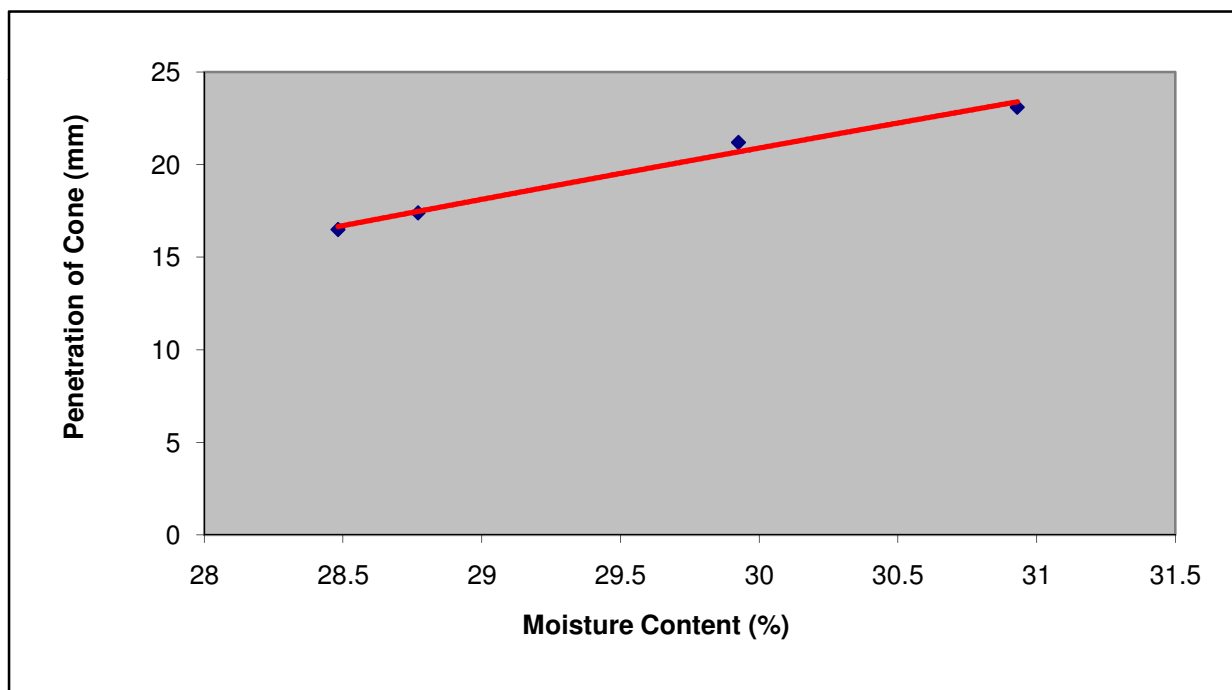
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 29.75

**Plastic Limit (%):** 9.12

**Placticity Index (%):** 32.36



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Laboratory Manager

## TEST CERTIFICATE

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E: info@terracoiremalta.com W: www.terracoiremalta.com

Registration No.: C32227

Directors: Alfred Xerri

Filename:

J2094\_Soil\_ATT\_TCR336\_ATT071.xls



## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR337
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Geotechnical Investigation Delimara	Date of certificate:	24/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	ATT072
				Tested by:	LS
				Date of test:	23/10/2014

#### Test Information

Sample Ref No: 141003 - Soil  
Sampling Location: BH G5  
Sample Description: BH G5 Sample 11  
Date of sampling: 03/10/2014  
Type of Material: Soil

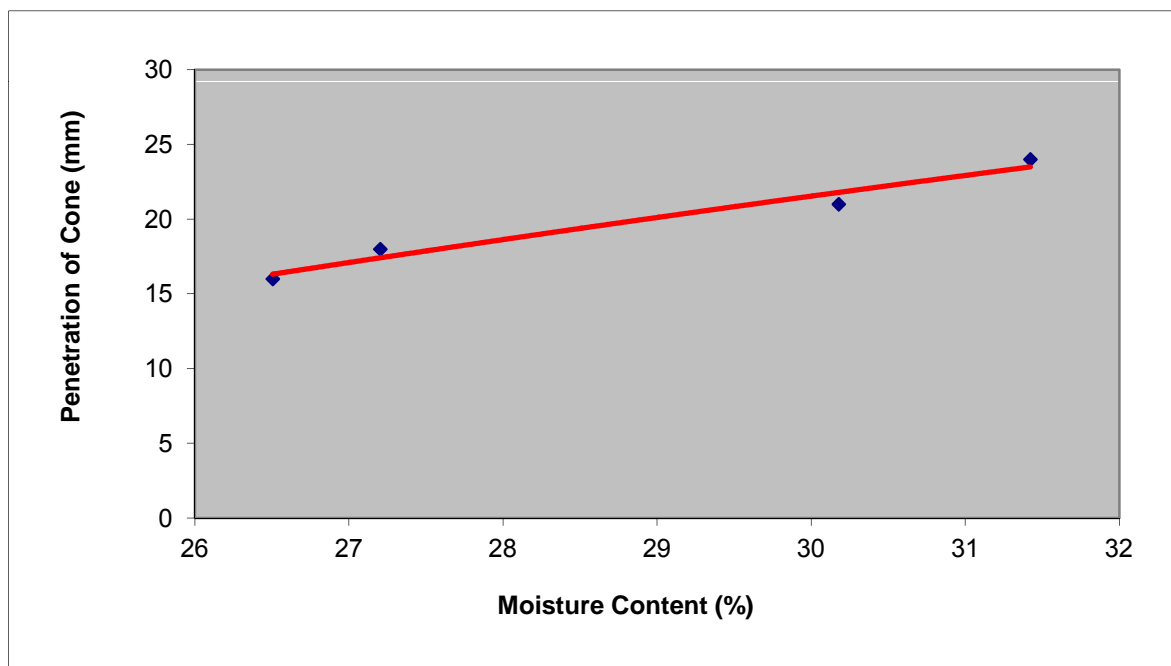
#### Results

Proportion received on 425µm sieve \_\_\_\_\_

**Liquid Limit (%):** 29.15

**Plastic Limit (%):** 7.33

**Placticity Index (%):** 21.81



Deviation from Standard:

Nil

Remarks:

Nil

Prepared By:

Jessica Farrugia  
Quality Manager

Approved By:

Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR338
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	24/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test Reference No:	ATT073
				Tested by:	LS
				Date of test:	23/10/2014

#### Test Information

Sample Ref No: 141003 - Soil  
 Sampling Location: BH G5  
 Sample Description: BH G5 Sample 13  
 Date of sampling: 03/10/2014  
 Type of Material: Soil

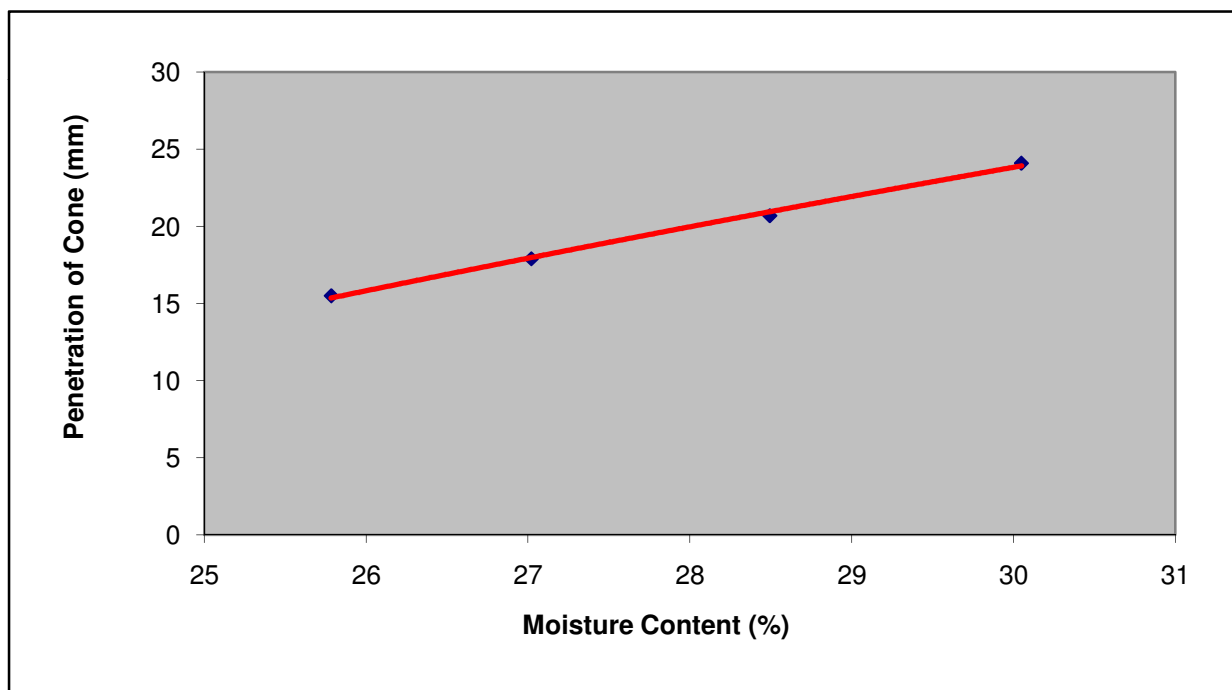
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 28.19

**Plastic Limit (%):** 7.63

**Placticity Index (%):** 20.56



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Laboratory Manager

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Registration No.: C32227

Alfred Xerri

Filename:

J2094\_Soil\_ATT\_TCR338\_ATT073.xls

## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR147
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	13/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test Reference No:	ATT040
				Tested by:	LS
				Date of test:	10/10/2014

#### Test Information

Sample Ref No: 140927 - Soil  
 Sampling Location: BH G6  
 Sample Description: BH G6 Sample 1  
 Date of sampling: 27/09/2014  
 Type of Material: Soil

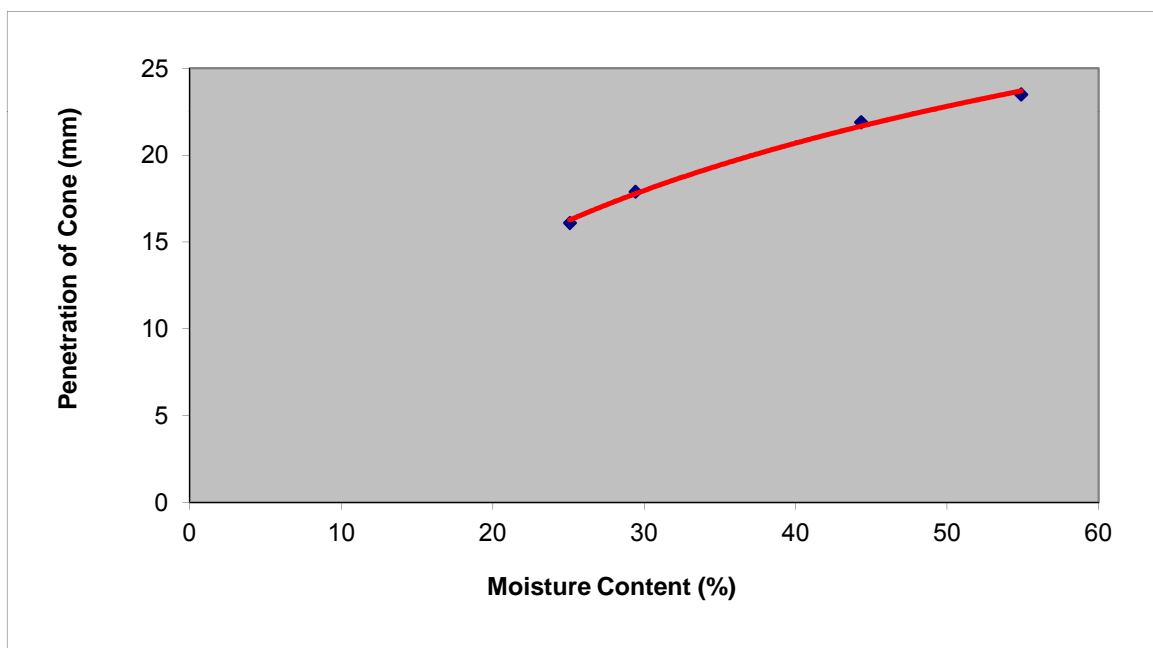
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 39.88

**Plastic Limit (%):** Non Plastic

**Placticity Index (%):** -



#### Deviation from Standard:

Nil

#### Remarks:

Plastic limit determination could not be obtained due to non plasticity in Material

#### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

#### Approved By:

*Chris Magro*

Chris Magro  
Laboratory Manager

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Registration No.: C32227

Alfred Xerri

Filename:

J2094\_Soil\_ATT\_TCR147\_ATT040.xls

## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR148
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	10/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test Reference No:	ATT041
				Tested by:	LS
				Date of test:	10/10/2014

#### Test Information

Sample Ref No: 140927 - Soil  
 Sampling Location: BH G6  
 Sample Description: BH G6 Sample 2/ 17m  
 Date of sampling: 27/09/2014  
 Type of Material: Soil

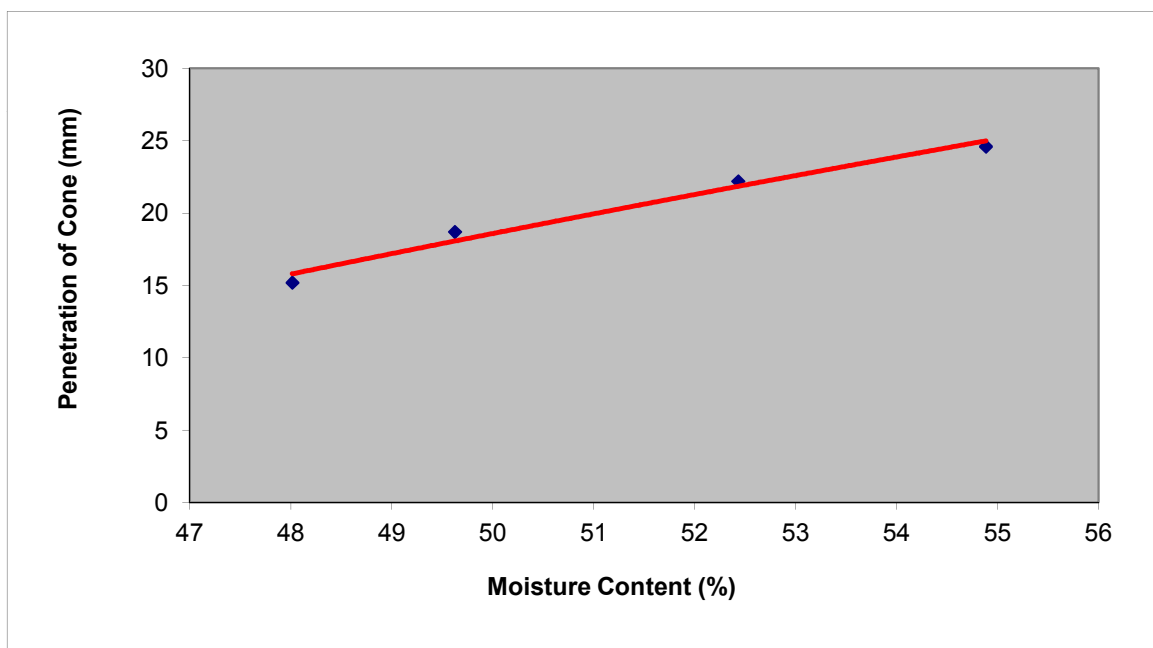
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 51.35

**Plastic Limit (%):** Non - Plastic

**Placticity Index (%):** -



#### Deviation from Standard:

Nil

#### Remarks:

Plastic limit determination could not be obtained due to non plasticity in Material

#### Prepared By:

*[Signature]*

Jessica Farrugia  
Quality Manager

#### Approved By:

*[Signature]*

Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR149
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	10/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	ATT042
				Tested by:	LS
				Date of test:	10/10/2014

#### Test Information

Sample Ref No: 140927 - Soil  
 Sampling Location: BH G6  
 Sample Description: BH G6 Sample 3/ 18m  
 Date of sampling: 27/09/2014  
 Type of Material: Soil

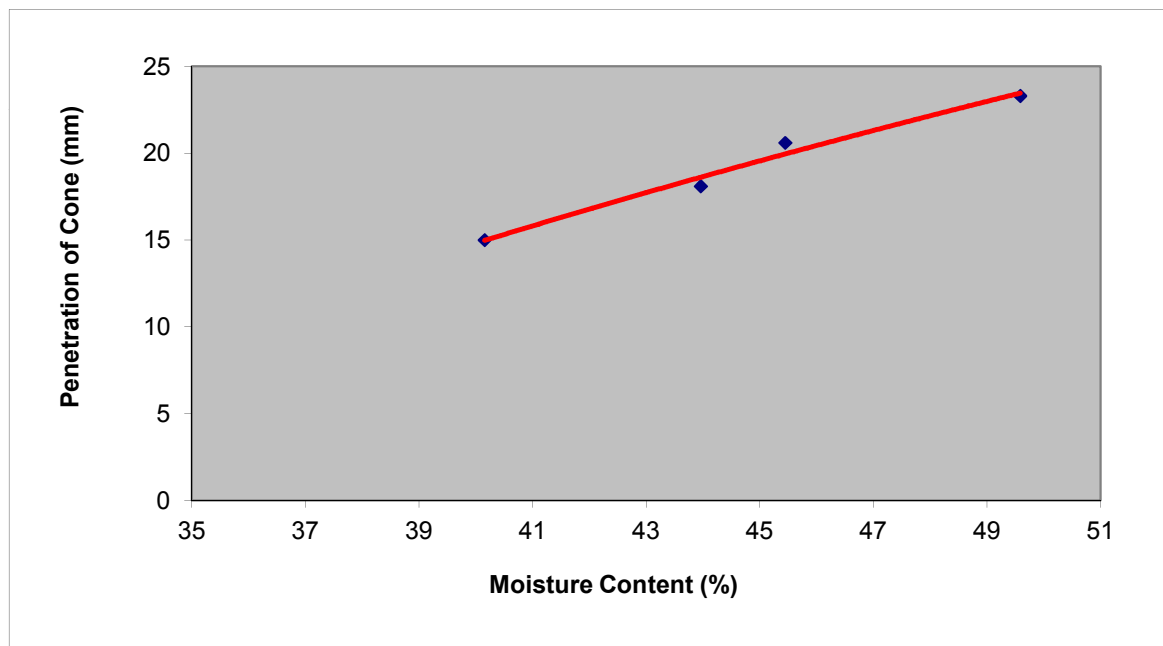
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 45.83

**Plastic Limit (%):** 11.95

**Placticity Index (%):** 33.88



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

*[Signature]*

Jessica Farrugia  
Quality Manager

#### Approved By:

*[Signature]*

Chris Magro  
Laboratory Manager

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Registration No.: C32227  
 Alfred Xerri

Filename: J2094\_Soil\_ATT\_TCR149\_ATT042.xls



## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR150
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	13/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	ATT043
				Tested by:	LS
				Date of test:	10/10/2014

#### Test Information

Sample Ref No: 140927 - Soil  
 Sampling Location: BH G6  
 Sample Description: BH G6 Sample 5/ 20m  
 Date of sampling: 27/09/2014  
 Type of Material: Soil

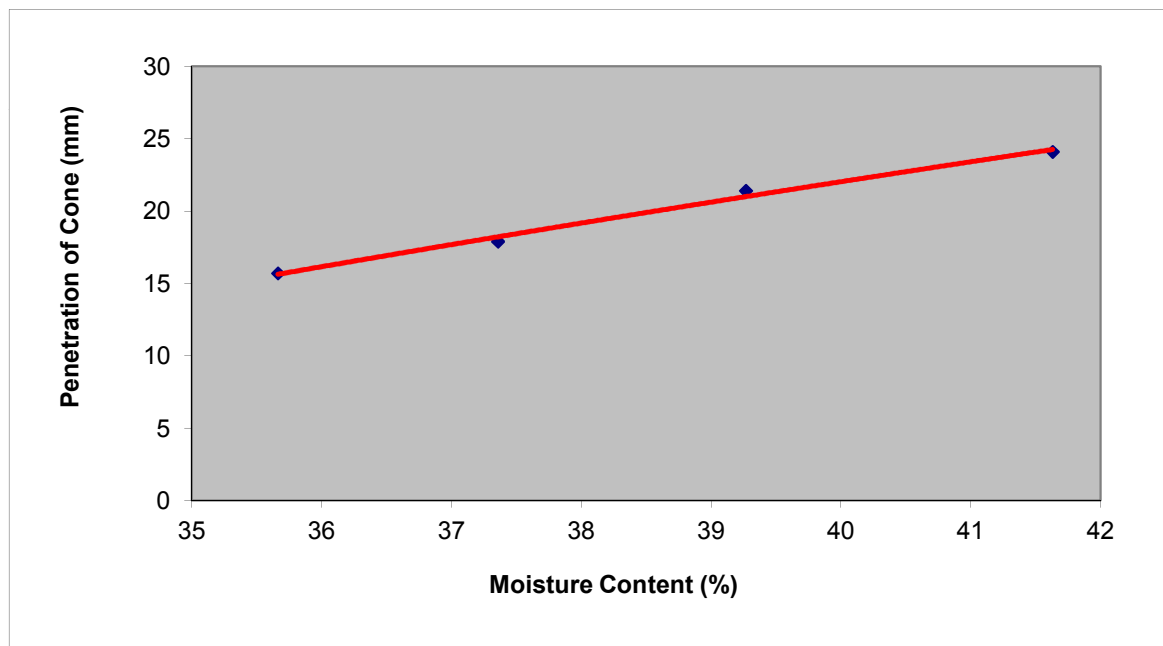
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** **38.81**

**Plastic Limit (%):** **11.14**

**Placticity Index (%):** **27.68**



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Laboratory Manager

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Registration No.: C32227  
 Alfred Xerri

Filename: J2094\_Soil\_ATT\_TCR150\_ATT043.xls

## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR151
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	13/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	ATT044
				Tested by:	LS
				Date of test:	10/10/2014

#### Test Information

Sample Ref No: 140927 - Soil  
 Sampling Location: BH G6  
 Sample Description: BH G6 Sample 8/ 23m  
 Date of sampling: 27/09/2014  
 Type of Material: Soil

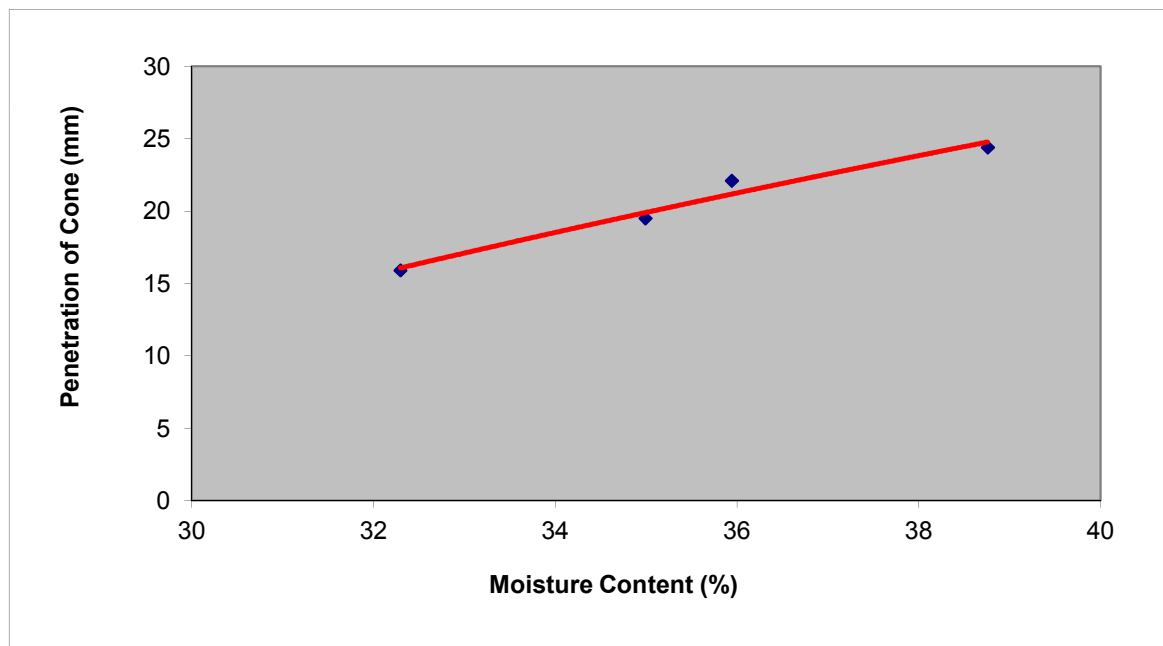
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 35.34

**Plastic Limit (%):** 8.11

**Placticity Index (%):** 27.23



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR152
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	10/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	ATT045
				Tested by:	LS
				Date of test:	10/10/2014

#### Test Information

Sample Ref No: 140927 - Soil  
 Sampling Location: BH G6  
 Sample Description: BH G6 Sample 9/ 24m  
 Date of sampling: 27/09/2014  
 Type of Material: Soil

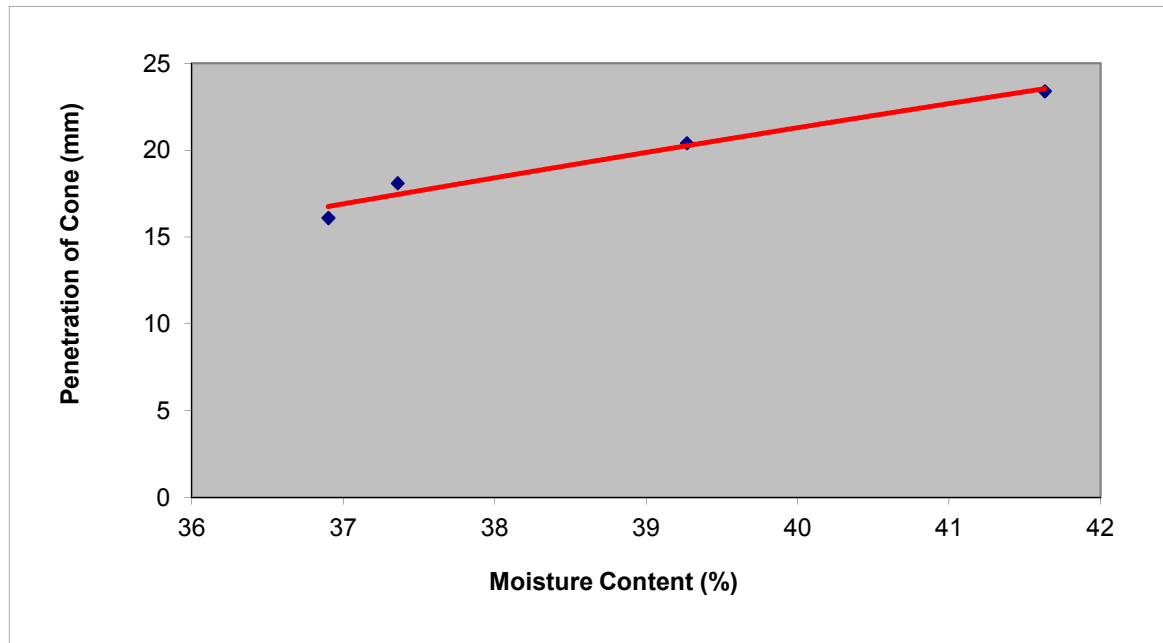
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 39.25

**Plastic Limit (%):** 9.76

**Placticity Index (%):** 29.49



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

*[Signature]*

Jessica Farrugia  
Quality Manager

#### Approved By:

*[Signature]*

Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR153
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	13/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	ATT046
				Tested by:	LS
				Date of test:	10/10/2014

#### Test Information

Sample Ref No: 140927 - Soil  
 Sampling Location: BH G6  
 Sample Description: BH G6 Sample 12/ 27m  
 Date of sampling: 27/09/2014  
 Type of Material: Soil

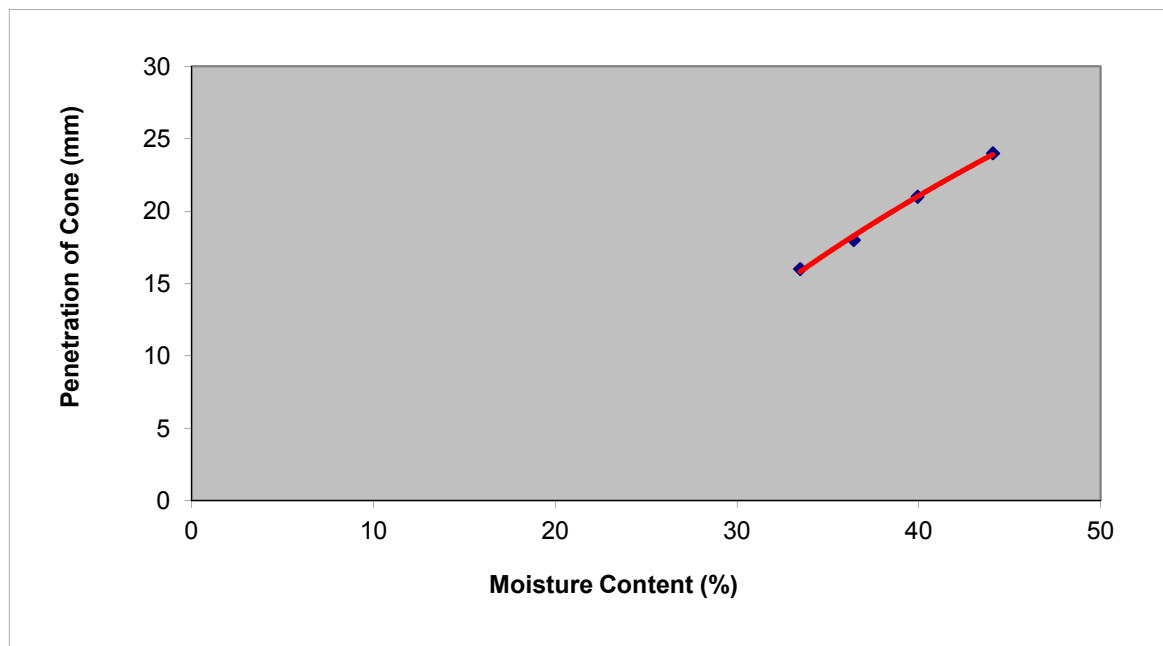
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 39.10

**Plastic Limit (%):** 11.84

**Placticity Index (%):** 27.26



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Laboratory Manager

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Registration No.: C32227  
 Alfred Xerri

Filename: J2094\_Soil\_ATT\_TCR153\_ATT046.xls

## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR154
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	13/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	ATT047
				Tested by:	LS
				Date of test:	10/10/2014

#### Test Information

Sample Ref No: 140927 - Soil  
 Sampling Location: BH G6  
 Sample Description: BH G6 Sample 13/ 28m  
 Date of sampling: 27/09/2014  
 Type of Material: Soil

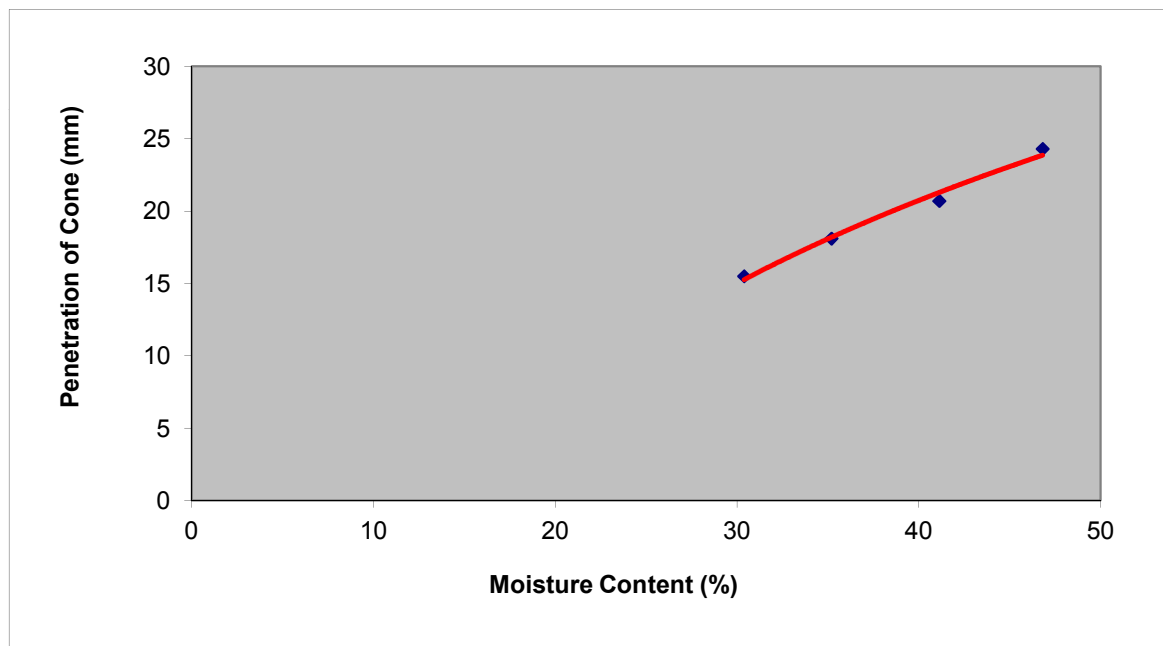
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 39.55

**Plastic Limit (%):** 11.69

**Placticity Index (%):** 27.86



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

*[Signature]*

Jessica Farrugia  
Quality Manager

#### Approved By:

*[Signature]*

Chris Magro  
Laboratory Manager

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Registration No.: C32227

Alfred Xerri

Filename:

J2094\_Soil\_ATT\_TCR154\_ATT047.xls



## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR155
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	10/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	ATT048
				Tested by:	LS
				Date of test:	10/10/2014

#### Test Information

Sample Ref No: 140927 - Soil  
 Sampling Location: BH G6  
 Sample Description: BH G6 Sample 14/ 29m  
 Date of sampling: 27/09/2014  
 Type of Material: Soil

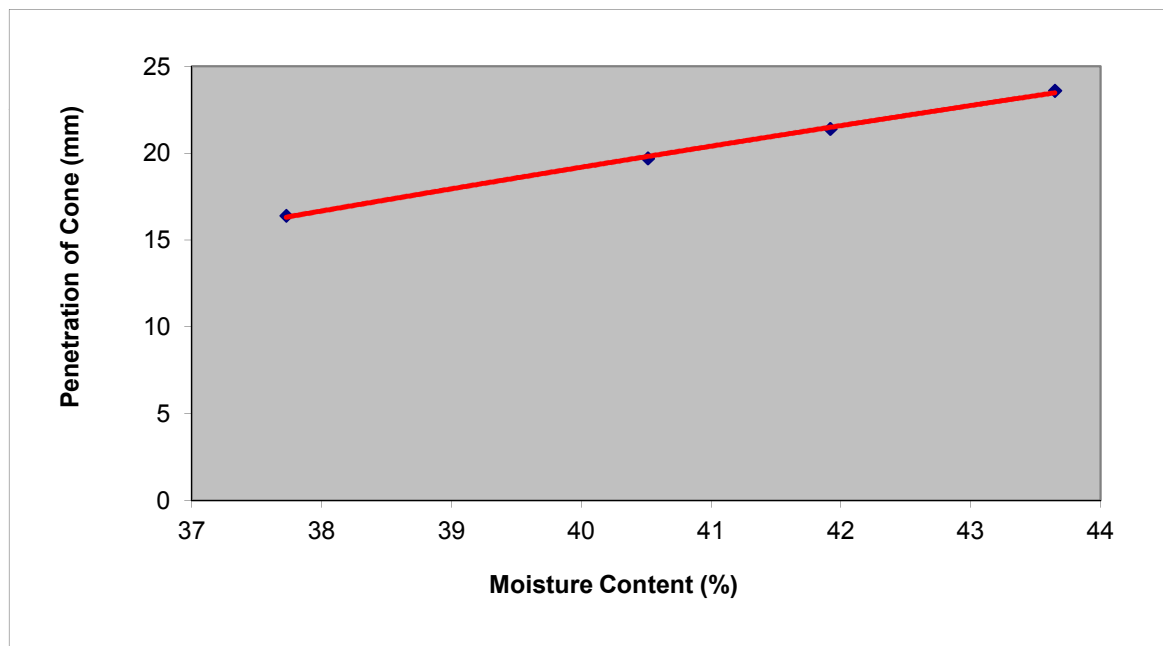
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 40.87

**Plastic Limit (%):** 8.27

**Placticity Index (%):** 32.60



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR132
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	10/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test Reference No:	ATT031
				Tested by:	LS
				Date of test:	10/10/2014

#### Test Information

Sample Ref No: 140926 - Soil  
 Sampling Location: BH G7  
 Sample Description: BH G7 Sample 2  
 Date of sampling: 26/09/2014  
 Type of Material: Soil

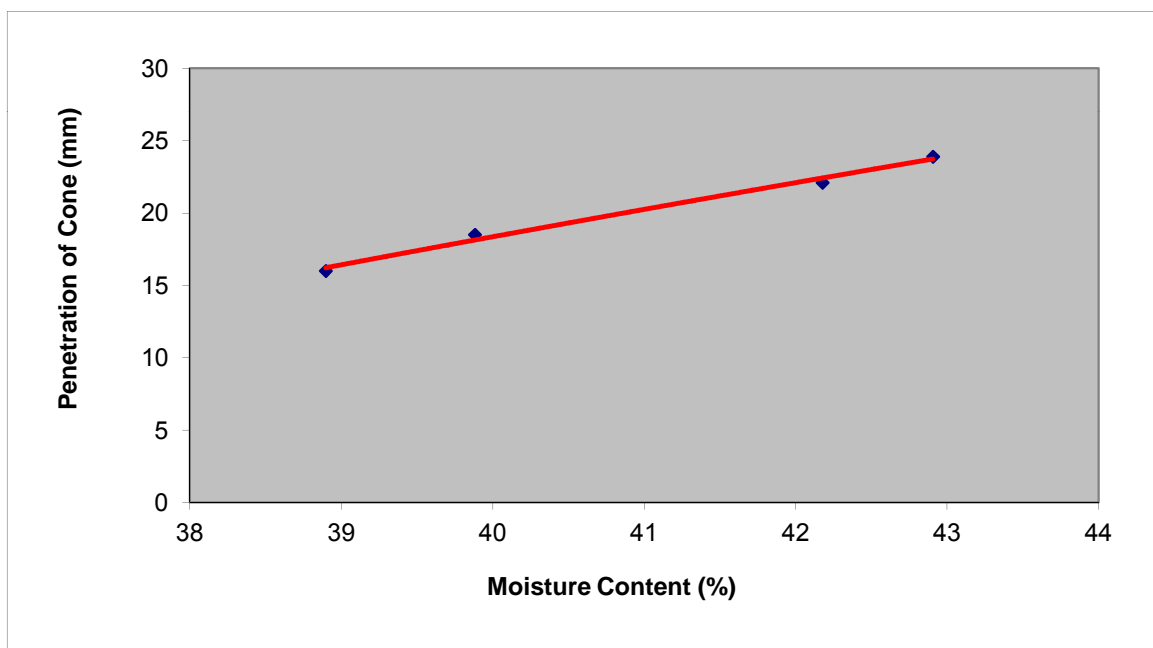
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 41.03

**Plastic Limit (%):** Non Plastic

**Placticity Index (%):** -



#### Deviation from Standard:

Nil

#### Remarks:

Plastic limit determination could not be obtained due to non plasticity in Material

#### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

#### Approved By:

*Chris Magro*

Chris Magro  
Laboratory Manager

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Registration No.: C32227  
 Alfred Xerri  
 Filename: J2094\_Soil\_ATT\_TCR132\_ATT031.xls

## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR133
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	10/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test Reference No:	ATT032
				Tested by:	LS
				Date of test:	10/10/2014

#### Test Information

Sample Ref No: 140926 - Soil  
 Sampling Location: BH G7  
 Sample Description: BH G7 Sample 5  
 Date of sampling: 26/09/2014  
 Type of Material: Soil

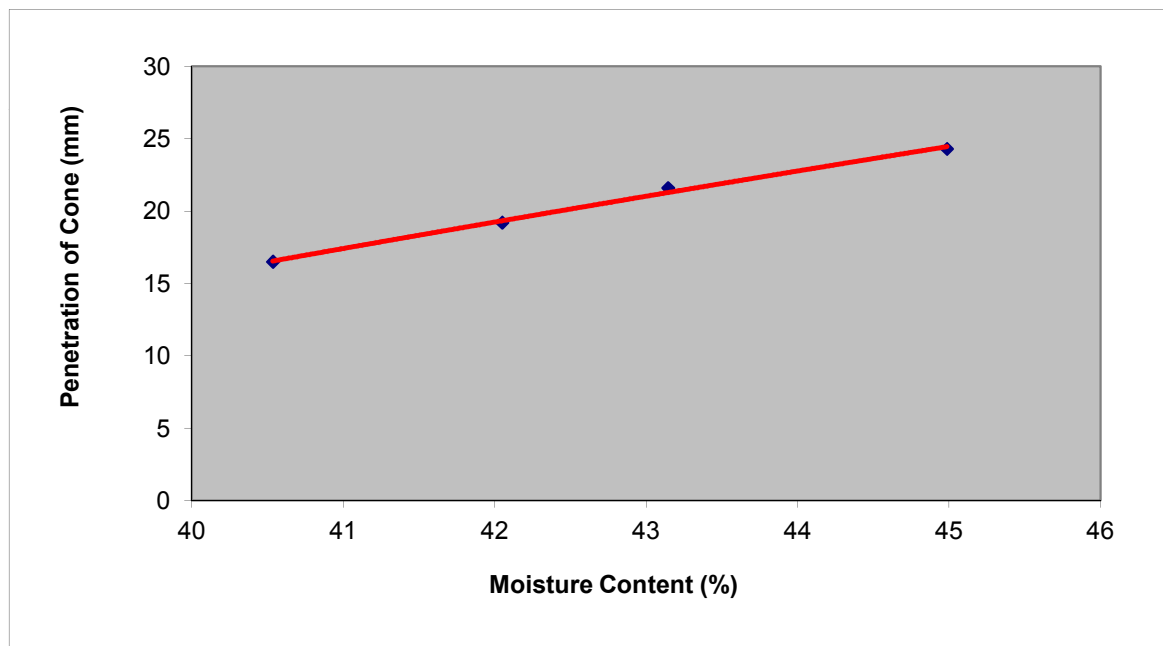
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 42.57

**Plastic Limit (%):** Non - Plastic

**Placticity Index (%):** -



#### Deviation from Standard:

Nil

#### Remarks:

Plastic limit determination could not be obtained due to non plasticity in Material

#### Prepared By:

*[Signature]*

Jessica Farrugia  
Quality Manager

#### Approved By:

*[Signature]*

Chris Magro  
Laboratory Manager

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### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

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Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	10/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test Reference No:	ATT032
				Tested by:	LS
				Date of test:	10/10/2014

#### Test Information

Sample Ref No: 140926 - Soil  
 Sampling Location: BH G7  
 Sample Description: BH G7 Sample 5  
 Date of sampling: 26/09/2014  
 Type of Material: Soil

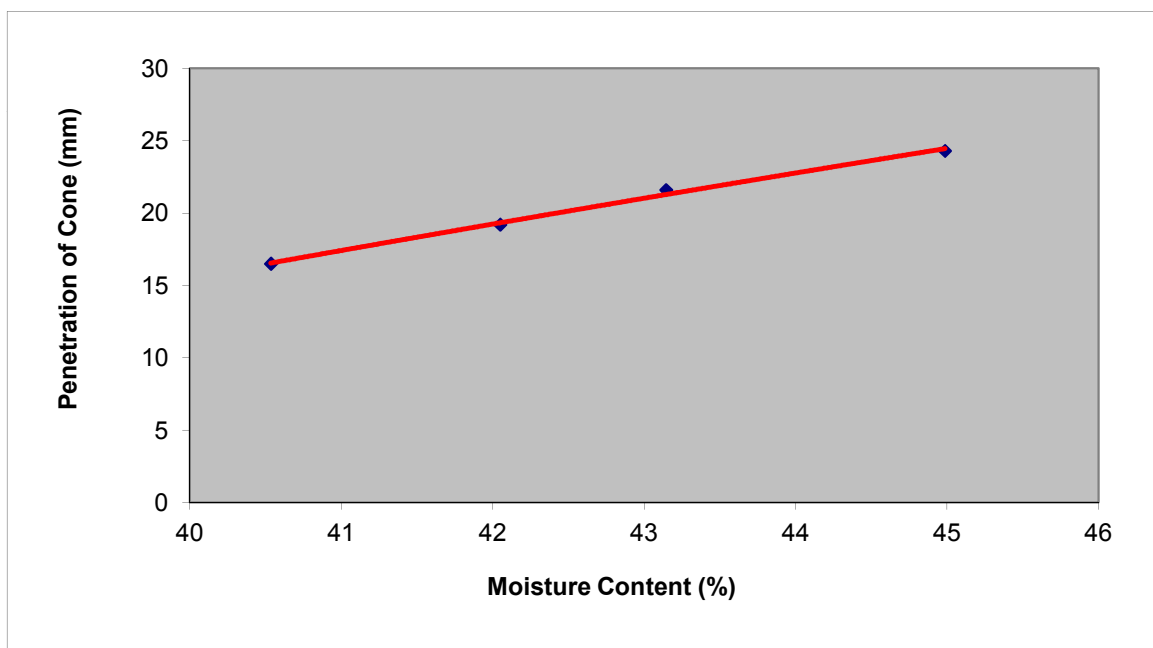
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 42.57

**Plastic Limit (%):** Non - Plastic

**Placticity Index (%):** -



#### Deviation from Standard:

Nil

#### Remarks:

Plastic limit determination could not be obtained due to non plasticity in Material

#### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

#### Approved By:

*Chris Magro*

Chris Magro  
Laboratory Manager

# TEST CERTIFICATE

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## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR134
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Geotechnical Investigation		Date of certificate:	10/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test Reference No:	ATT033
				Tested by:	LS
				Date of test:	10/10/2014

#### Test Information

Sample Ref No: 140926 - Soil  
 Sampling Location: BH G7  
 Sample Description: BH G7 Sample 7  
 Date of sampling: 26/09/2014  
 Type of Material: Soil

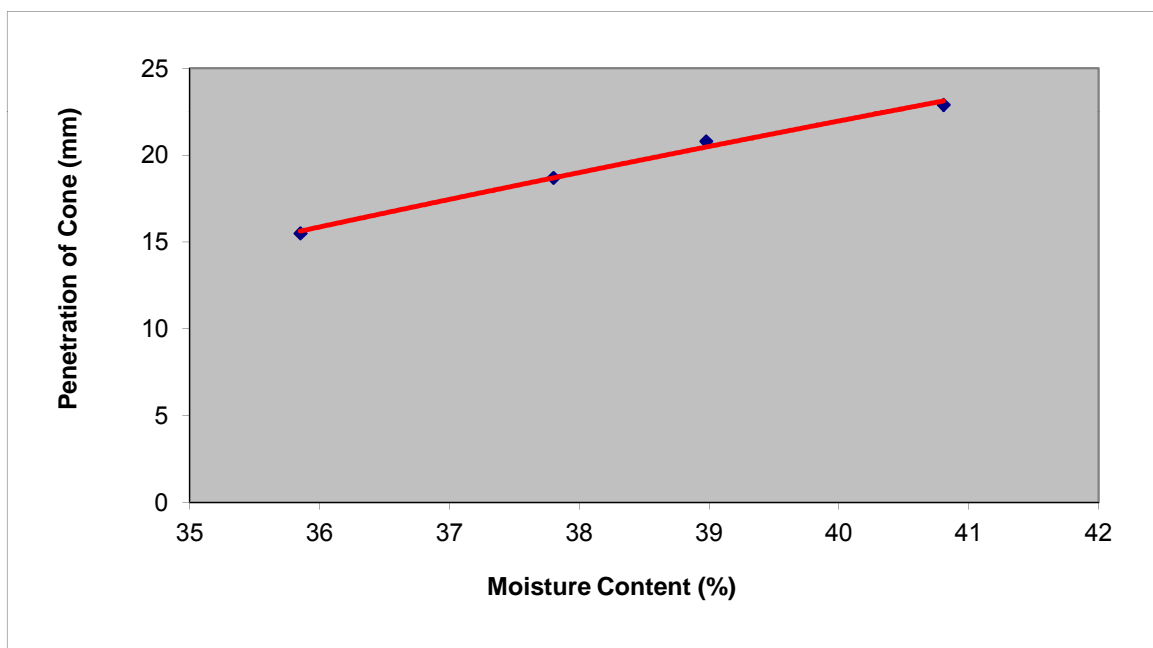
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 38.81

**Plastic Limit (%):** Non Plastic

**Placticity Index (%):** -



#### Deviation from Standard:

Nil

#### Remarks:

Plastic limit determination could not be obtained due to non plasticity in Material

#### Prepared By:

*[Signature]*

Jessica Farrugia  
Quality Manager

#### Approved By:

*[Signature]*

Chris Magro  
Laboratory Manager

# TEST CERTIFICATE

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E: info@terracoemalta.com W: www.terracoemalta.com

Registration No.: C32227

Alfred Xerri

Filename:

J2094\_Soil\_ATT\_TCR134\_ATT033.xls



## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR135
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	10/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test Reference No:	ATT034
				Tested by:	LS
				Date of test:	10/10/2014

#### Test Information

Sample Ref No: 140926 - Soil  
 Sampling Location: BH G7  
 Sample Description: BH G7 Sample 9  
 Date of sampling: 26/09/2014  
 Type of Material: Soil

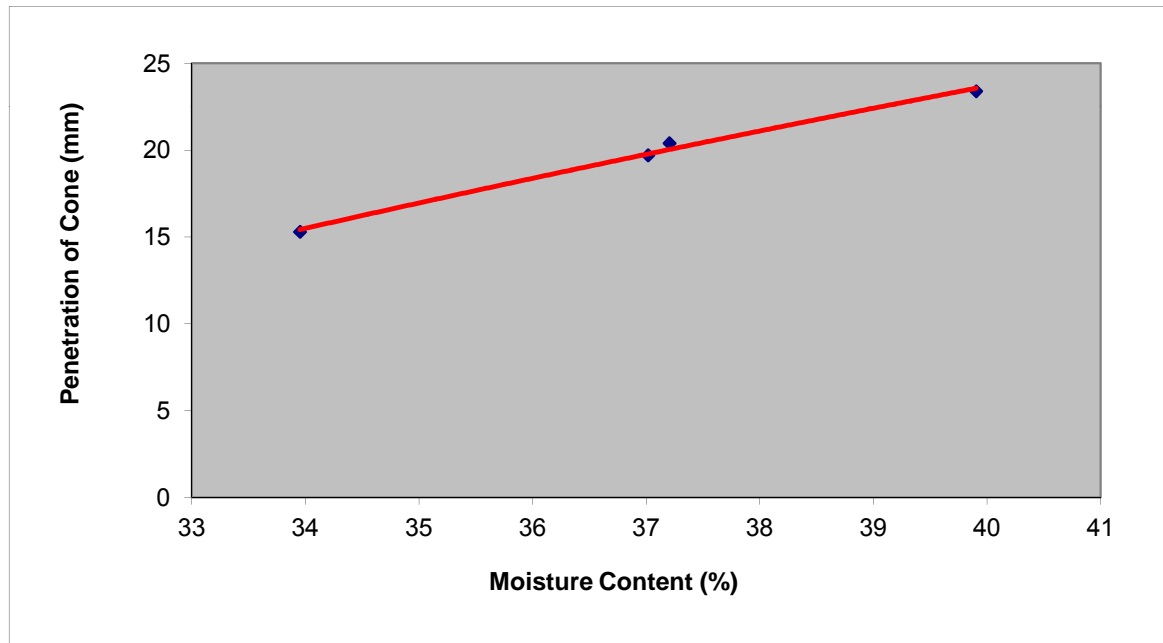
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 37.38

**Plastic Limit (%):** 8.86

**Placticity Index (%):** 28.52



Deviation from Standard:

Nil

Remarks:

Nil

Prepared By:

Jessica Farrugia  
Quality Manager

Approved By:

Chris Magro  
Laboratory Manager

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Registration No.: C32227

Alfred Xerri

Filename:

J2094\_Soil\_ATT\_TCR135\_ATT034.xls

## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR137
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	10/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test Reference No:	ATT036
				Tested by:	LS
				Date of test:	10/10/2014

#### Test Information

Sample Ref No: 140926 - Soil  
 Sampling Location: BH G7  
 Sample Description: BH G7 Sample 11  
 Date of sampling: 26/09/2014  
 Type of Material: Soil

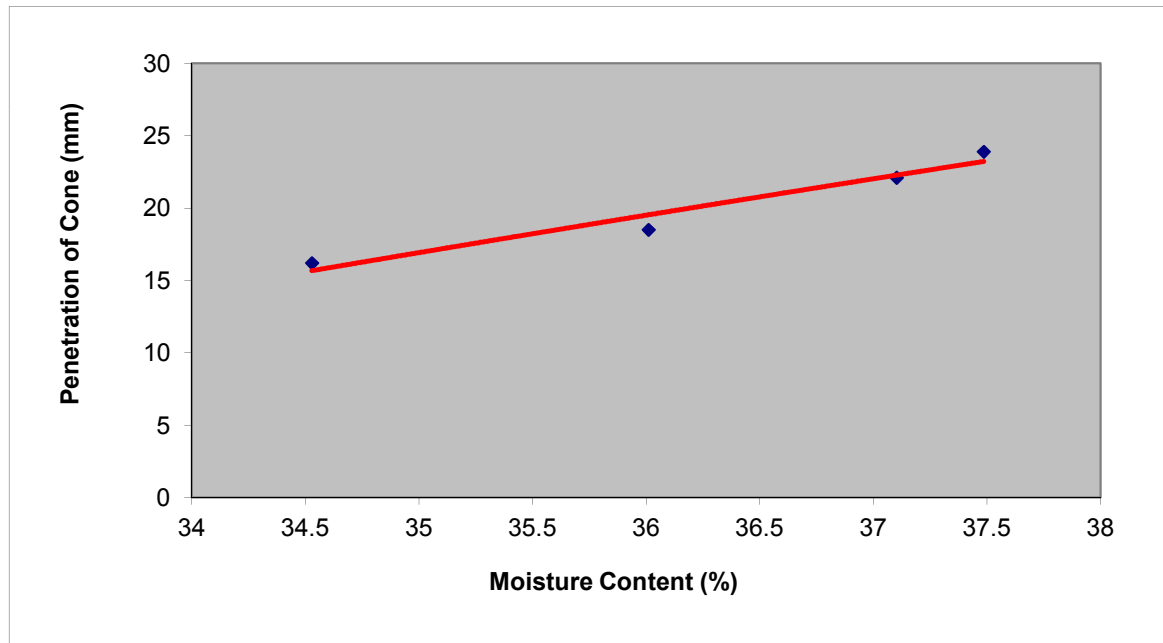
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 36.30

**Plastic Limit (%):** 8.94

**Placticity Index (%):** 27.36



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Laboratory Manager

# TEST CERTIFICATE

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## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR138
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	10/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	ATT037
				Tested by:	LS
				Date of test:	10/10/2014

#### Test Information

Sample Ref No: 140926 - Soil  
 Sampling Location: BH G7  
 Sample Description: BH G7 Sample 12  
 Date of sampling: 26/09/2014  
 Type of Material: Soil

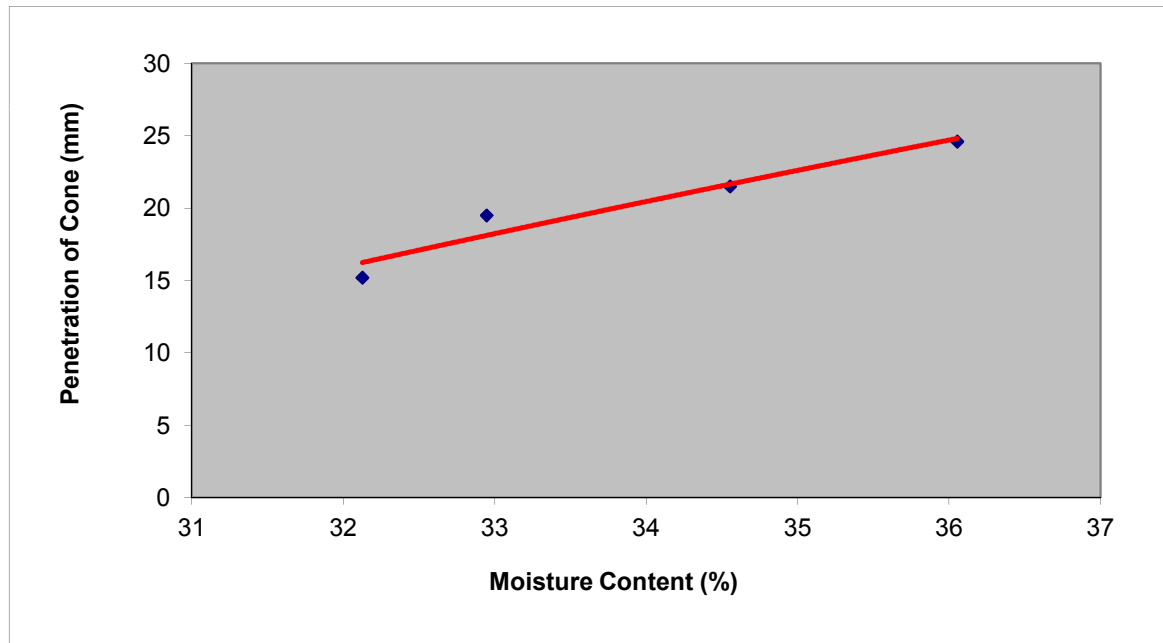
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** **33.96**

**Plastic Limit (%):** **9.55**

**Placticity Index (%):** **24.42**



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR139
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	10/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test Reference No:	ATT038
				Tested by:	LS
				Date of test:	10/10/2014

#### Test Information

Sample Ref No: 140926 - Soil  
 Sampling Location: BH G7  
 Sample Description: BH G7 Sample 14  
 Date of sampling: 26/09/2014  
 Type of Material: Soil

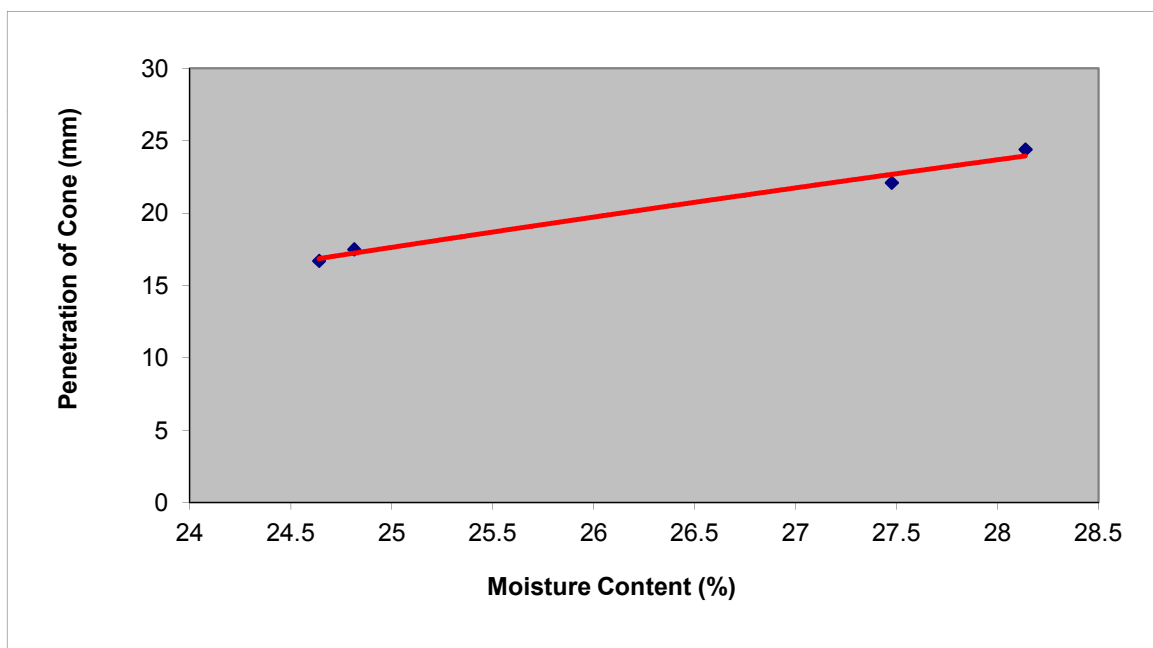
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 26.30

**Plastic Limit (%):** Non - Plastic

**Placticity Index (%):** -



#### Deviation from Standard:

Nil

#### Remarks:

Plastic limit determination could not be obtained due to non plasticity in Material

#### Prepared By:

*[Signature]*

Jessica Farrugia  
Quality Manager

#### Approved By:

*[Signature]*

Chris Magro  
Laboratory Manager

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Registration No.: C32227  
 Alfred Xerri

Filename: J2094\_Soil\_ATT\_TCR139\_ATT038.xls

## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR136
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	10/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	ATT035
				Tested by:	LS
				Date of test:	10/10/2014

#### Test Information

Sample Ref No: 140926 - Soil  
 Sampling Location: BH G7  
 Sample Description: BH G7 Sample 16  
 Date of sampling: 26/09/2014  
 Type of Material: Soil

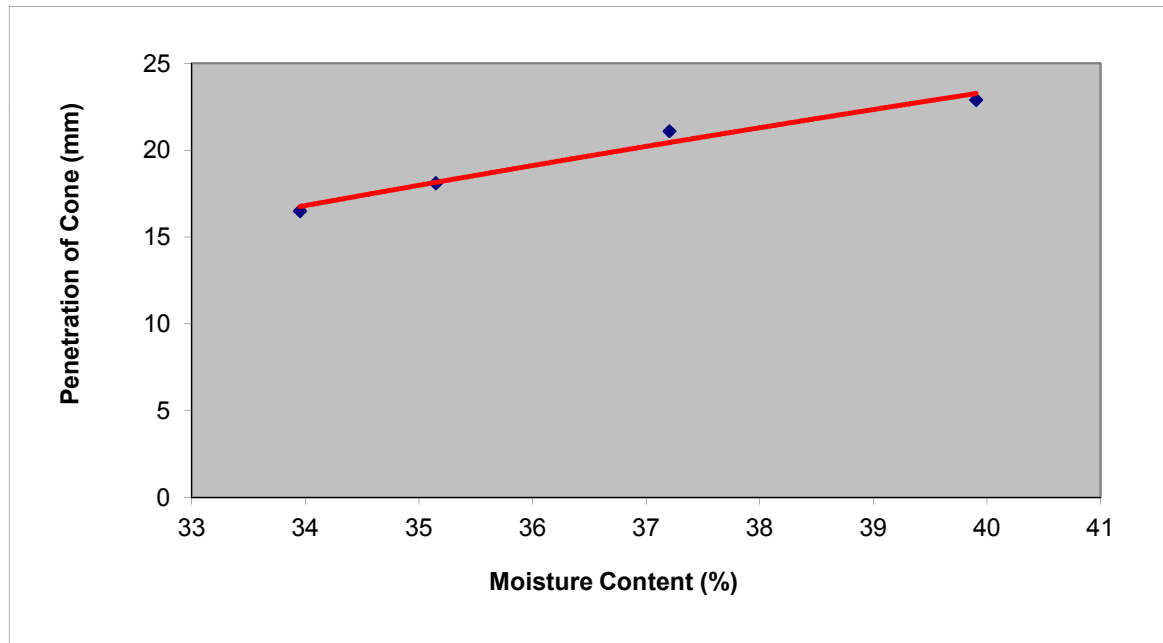
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 37.00

**Plastic Limit (%):** 9.66

**Placticity Index (%):** 27.34



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Laboratory Manager

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Alfred Xerri

Filename:

J2094\_Soil\_ATT\_TCR136\_ATT035.xls



## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR140
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Geotechnical Investigation		Date of certificate:	10/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test Reference No:	ATT039
				Tested by:	LS
				Date of test:	10/10/2014

#### Test Information

Sample Ref No: 140926 - Soil  
 Sampling Location: BH G7  
 Sample Description: BH G7 Sample 17  
 Date of sampling: 26/09/2014  
 Type of Material: Soil

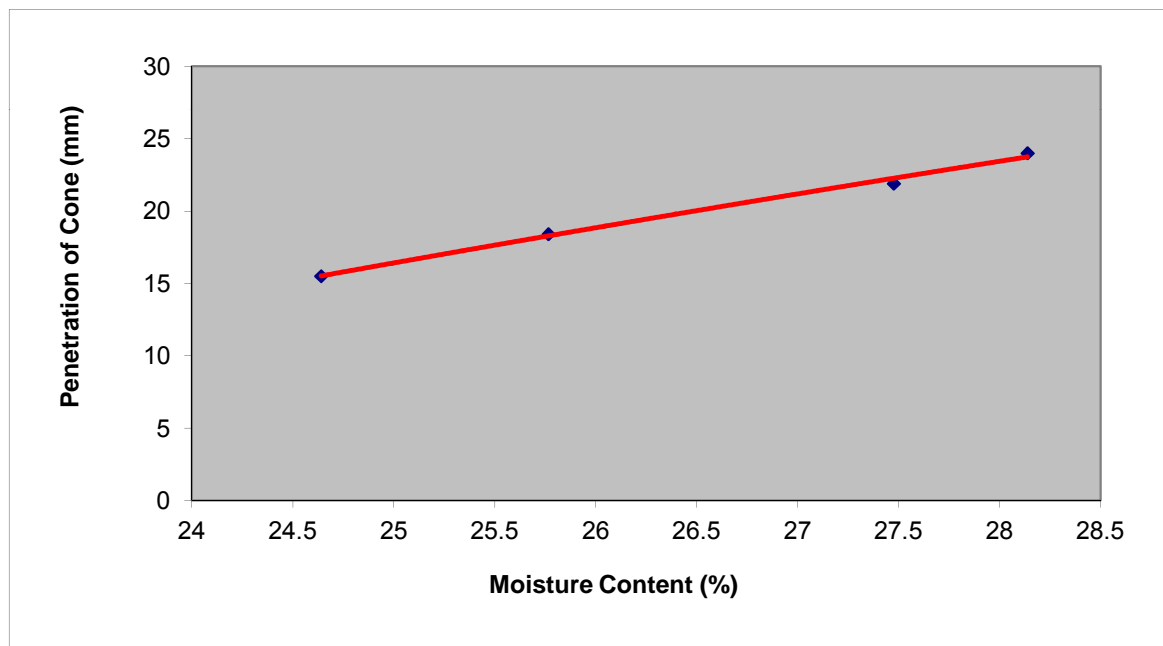
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 26.64

**Plastic Limit (%):** Non Plastic

**Placticity Index (%):** -



#### Deviation from Standard:

Nil

#### Remarks:

Plastic limit determination could not be obtained due to non plasticity in Material

#### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

#### Approved By:

*Chris Magro*

Chris Magro  
Laboratory Manager

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Registration No.: C32227  
 Alfred Xerri

Filename: J2094\_Soil\_ATT\_TCR140\_ATT039.xls

## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR094
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	07/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test Reference No:	ATT009
				Tested by:	LS
				Date of test:	10/2/2014

#### Test Information

Sample Ref No: 140916 - Soil  
 Sampling Location: BH G8  
 Sample Description: BH G8 Depth 2 - 3m  
 Date of sampling: 9/16/2014  
 Type of Material: Soil

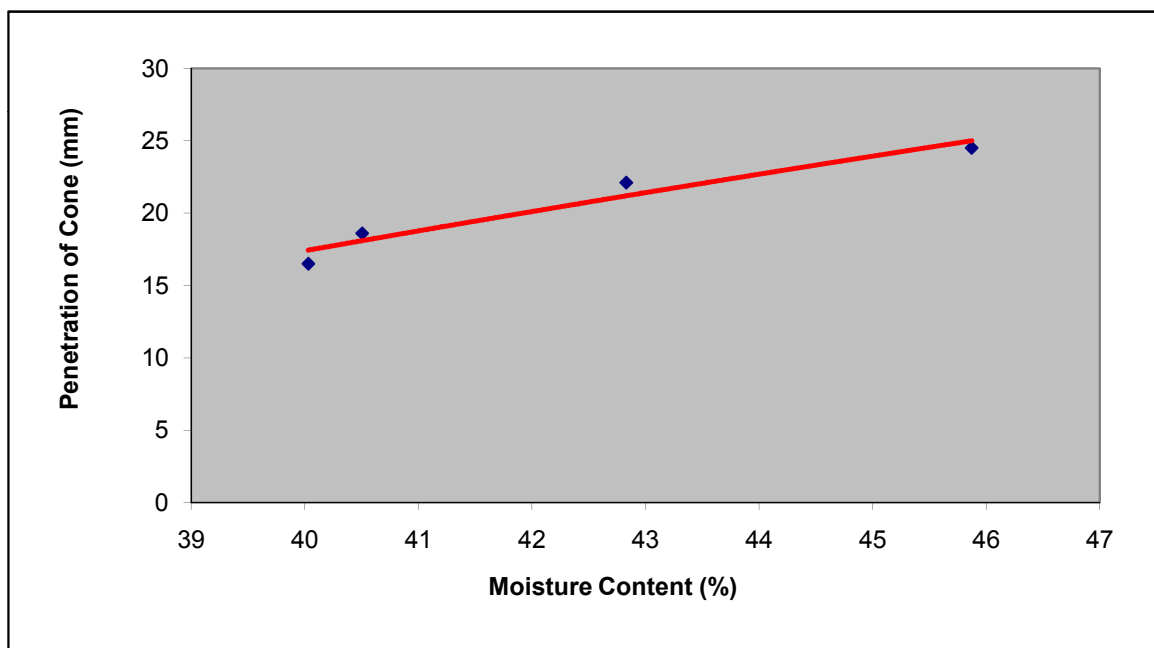
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 42.17

**Plastic Limit (%):** Non Plastic

**Placticity Index (%):** -



#### Deviation from Standard:

Nil

#### Remarks:

Plastic limit determination could not be obtained due to non plasticity in Material

#### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

#### Approved By:

*Chris Magro*

Chris Magro  
Laboratory Manager

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Registration No.: C32227  
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 Filename: J2094\_Soil\_ATT\_TCR249\_ATT058.xls

## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR095
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	07/10/2014
Attn:	Giorgos Rousopoulos			Client/Job N°:	J2094
Client Tel N°:	306972019434			Test Reference No:	ATT010
				Tested by:	LS
				Date of test:	10/2/2014

#### Test Information

Sample Ref No: 140916 - Soil  
 Sampling Location: BH G8  
 Sample Description: BH G8 Depth 5.45 - 6.45m  
 Date of sampling: 9/16/2014  
 Type of Material: Soil

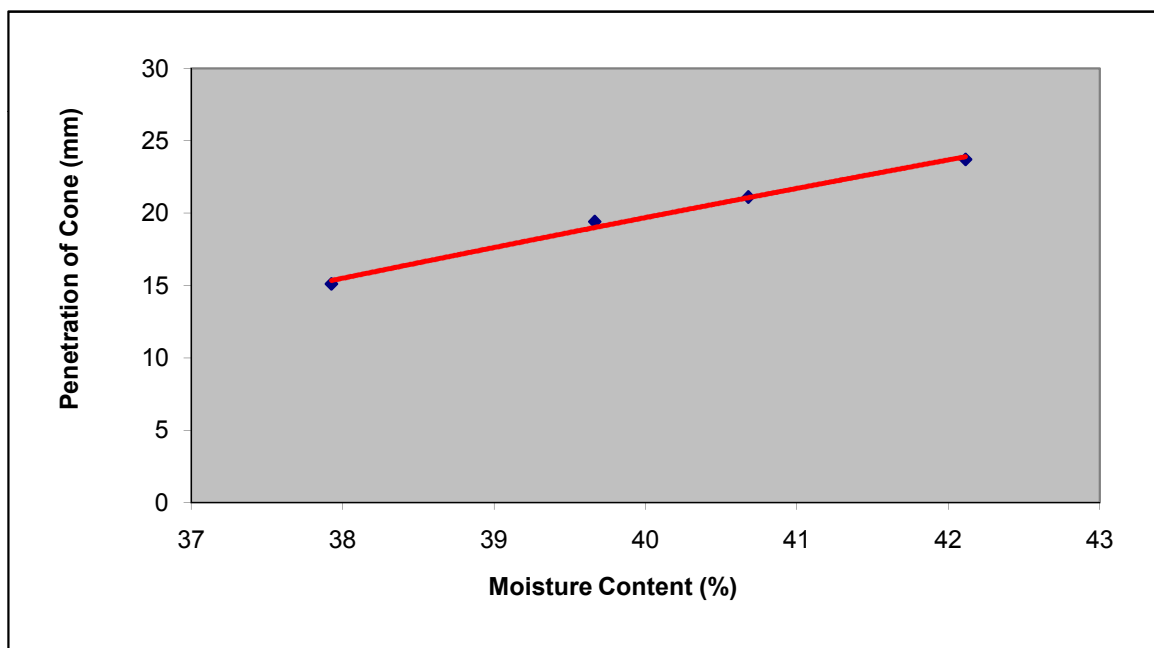
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 40.30

**Plastic Limit (%):** Non plastic

**Placticity Index (%):** -



#### Deviation from Standard:

Nil

#### Remarks:

Plastic limit determination could not be obtained due to non plasticity in Material

#### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

#### Approved By:

*Chris Magro*

Chris Magro  
Laboratory Manager

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Registration No.: C32227  
 Alfred Xerri  
 Filename: J2094\_Soil\_ATT\_TCR249\_ATT058.xls

## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR096
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	07/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test Reference No:	ATT011
				Tested by:	LS
				Date of test:	10/2/2014

#### Test Information

Sample Ref No: 140916 - Soil  
 Sampling Location: BH G8  
 Sample Description: BH G8 Depth 8.9 - 9.9m  
 Date of sampling: 9/16/2014  
 Type of Material: Soil

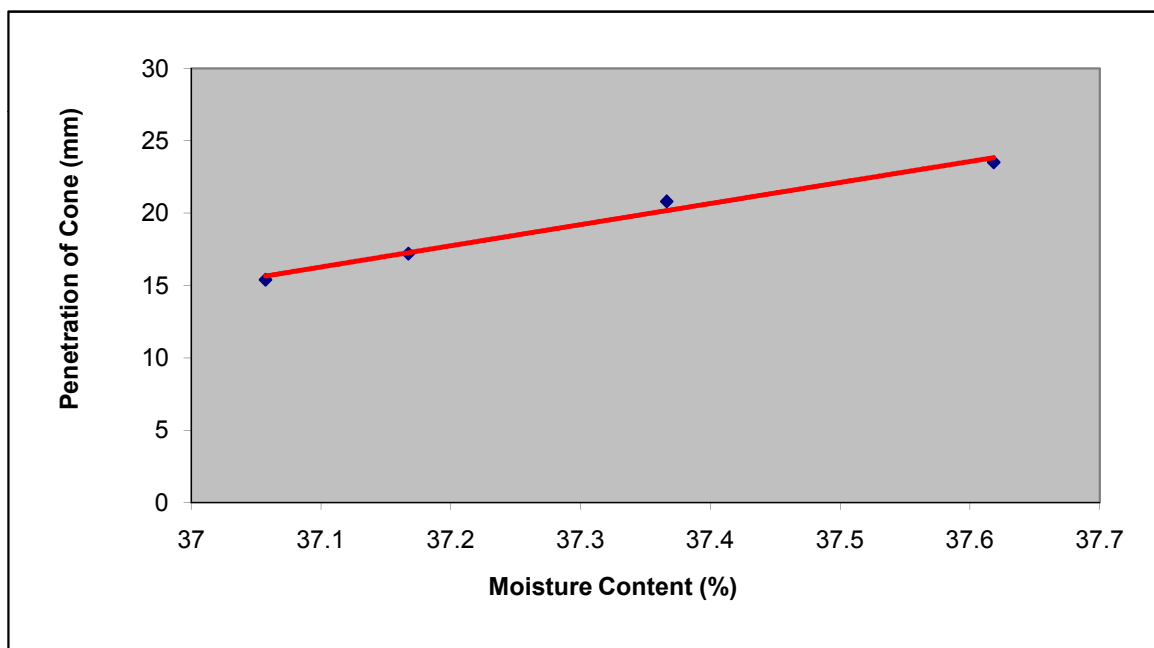
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 37.37

**Plastic Limit (%):** Non Plastic

**Placticity Index (%):** -



#### Deviation from Standard:

Nil

#### Remarks:

Plastic limit determination could not be obtained due to non plasticity in Material

#### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

#### Approved By:

*Chris Magro*

Chris Magro  
Laboratory Manager

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Registration No.: C32227  
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 Filename: J2094\_Soil\_ATT\_TCR249\_ATT058.xls

## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR097
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	07/10/2014
Attn:	Giorgos Rousopoulos			Client/Job N°:	J2094
Client Tel N°:	306972019434			Test Reference No:	ATT012
				Tested by:	LS
				Date of test:	10/2/2014

#### Test Information

Sample Ref No: 140916 - Soil  
 Sampling Location: BH G8  
 Sample Description: BH G8 Depth 10.9 - 11.5m  
 Date of sampling: 9/16/2014  
 Type of Material: Soil

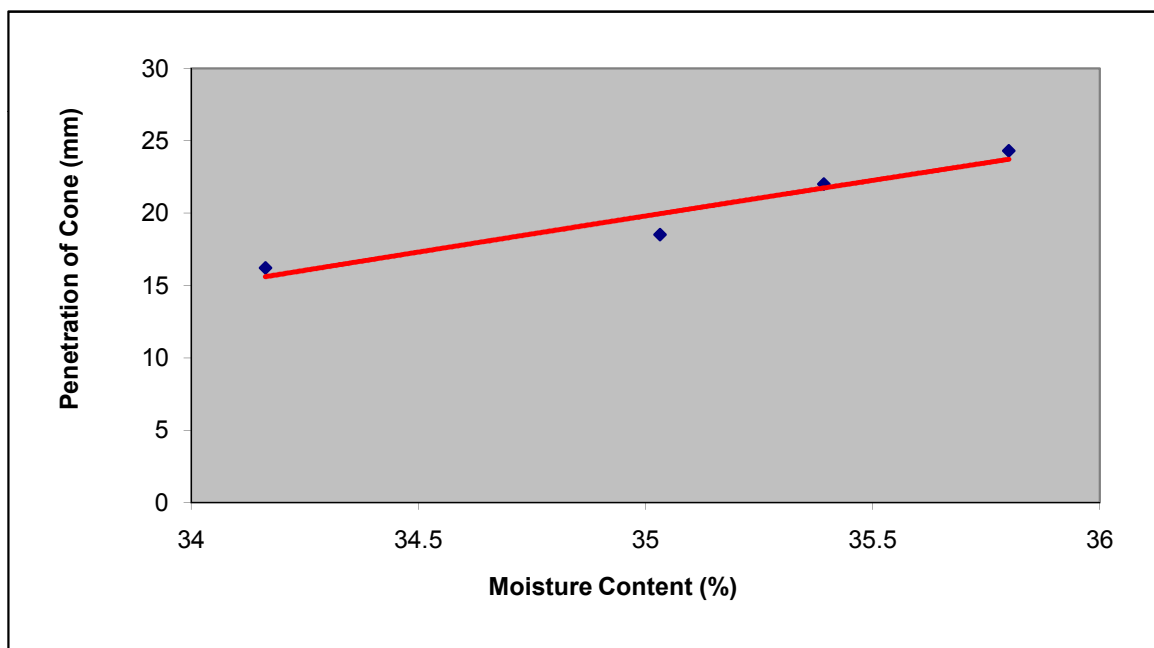
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 35.10

**Plastic Limit (%):** Non Plastic

**Placticity Index (%):** -



#### Deviation from Standard:

Nil

#### Remarks:

Plastic limit determination could not be obtained due to non plasticity in Material

#### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

#### Approved By:

*Chris Magro*

Chris Magro  
Laboratory Manager

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Registration No.: C32227  
 Alfred Xerri  
 Filename: J2094\_Soil\_ATT\_TCR249\_ATT058.xls



## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR098
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Geotechnical Investigation		Date of certificate:	07/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test Reference No:	ATT013
				Tested by:	LS
				Date of test:	02/10/2014

#### Test Information

Sample Ref No: 140915 - Soil  
 Sampling Location: BH G9  
 Sample Description: BH G9 Depth 0 - 1m  
 Date of sampling: 15/09/2014  
 Type of Material: Soil

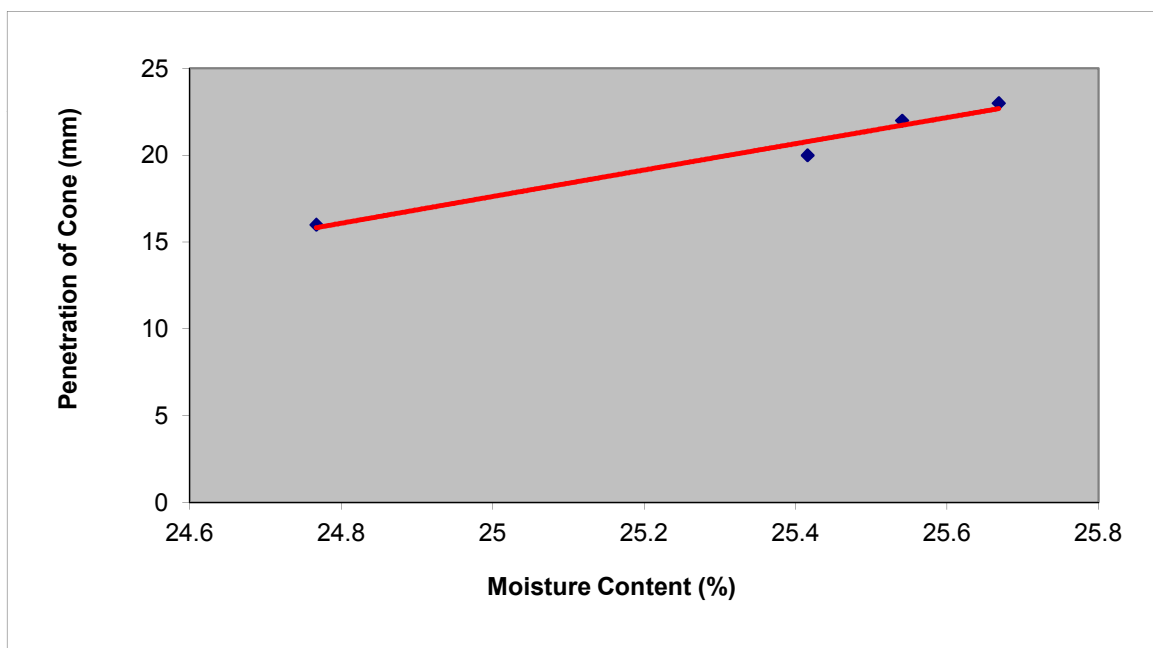
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 25.34

**Plastic Limit (%):** Non Plastic

**Placticity Index (%):** -



#### Deviation from Standard:

Nil

#### Remarks:

Plastic limit determination could not be obtained due to non plasticity in Material

#### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

#### Approved By:

*Chris Magro*

Chris Magro  
Laboratory Manager

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Registration No.: C32227  
 Alfred Xerri

Filename: J2094\_Soil\_ATT\_TCR098\_ATT013.xls

## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR099
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	07/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test Reference No:	ATT014
				Tested by:	LS
				Date of test:	02/10/2014

#### Test Information

Sample Ref No: 140915 - Soil  
 Sampling Location: BH G9  
 Sample Description: BH G9 Depth 3 - 4m  
 Date of sampling: 15/09/2014  
 Type of Material: Soil

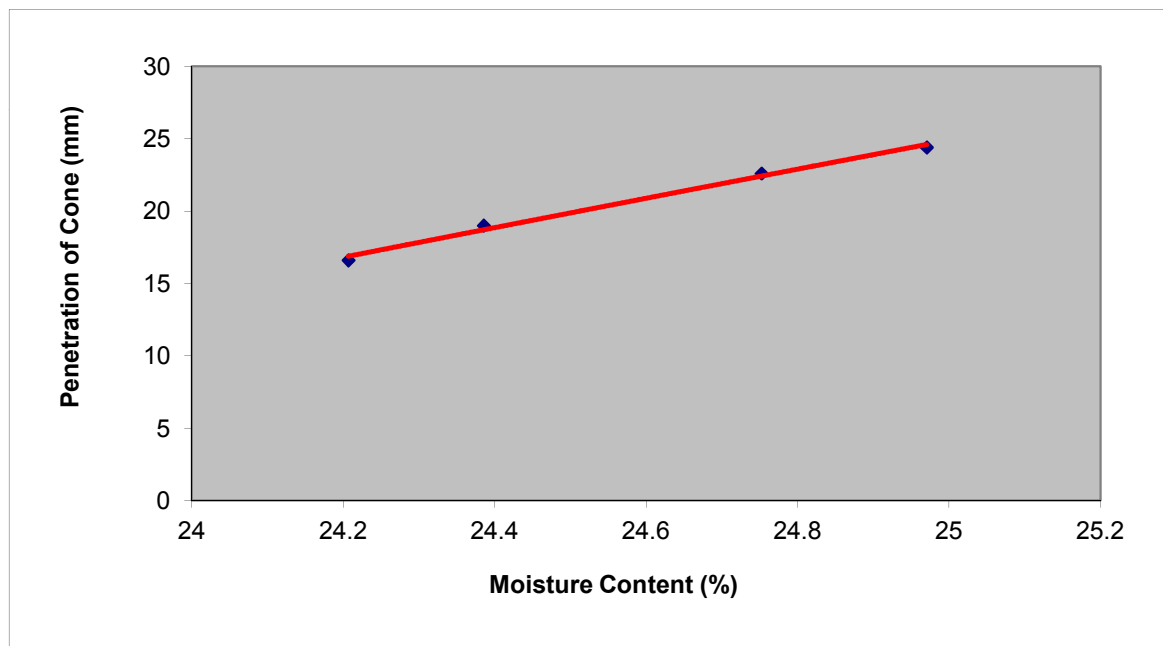
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 24.54

**Plastic Limit (%):** Non Plastic

**Placticity Index (%):** -



#### Deviation from Standard:

Nil

#### Remarks:

Plastic limit determination could not be obtained due to non plasticity in Material

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Laboratory Manager

## TEST CERTIFICATE

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Registration No.: C32227  
 Alfred Xerri

Filename: J2094\_Soil\_ATT\_TCR099\_ATT014.xls

## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR101
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	07/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test Reference No:	ATT016
				Tested by:	LS
				Date of test:	02/10/2014

#### Test Information

Sample Ref No: 140915 - Soil  
 Sampling Location: BH G9  
 Sample Description: BH G9 Depth 5.3 - 5.5m  
 Date of sampling: 15/09/2014  
 Type of Material: Soil

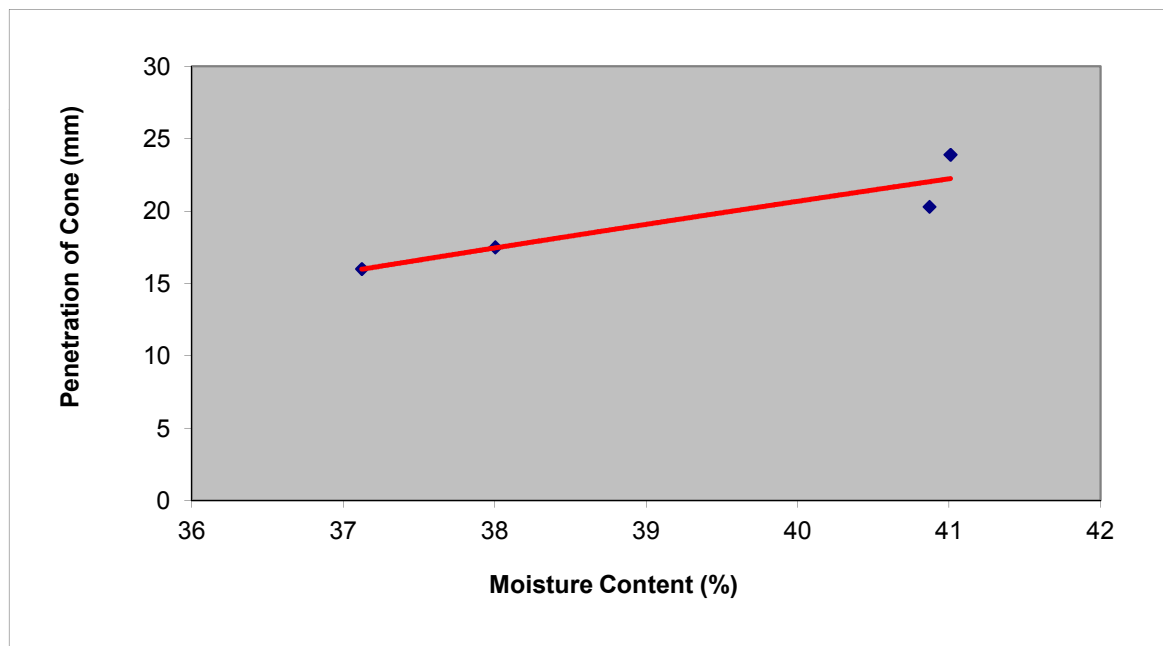
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 39.68

**Plastic Limit (%):** Non Plastic

**Placticity Index (%):** -



#### Deviation from Standard:

Nil

#### Remarks:

Plastic limit determination could not be obtained due to non plasticity in Material

#### Prepared By:

*[Signature]*

Jessica Farrugia  
Quality Manager

#### Approved By:

*[Signature]*

Chris Magro  
Laboratory Manager

## TEST CERTIFICATE

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Terracore Ltd,  
 Plot 23, New Street in Kappara Street, Mosta Industrial Estate, Mosta, MST4003, Malta  
 T: (+356) 21583241 F: (+356) 21418645  
 E: info@terracoiremalta.com W: www.terracoiremalta.com

Registration No.: C32227  
 Alfred Xerri

Filename: J2094\_Soil\_ATT\_TCR101\_ATT016.xls

## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR100
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	07/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test Reference No:	ATT015
				Tested by:	LS
				Date of test:	02/10/2014

#### Test Information

Sample Ref No: 140915 - Soil  
 Sampling Location: BH G9  
 Sample Description: BH G9 Depth 8.65 - 9.10m  
 Date of sampling: 15/09/2014  
 Type of Material: Soil

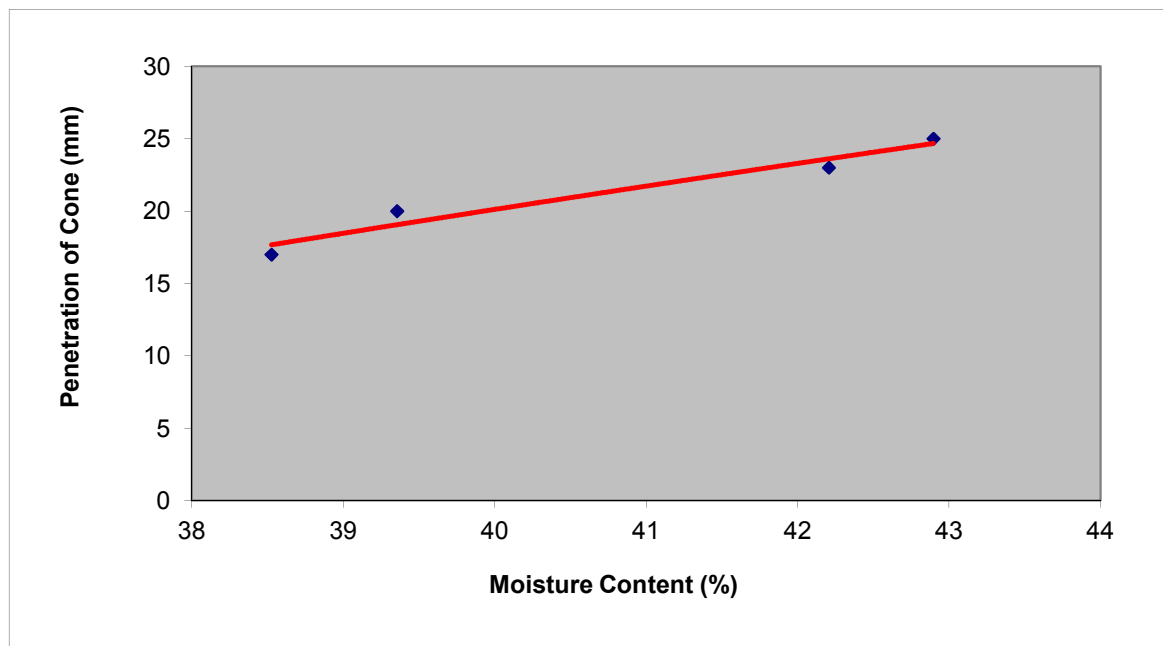
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 40.14

**Plastic Limit (%):** Non-Plastic

**Placticity Index (%):** -



#### Deviation from Standard:

Nil

#### Remarks:

Plastic limit determination could not be obtained due to non plasticity in Material

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Laboratory Manager

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Registration No.: C32227  
 Alfred Xerri  
 Filename: J2094\_Soil\_ATT\_TCR100\_ATT015.xls

## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR102
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	07/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test Reference No:	ATT017
				Tested by:	LS
				Date of test:	02/10/2014

#### Test Information

Sample Ref No: 140912 - Soil  
 Sampling Location: BH G10  
 Sample Description: BH G10 Depth 2.3 - 2.7m  
 Date of sampling: 12/09/2014  
 Type of Material: Soil

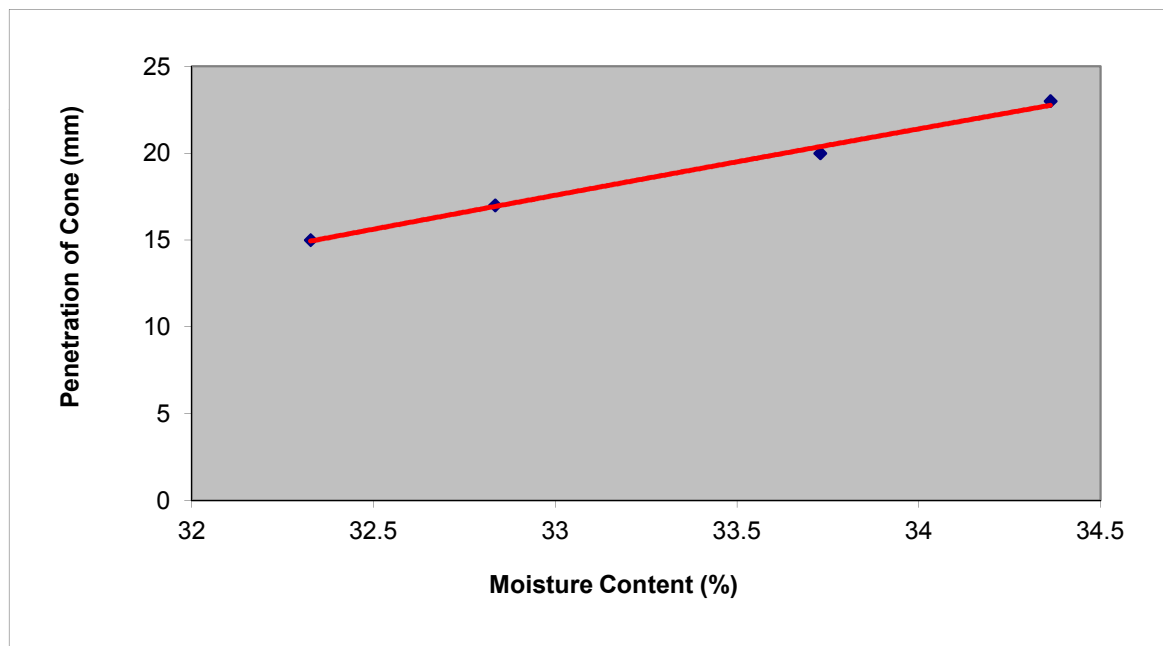
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 33.69

**Plastic Limit (%):** Non-Plastic

**Placticity Index (%):** -



#### Deviation from Standard:

Nil

#### Remarks:

Plastic limit determination could not be obtained due to non plasticity in Material

#### Prepared By:

*[Signature]*

Jessica Farrugia  
Quality Manager

#### Approved By:

*[Signature]*

Chris Magro  
Laboratory Manager

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Registration No.: C32227  
 Alfred Xerri

Filename: J2094\_Soil\_ATT\_TCR102\_ATT017.xls



## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR103
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	07/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test Reference No:	ATT018
				Tested by:	LS
				Date of test:	02/10/2014

#### Test Information

Sample Ref No: 140912 - Soil  
 Sampling Location: BH G10  
 Sample Description: BH G10 Depth 3.3 - 4.3m  
 Date of sampling: 12/09/2014  
 Type of Material: Soil

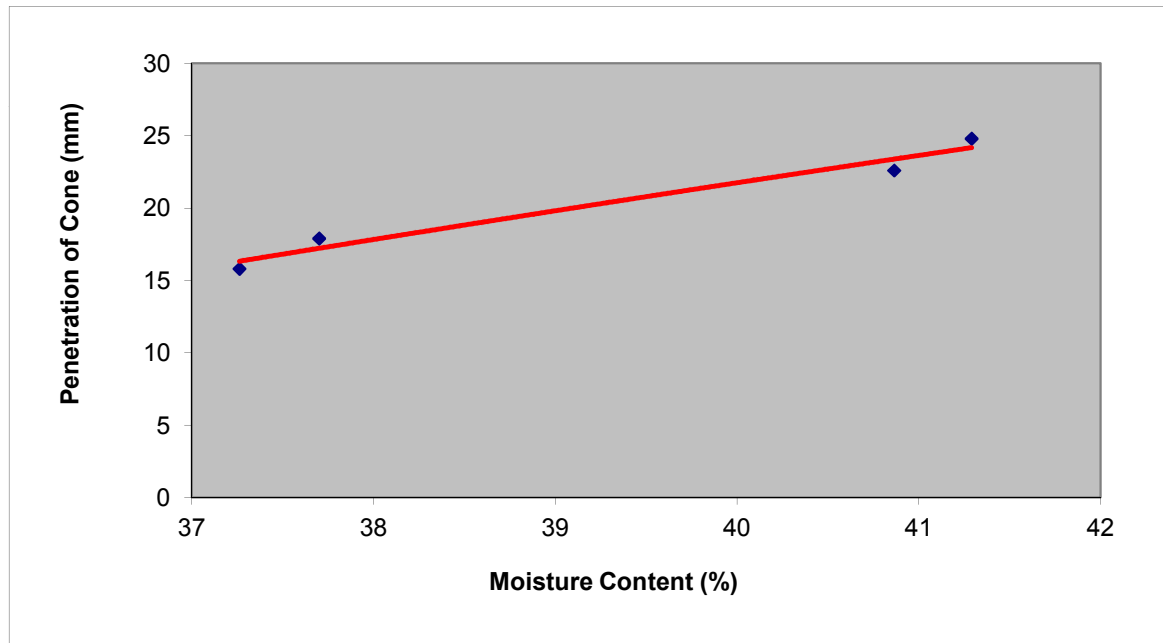
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 39.30

**Plastic Limit (%):** Non Plastic

**Placticity Index (%):** -



#### Deviation from Standard:

Nil

#### Remarks:

Plastic limit determination could not be obtained due to non plasticity in Material

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Laboratory Manager

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Registration No.: C32227  
 Alfred Xerri  
 Filename: J2094\_Soil\_ATT\_TCR103\_ATT018.xls

## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR104
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	07/10/2014
Attn:	Giorgos Rousopoulos			Client/Job N°:	J2094
Client Tel N°:	306972019434			Test Reference No:	ATT019
				Tested by:	LS
				Date of test:	02/10/2014

#### Test Information

Sample Ref No: 140912 - Soil  
 Sampling Location: BH G10  
 Sample Description: BH G10 Depth 6.5 - 6.7m  
 Date of sampling: 12/09/2014  
 Type of Material: Soil

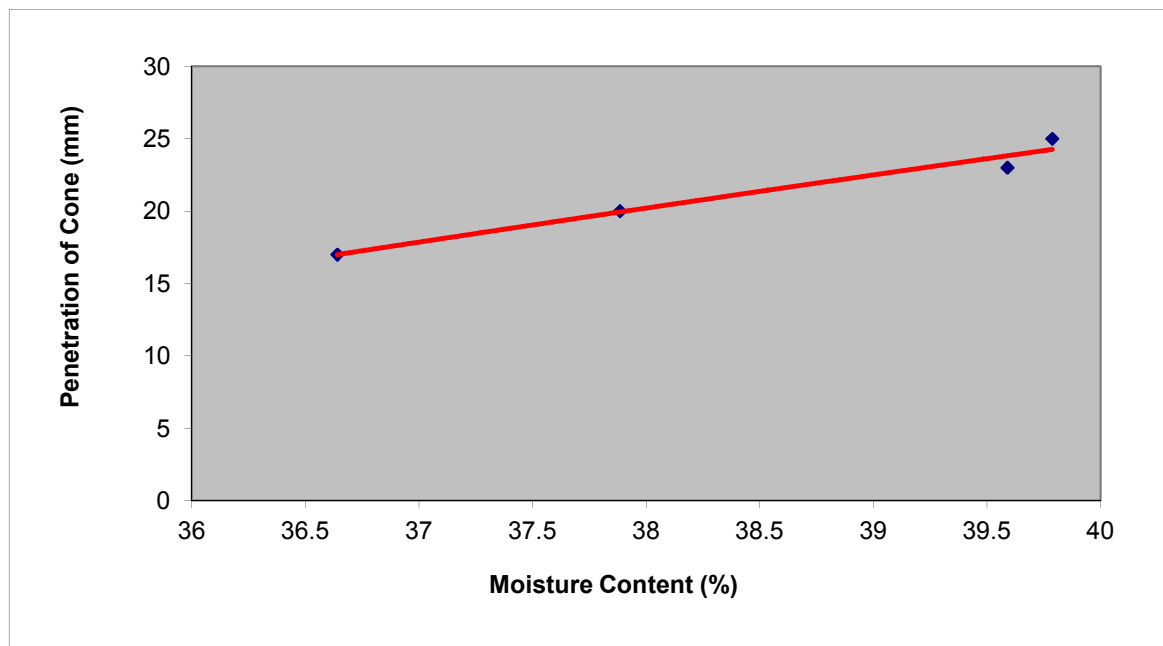
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 38.04

**Plastic Limit (%):** Non Plastic

**Placticity Index (%):** -



#### Deviation from Standard:

Nil

#### Remarks:

Plastic limit determination could not be obtained due to non plasticity in Material

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Liquid/Plastic Limit according to BS EN 1377 - 2: 1990 Clause 4.3

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR105
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	07/10/2014
Attn:	Giorgos Rousopoulos			Client/Job N°:	J2094
Client Tel N°:	306972019434			Test Reference No:	ATT020
				Tested by:	LS
				Date of test:	02/10/2014

#### Test Information

Sample Ref No: 140912 - Soil  
 Sampling Location: BH G10  
 Sample Description: BH G10 Depth 8.7 - 9.1m  
 Date of sampling: 12/09/2014  
 Type of Material: Soil

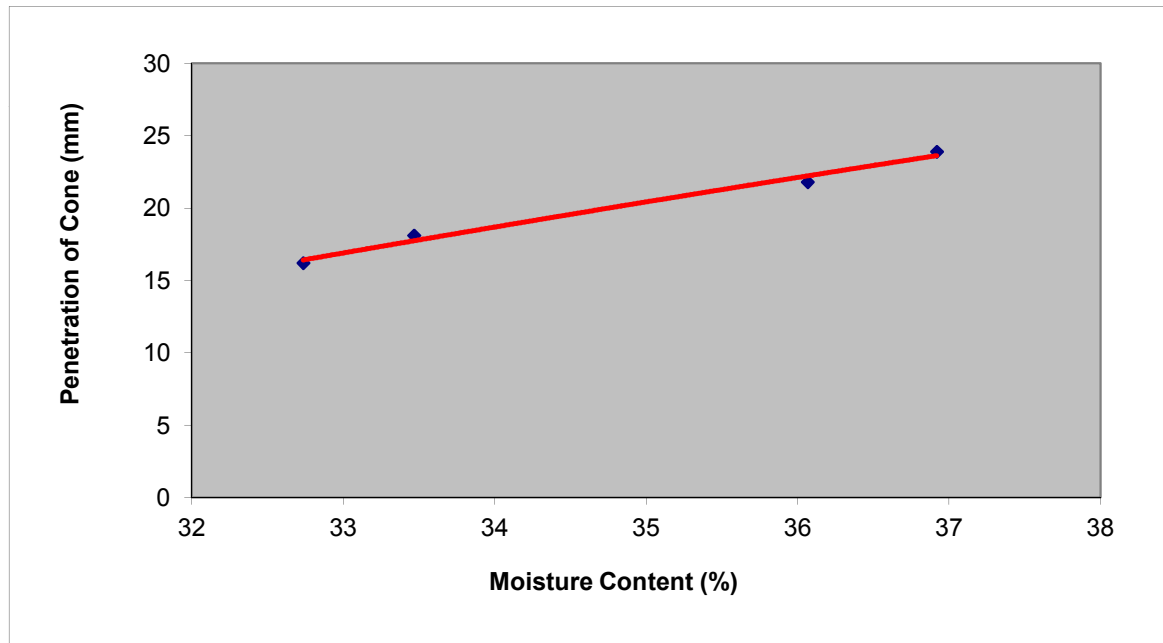
#### Results

Proportion received on 425µm sieve : \_\_\_\_\_

**Liquid Limit (%):** 34.93

**Plastic Limit (%):** Non Plastic

**Placticity Index (%):** -



#### Deviation from Standard:

Nil

#### Remarks:

Plastic limit determination could not be obtained due to non plasticity in Material

#### Prepared By:

*[Signature]*

Jessica Farrugia  
Quality Manager

#### Approved By:

*[Signature]*

Chris Magro  
Laboratory Manager

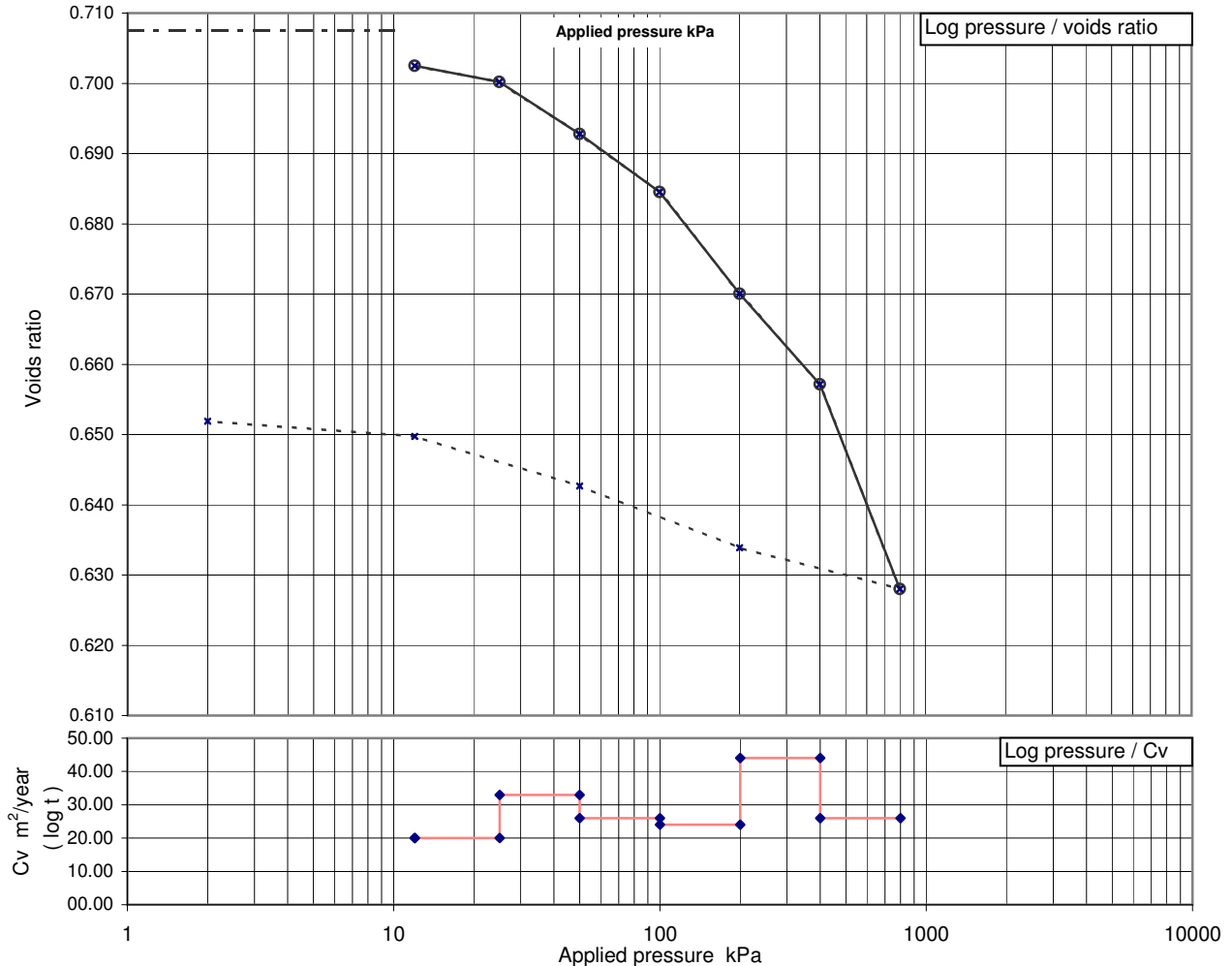
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# ONE DIMENSIONAL CONSOLIDATION TEST

## BS 1377 : Part 5 : 1990 : clause 3

Project No	N4263-14	Sample Details:	Hole No	G1
Project Name	Dellimana		Depth (m BGL)	3.45
			Samp No	4
			Type	U
			ID	MASTER2066
			Spec Ref	



Soil description	Cream CHALK composed of silty gravel with localised softening.
Preparation	Undisturbed
Index properties (if available)	Liquid limit % Plastic limit %

### Specimen details

Particle density	2.65	assumed	Mg/m³
Diameter	50.02		mm
Height	20.04	19.38	mm
Voids ratio	0.708	0.652	
Moisture content	24	24	%
Bulk density	1.93	1.98	Mg/m³
Dry density	1.55	1.60	Mg/m³
Saturation	90	96	%
Average temperature for test	21		°C

Swelling pressure not measured kPa

Notes :

Specimen taken 5 mm from base of sample

Applied Pressure kPa	Voids ratio	$M_v$ m²/MN	$C_v$ ( $t_{50, \log}$ ) m²/year	$C_v$ ( $t_{90, \text{root}}$ ) m²/year
0	0.7075			
12	0.7025	0.245	20	29
25	0.7002	0.104	20	29
50	0.6928	0.174	33	33
100	0.6845	0.098	26	27
200	0.6700	0.086	24	26
400	0.6572	0.039	44	50
800	0.6280	0.044	26	25
200	0.6339	0.006	-	-
50	0.6427	0.036	-	-
12	0.6498	0.113	-	-
2	0.6519	0.129	-	-

### QA Ref

SLR 5.3  
Rev 140  
Mar 12



Printed:03/11/2014 12:28

### Figure

**OED**

ONE DIMENSIONAL CONSOLIDATION TEST																																																																																																																																																																																																																																																																																																																																																																																																							
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<div><div><div>Applied pressure kPa</div><div>Log pressure / voids ratio</div></div><div><div>Voids ratio</div><div>Log pressure / Cv</div></div></div> <table><tr><td>0.710</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>0.700</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>0.690</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>0.680</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>0.670</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>0.660</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>0.650</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>0.640</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>0.630</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>0.620</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>0.610</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>50.00</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>40.00</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>30.00</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>20.00</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>10.00</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>00.00</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>10</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>100</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>1000</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>10000</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> <div><div>Soil description</div><div>Preparation</div><div>Index properties</div><div>Specimen details</div><div>Swelling pressure</div><div>Notes :</div></div> <div><div>Cream CHALK composed of silty gravel with localised softening.</div><div>Undisturbed</div><div><div>Liquid limit %</div><div>Plastic limit %</div></div><div><table><tr><td>Initial</td><td>Final</td><td></td></tr><tr><td>2.65</td><td>assumed</td><td>Mg/m<sup>3</sup></td></tr><tr><td>50.02</td><td></td><td>mm</td></tr><tr><td>20.04</td><td>19.38</td><td>mm</td></tr><tr><td>0.708</td><td>0.652</td><td></td></tr><tr><td>24</td><td>24</td><td>%</td></tr><tr><td>1.93</td><td>1.98</td><td>Mg/m<sup>3</sup></td></tr><tr><td>1.55</td><td>1.60</td><td>Mg/m<sup>3</sup></td></tr><tr><td>90</td><td>96</td><td>%</td></tr><tr><td>21</td><td></td><td>°C</td></tr></table></div><div>not measured</div><div>kPa</div></div> <div><table><tr><td>Applied Pressure</td><td>Voids ratio</td><td>M<sub>v</sub></td><td>C<sub>v</sub></td><td>C<sub>v</sub></td><td></td></tr><tr><td>kPa</td><td></td><td>m<sup>2</sup>/MN</td><td>( t<sub>50, log</sub> )</td><td>( t<sub>90, root</sub> )</td><td></td></tr><tr><td></td><td></td><td>m<sup>2</sup>/year</td><td>m<sup>2</sup>/year</td><td></td><td></td></tr><tr><td>0</td><td>0.7075</td><td></td><td></td><td></td><td></td></tr><tr><td>12</td><td>0.7025</td><td>0.245</td><td>25</td><td>29</td><td></td></tr><tr><td>25</td><td>0.7002</td><td>0.104</td><td>20</td><td>29</td><td></td></tr><tr><td>50</td><td>0.6928</td><td>0.174</td><td>33</td><td>33</td><td></td></tr><tr><td>100</td><td>0.6845</td><td>0.098</td><td>26</td><td>27</td><td></td></tr><tr><td>200</td><td>0.6700</td><td>0.086</td><td>24</td><td>26</td><td></td></tr><tr><td>300</td><td>0.6572</td><td>0.077</td><td>44</td><td>50</td><td></td></tr><tr><td>800</td><td>0.6280</td><td>0.035</td><td>26</td><td>25</td><td></td></tr><tr><td>200</td><td>0.6339</td><td>0.006</td><td>-</td><td>-</td><td></td></tr><tr><td>50</td><td>0.6427</td><td>0.036</td><td>-</td><td>-</td><td></td></tr><tr><td>12</td><td>0.6498</td><td>0.113</td><td>-</td><td>-</td><td></td></tr><tr><td>2</td><td>0.6519</td><td>0.129</td><td>-</td><td>-</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table></div> <div><div>Specimen taken</div><div>5</div><div>mm from base of sample</div></div> <div><div>QA Ref</div><div>SLR 5.3</div><div>Rev 140</div><div>Mar 12</div></div> <div><div>ESG</div><div>Environmental Scientifics Group</div></div> <div><div>UKAS</div><div>1157</div></div> <div><div>Printed:04/12/2014 14:01</div></div> <div><div>Figure</div><div>OED 1</div></div>										0.710										0.700										0.690										0.680										0.670										0.660										0.650										0.640										0.630										0.620										0.610										50.00										40.00										30.00										20.00										10.00										00.00										1										10										100										1000										10000										Initial	Final		2.65	assumed	Mg/m <sup>3</sup>	50.02		mm	20.04	19.38	mm	0.708	0.652		24	24	%	1.93	1.98	Mg/m <sup>3</sup>	1.55	1.60	Mg/m <sup>3</sup>	90	96	%	21		°C	Applied Pressure	Voids ratio	M <sub>v</sub>	C <sub>v</sub>	C <sub>v</sub>		kPa		m <sup>2</sup> /MN	( t <sub>50, log</sub> )	( t <sub>90, root</sub> )				m <sup>2</sup> /year	m <sup>2</sup> /year			0	0.7075					12	0.7025	0.245	25	29		25	0.7002	0.104	20	29		50	0.6928	0.174	33	33		100	0.6845	0.098	26	27		200	0.6700	0.086	24	26		300	0.6572	0.077	44	50		800	0.6280	0.035	26	25		200	0.6339	0.006	-	-		50	0.6427	0.036	-	-		12	0.6498	0.113	-	-		2	0.6519	0.129	-	-																																											
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2.65	assumed	Mg/m <sup>3</sup>																																																																																																																																																																																																																																																																																																																																																																																																					
50.02		mm																																																																																																																																																																																																																																																																																																																																																																																																					
20.04	19.38	mm																																																																																																																																																																																																																																																																																																																																																																																																					
0.708	0.652																																																																																																																																																																																																																																																																																																																																																																																																						
24	24	%																																																																																																																																																																																																																																																																																																																																																																																																					
1.93	1.98	Mg/m <sup>3</sup>																																																																																																																																																																																																																																																																																																																																																																																																					
1.55	1.60	Mg/m <sup>3</sup>																																																																																																																																																																																																																																																																																																																																																																																																					
90	96	%																																																																																																																																																																																																																																																																																																																																																																																																					
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Applied Pressure	Voids ratio	M <sub>v</sub>	C <sub>v</sub>	C <sub>v</sub>																																																																																																																																																																																																																																																																																																																																																																																																			
kPa		m <sup>2</sup> /MN	( t <sub>50, log</sub> )	( t <sub>90, root</sub> )																																																																																																																																																																																																																																																																																																																																																																																																			
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0	0.7075																																																																																																																																																																																																																																																																																																																																																																																																						
12	0.7025	0.245	25	29																																																																																																																																																																																																																																																																																																																																																																																																			
25	0.7002	0.104	20	29																																																																																																																																																																																																																																																																																																																																																																																																			
50	0.6928	0.174	33	33																																																																																																																																																																																																																																																																																																																																																																																																			
100	0.6845	0.098	26	27																																																																																																																																																																																																																																																																																																																																																																																																			
200	0.6700	0.086	24	26																																																																																																																																																																																																																																																																																																																																																																																																			
300	0.6572	0.077	44	50																																																																																																																																																																																																																																																																																																																																																																																																			
800	0.6280	0.035	26	25																																																																																																																																																																																																																																																																																																																																																																																																			
200	0.6339	0.006	-	-																																																																																																																																																																																																																																																																																																																																																																																																			
50	0.6427	0.036	-	-																																																																																																																																																																																																																																																																																																																																																																																																			
12	0.6498	0.113	-	-																																																																																																																																																																																																																																																																																																																																																																																																			
2	0.6519	0.129	-	-																																																																																																																																																																																																																																																																																																																																																																																																			



Loc. No. N4263-14  
Location DELLIMANA

Hole No. G1  
Sample No. U4  
Spec No.  
Top Depth 21.25  
Specimen height mm 20.03

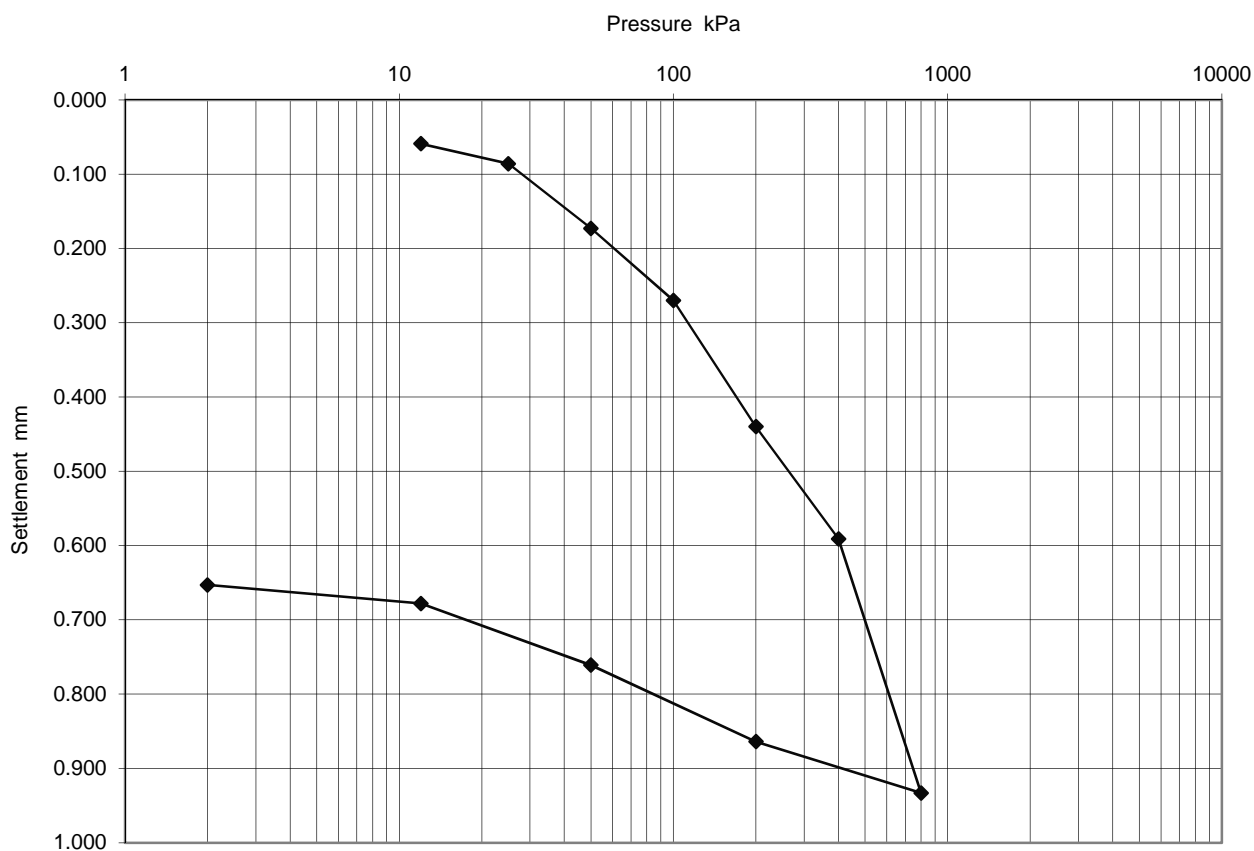
Filename : G1-U4-  
Stage 1 [G1-U4--.xls]sheet1'

### MANUAL INPUT

### COMPUTED VALUES - NOT MANUAL

Reading resolution 1 mm/division

Stage No.	Pressure kPa	correction mm	Temp°	Final settlement mm	t50 log mins	t90 root mins	Csec
1	12	0.002	21.1	0.059	0.5	1.5	0.0001
2	25	0.006	21	0.086	0.5	1.5	0.0003
3	50	0.012	20.9	0.173	0.3	1.3	0.0003
4	100	0.018	19.9	0.270	0.4	1.6	0.0004
5	200	0.028	20.8	0.440	0.4	1.6	0.0005
6	400	0.044	21	0.591	0.22	0.82	0.0012
7	800	0.062	21.1	0.933	0.36	1.60	0.0010
8	200	0.040	21.2	0.864			
9	50	0.025	21.1	0.761			
10	12	0.015	20.8	0.678			
11	2	0.000	21.3	0.653			
12							
13							
14							
15							
16							
17							

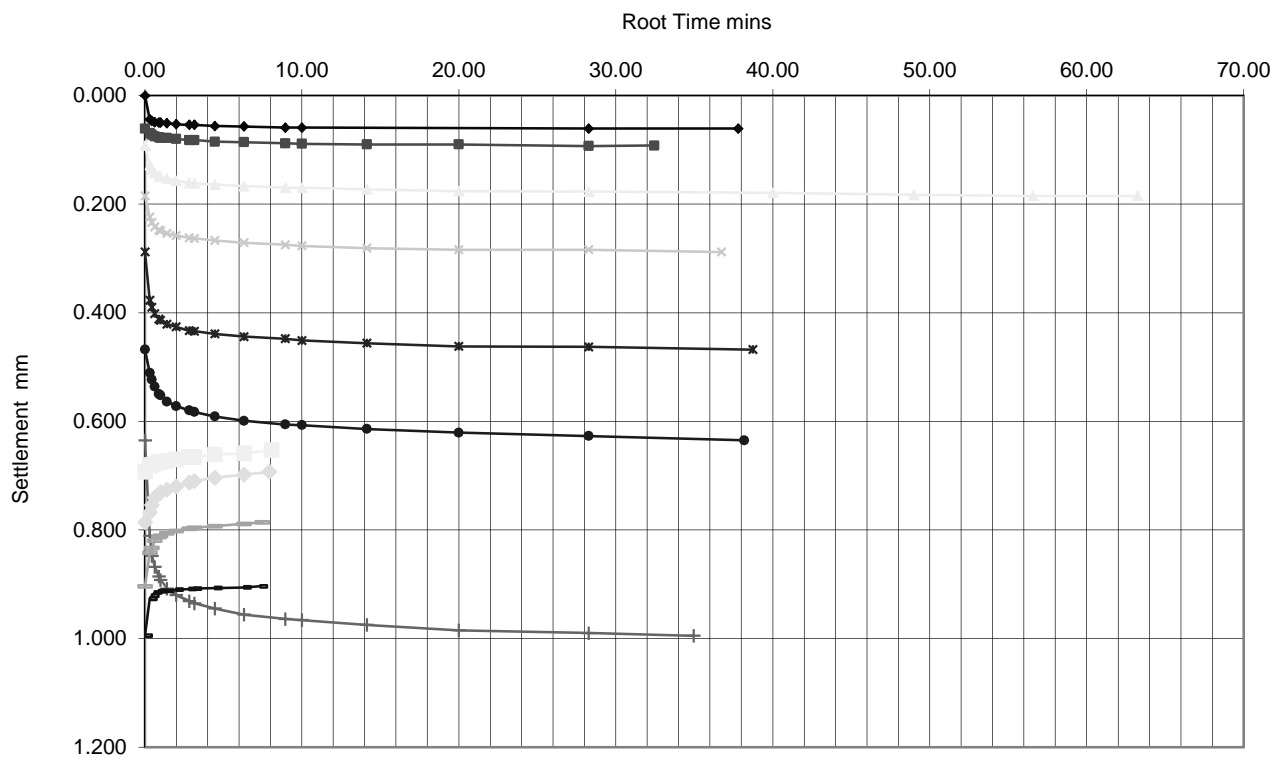
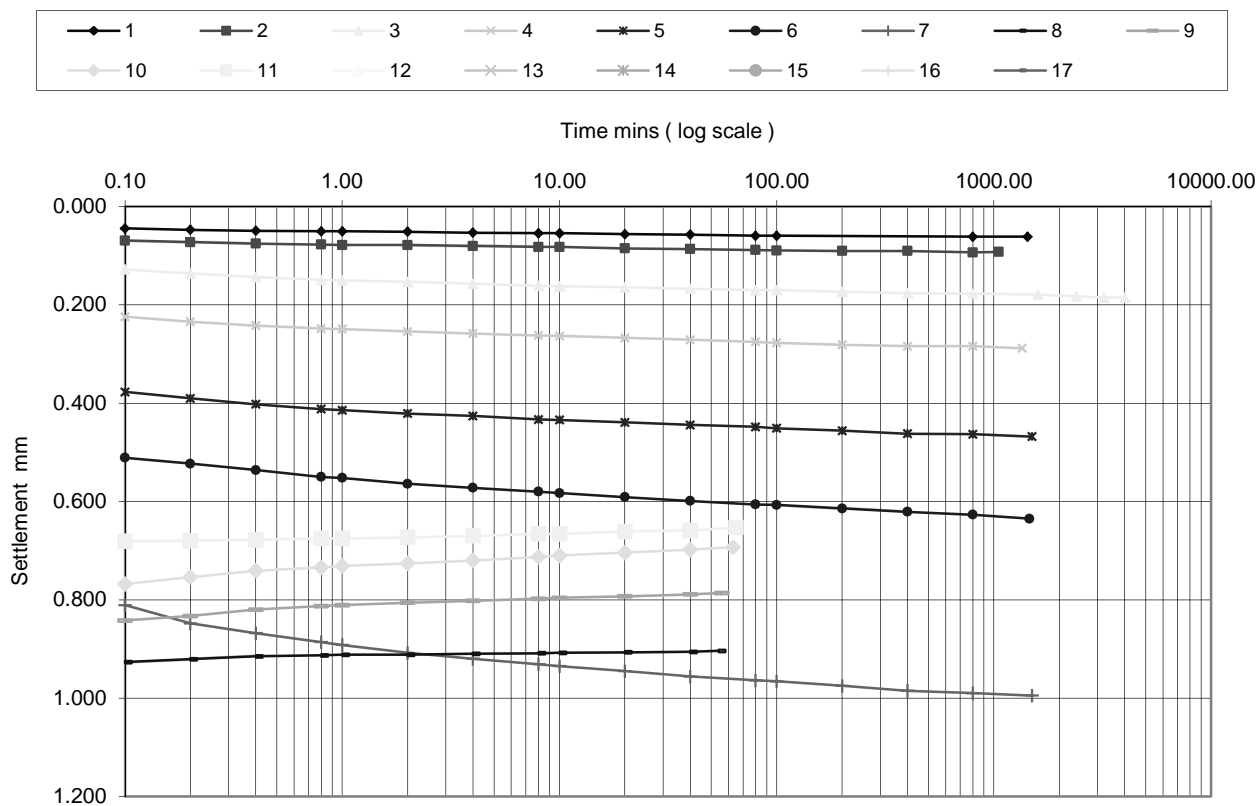


Loc. No. N4263-14  
Location DELLIMANA

Hole No. G1  
Sample No. U4  
Spec No.  
Top Depth 21.25  
Specimen height mm 20.03

Filename : G1-U4-  
Stage 1 [G1-U4--.xls]sheet1'

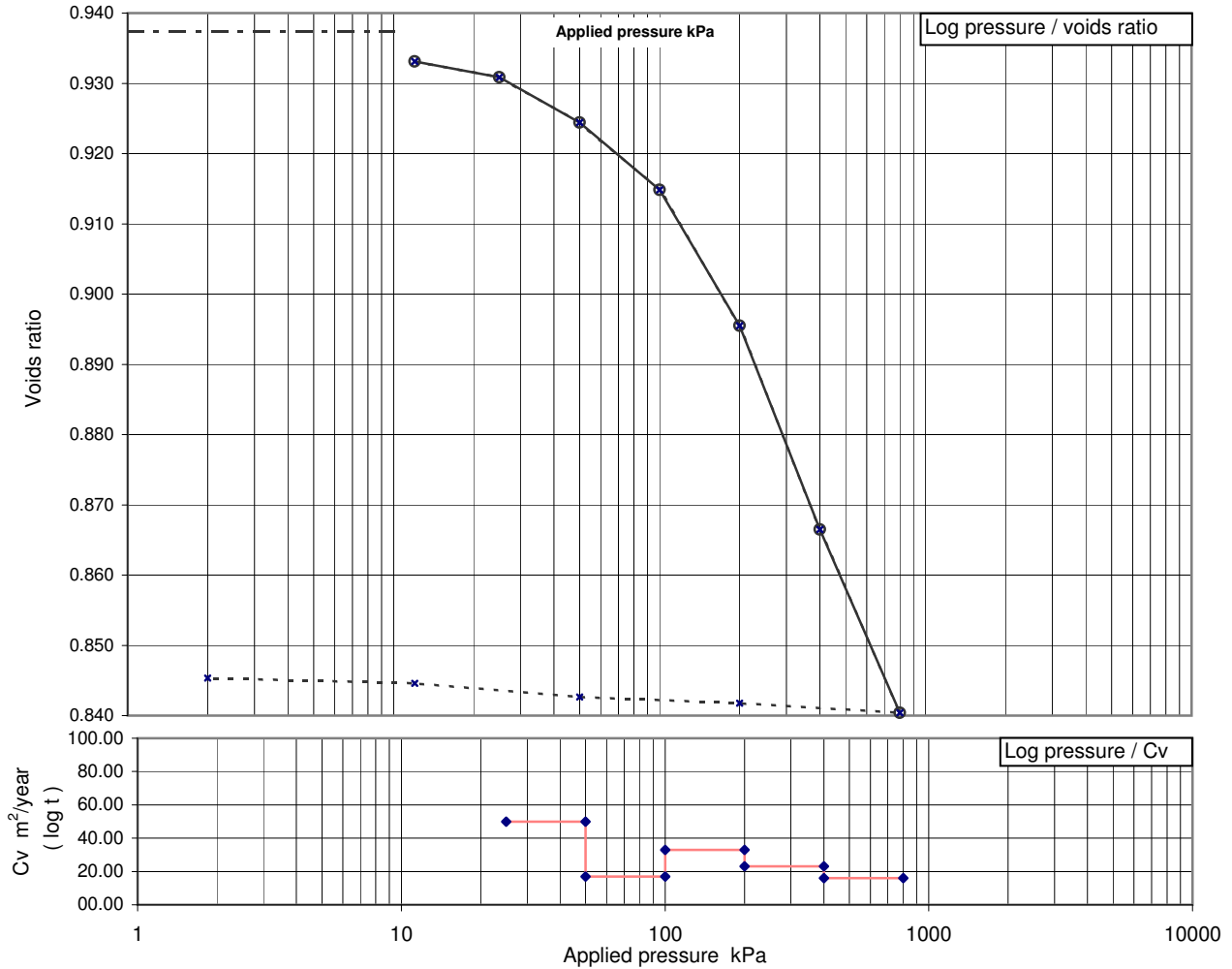
### Time v Settlement Plots



# ONE DIMENSIONAL CONSOLIDATION TEST

## BS 1377 : Part 5 : 1990 : clause 3

Project No	N4263-14	Sample Details:	Hole No	G2
Project Name	Dellimana		Depth (m BGL)	10.40
			Samp No	7
			Type	U
			ID	MASTER2069
			Spec Ref	



Soil description	Light brown slightly gravelly SAND.
Preparation	Undisturbed
Index properties (if available)	Liquid limit % Plastic limit %
Specimen details	Initial Final
Particle density	2.65 assumed Mg/m³
Diameter	50.05 mm
Height	20.05 19.10 mm
Voids ratio	0.937 0.845
Moisture content	30 29 %
Bulk density	1.78 1.85 Mg/m³
Dry density	1.37 1.44 Mg/m³
Saturation	86 91 %
Average temperature for test	21 °C
Swelling pressure	not measured kPa

Applied Pressure kPa	Voids ratio	M <sub>v</sub> m²/MN	C <sub>v</sub> (t <sub>50, log</sub> ) m²/year	C <sub>v</sub> (t <sub>90, root</sub> ) m²/year
0	0.9373			
12	0.9331	0.183	-	-
25	0.9309	0.088	-	-
50	0.9244	0.134	50	48
100	0.9148	0.099	17	18
200	0.8955	0.101	33	35
400	0.8665	0.076	23	25
800	0.8404	0.035	16	16
200	0.8418	0.001	-	-
50	0.8426	0.003	-	-
12	0.8446	0.028	-	-
2	0.8453	0.042	-	-

Notes : Insufficient movement after initial settlement on stage 1 and 2 to interpret t<sub>50</sub> and t<sub>90</sub> hence no C<sub>v</sub>'s

Specimen taken 110 mm from base of sample

QA Ref	SLR 5.3 Rev 140 Mar 12	ESG Environmental Scientifics Group	UKAS TESTING 1157	Printed:03/11/2014 12:55	Figure <b>OED</b>
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Loc. No. N4263-14  
Location DELLIMANA

Hole No. G2  
Sample No. 7  
Spec No.  
Top Depth 10.40  
Specimen height mm 20.04

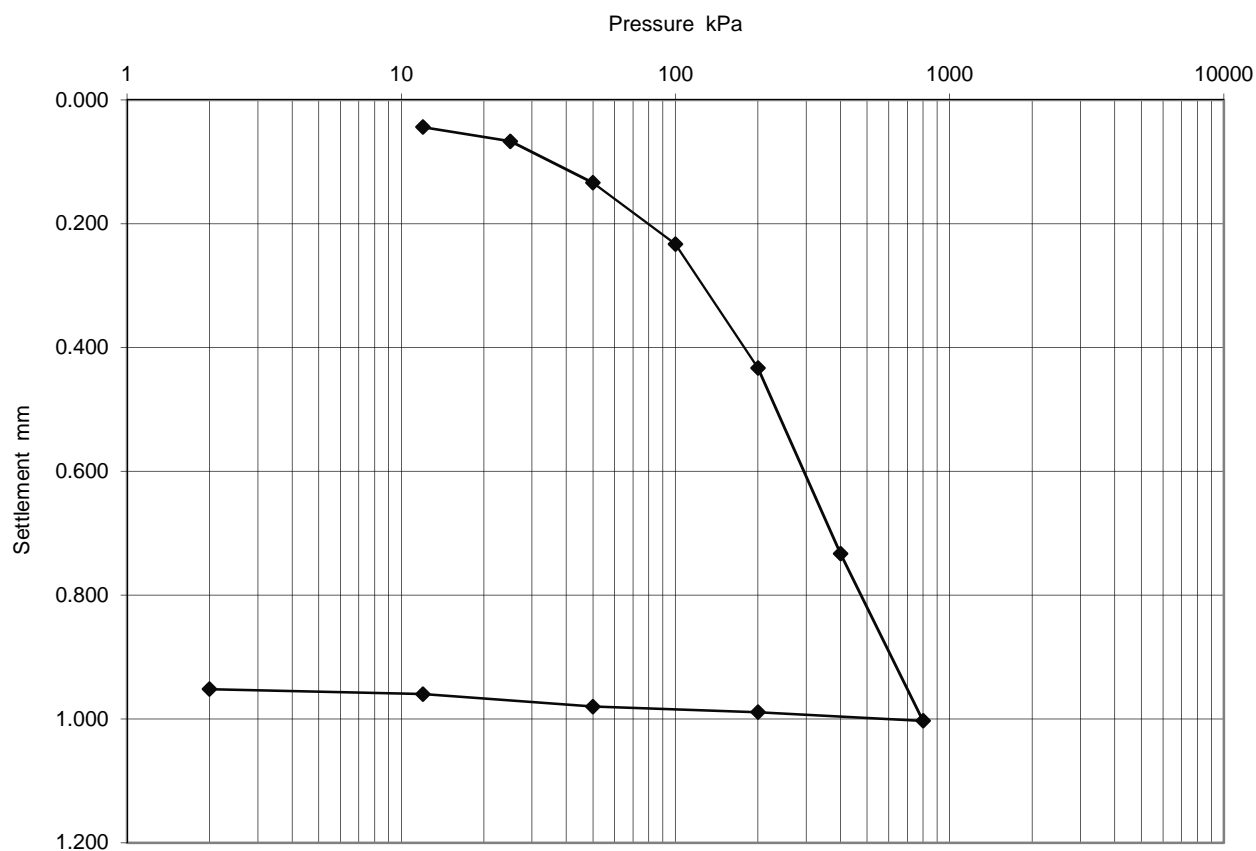
Filename : G2-7-  
Stage 1 [G2-7--.xls]sheet1'

### MANUAL INPUT

### COMPUTED VALUES - NOT MANUAL

Reading resolution 1 mm/division

Stage No.	Pressure kPa	correction mm	Temp°	Final settlement mm	t50 log mins	t90 root mins	Csec
1	12	0.001	21.1	0.044	*	*	0.0002
2	25	0.005	21	0.067	*	*	0.0006
3	50	0.011	20.9	0.134	0.2	0.9	0.0004
4	100	0.018	19.9	0.233	0.6	2.5	0.0006
5	200	0.032	20.8	0.433	0.3	1.2	0.0009
6	400	0.049	21	0.733	0.41	1.60	0.0014
7	800	0.069	21.1	1.003	0.57	2.50	0.0017
8	200	0.045	21.2	0.989			
9	50	0.020	21.1	0.980			
10	12	0.010	20.8	0.960			
11	2	0.000	21.3	0.952			
12							
13							
14							
15							
16							
17							

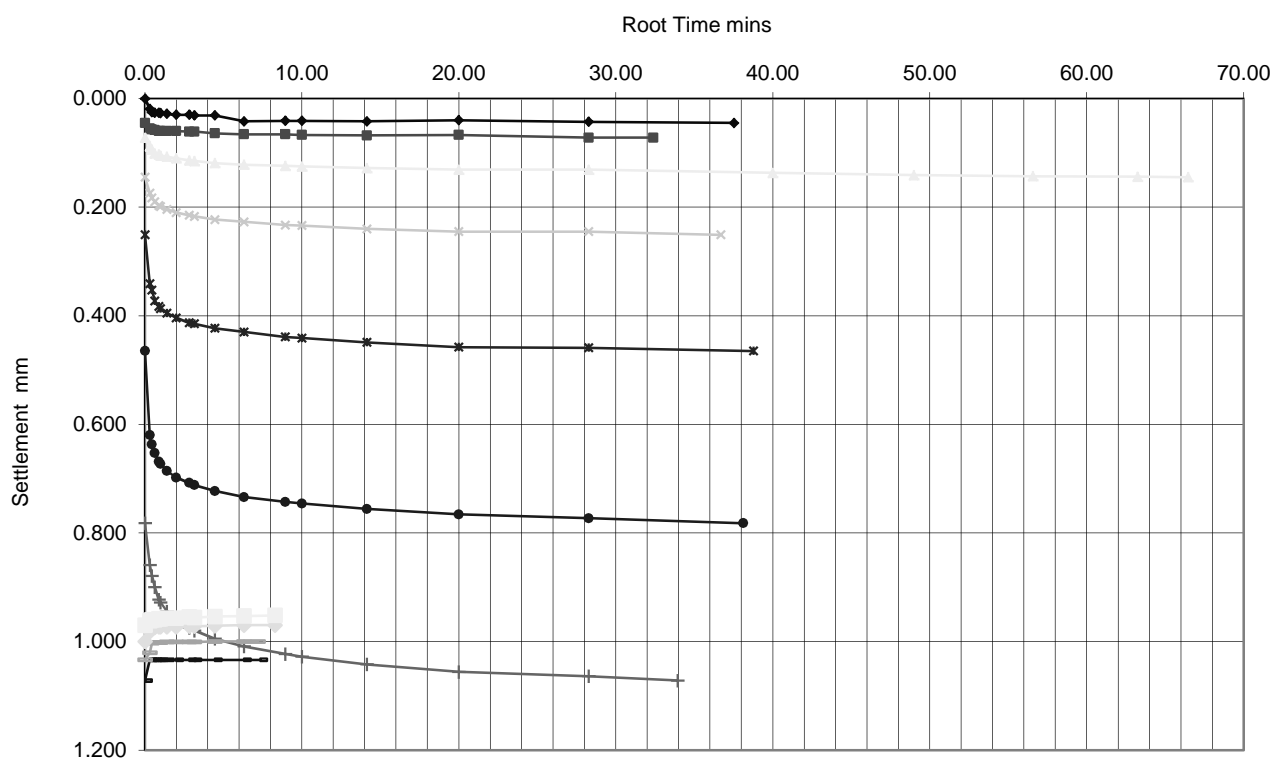
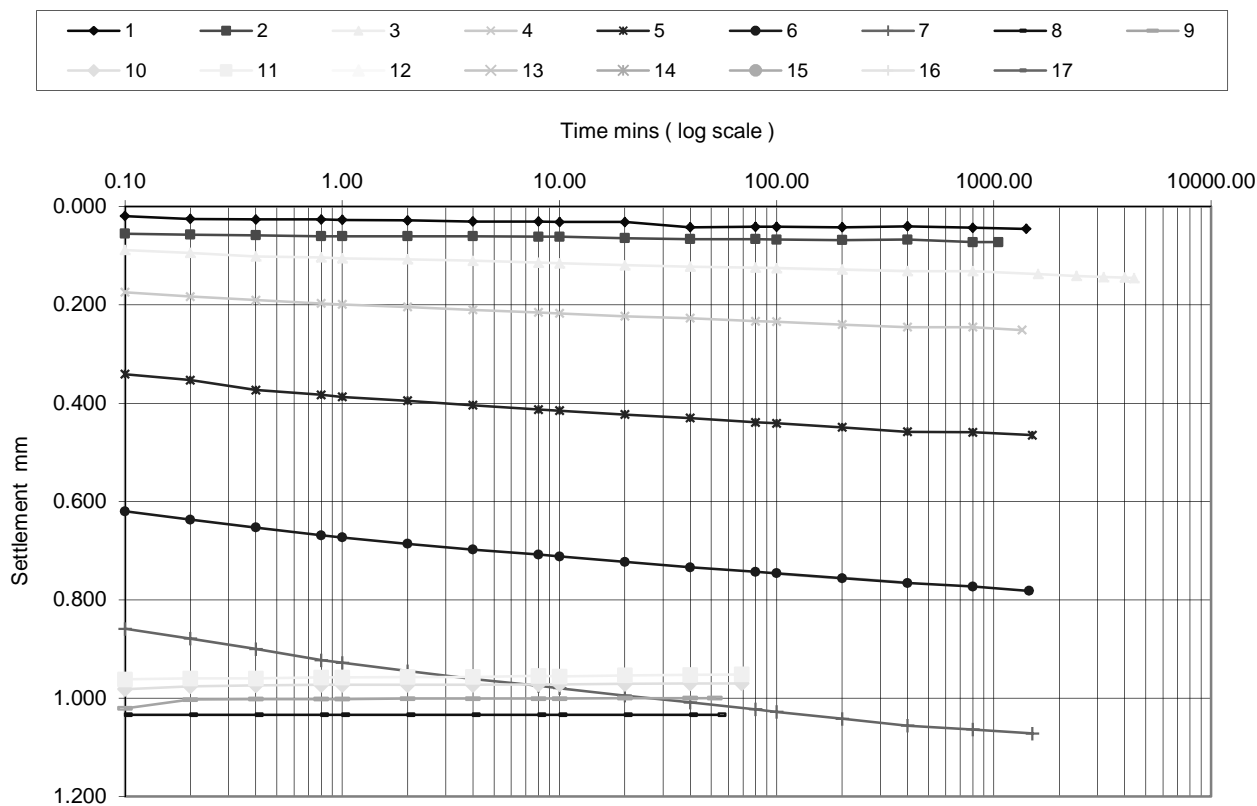


Loc. No. N4263-14  
Location DELLIMANA

Hole No. G2  
Sample No. 7  
Spec No.  
Top Depth 10.40  
Specimen height mm 20.04

Filename : G2-7-  
Stage 1 [G2-7--.xls]sheet1'

### Time v Settlement Plots



Loc. No. N4263-14  
Location DELLIMANA

Hole No. G3  
Sample No. 4  
Spec No.  
Top Depth 6.45  
Specimen height mm 19.99

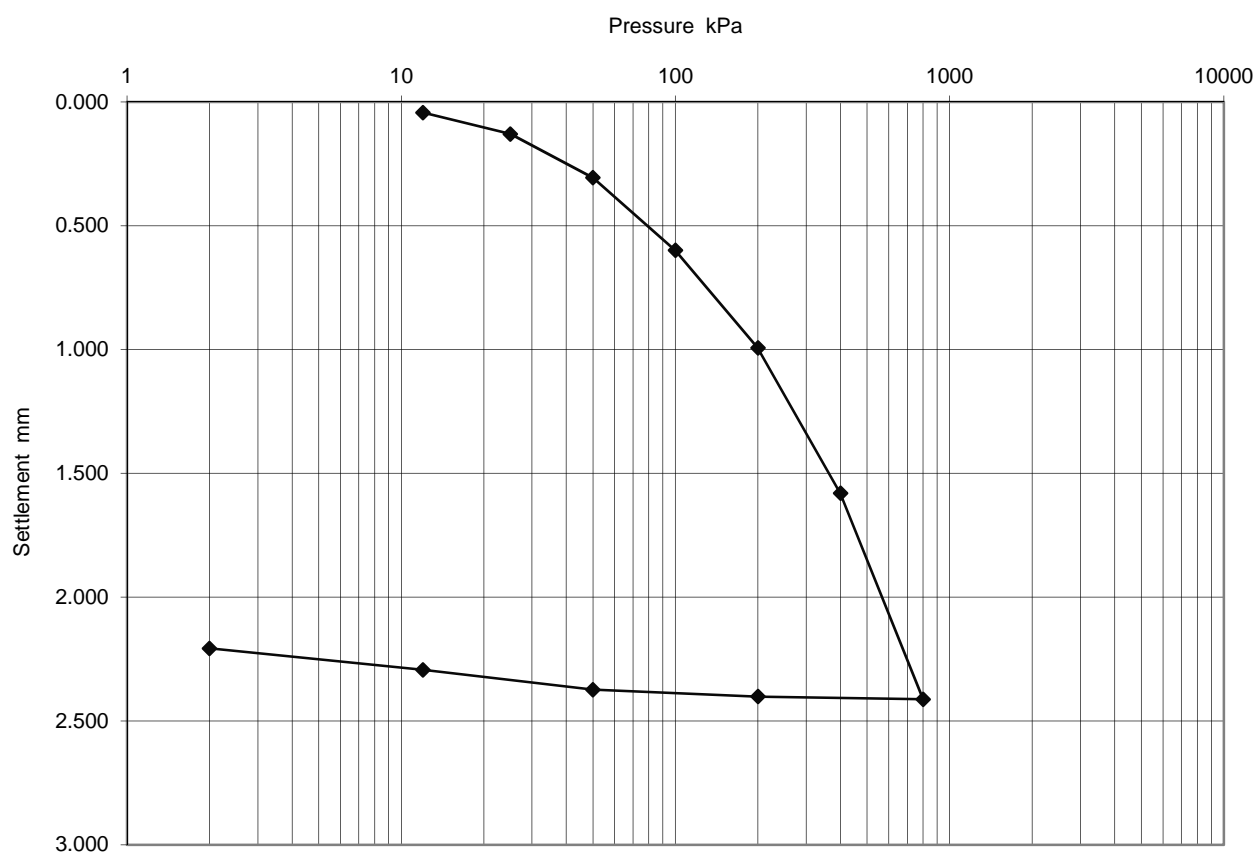
Filename : G3-4-  
Stage 1 [G3-4--.xls]sheet1'

### MANUAL INPUT

### COMPUTED VALUES - NOT MANUAL

Reading resolution 1 mm/division

Stage No.	Pressure kPa	correction mm	Temp°	Final settlement mm	t50 log mins	t90 root mins	Csec
1	12	0.000	21.2	0.043	0.5	2.0	0.0001
2	25	0.003	21.1	0.130	0.5	2.0	0.0008
3	50	0.009	20.8	0.306	0.4	1.6	0.0008
4	100	0.015	21.3	0.600	0.2	0.7	0.0014
5	200	0.030	20.7	0.994	0.3	1.3	0.0017
6	400	0.049	20	1.581	0.5	2.1	0.0018
7	800	0.071	19.9	2.413	0.7	2.8	0.0012
8	200	0.040	20.7	2.402			
9	50	0.015	20.7	2.374			
10	12	0.001	20.7	2.294			
11	2	0.000	20.7	2.207			
12							
13							
14							
15							
16							
17							



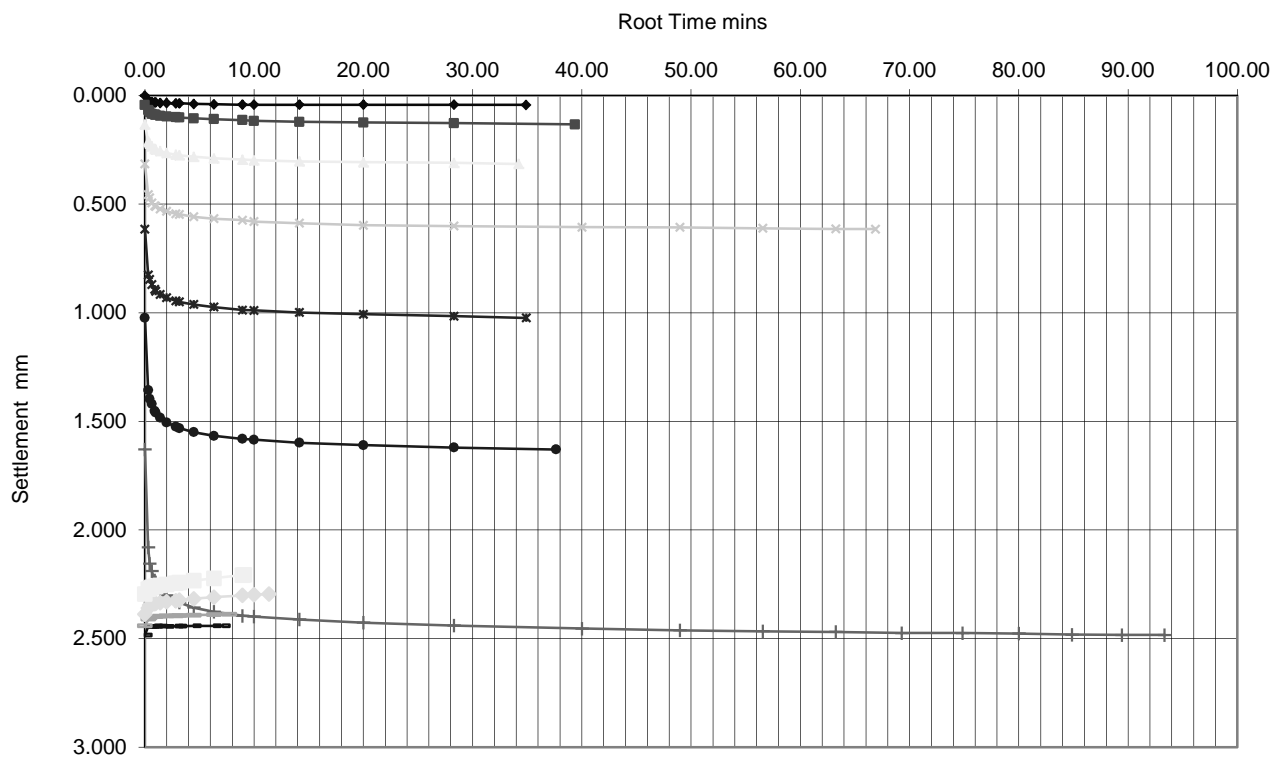
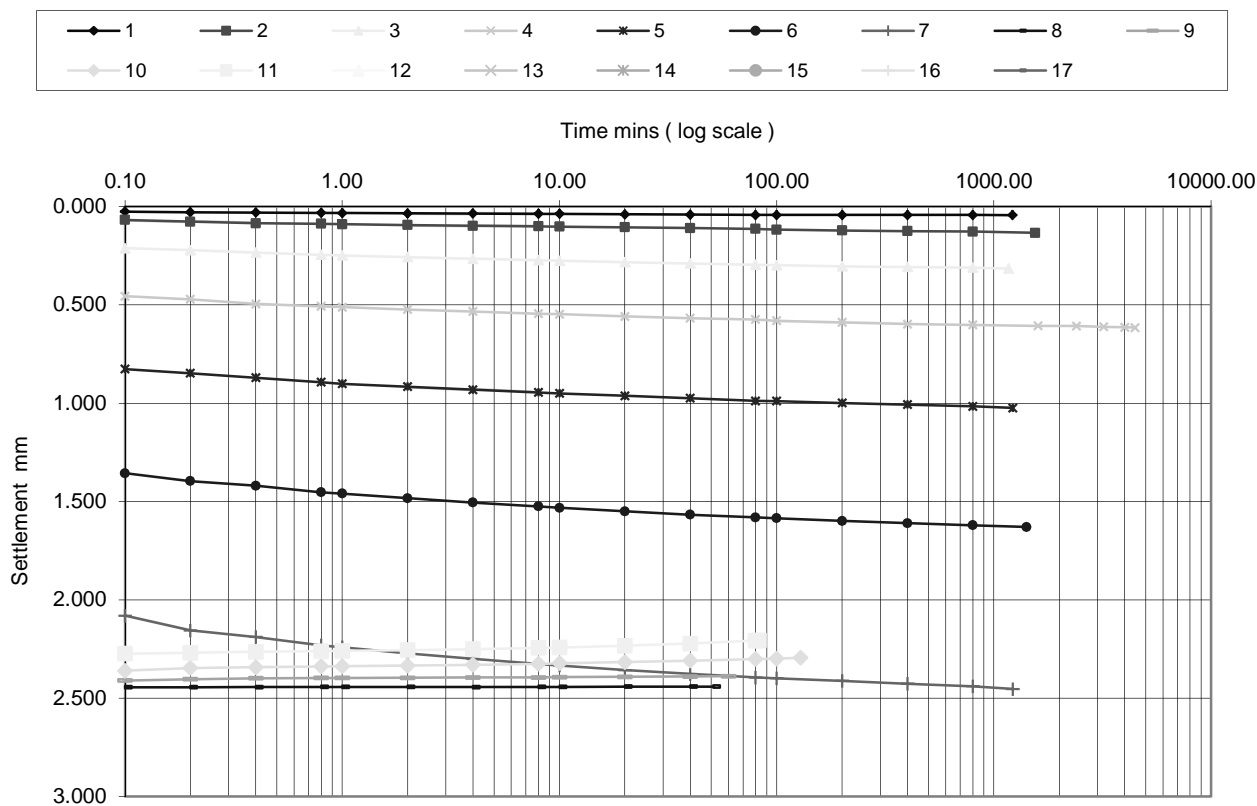


Loc. No. N4263-14  
Location DELLIMANA

Hole No. G3  
Sample No. 4  
Spec No.  
Top Depth 6.45  
Specimen height mm 19.99

Filename : G3-4-  
Stage 1 [G3-4--.xls]sheet1'

### Time v Settlement Plots



ONE DIMENSIONAL CONSOLIDATION TEST

BS 1377 : Part 5 : 1990 : clause 3

Project No

N4263-14

Project Name

Dellimana

Sample Details:

Hole No

G3

Depth (m BGL)

6.45

Samp No

4

Type

U

ID

MASTER2072

Spec Ref

Applied pressure kPa

Log pressure / voids ratio

Voids ratio

1.550

1.500

1.450

1.400

1.350

1.300

1.250

1.200

1.150

1.100

1.050

Cv m²/year (log t)

Log pressure / Cv

Cv m²/year (log t)

50.00

40.00

30.00

20.00

10.00

00.00

Applied pressure kPa

1

10

100

1000

10000

Soil description

Preparation

Index properties

Specimen details

Swelling pressure

Notes :

Grey silty SAND with frequent rootlets.

Undisturbed

Liquid limit %

Plastic limit %

Initial

Final

2.65

assumed

Mg/m³

50.00

mm

19.99

17.79

mm

1.542

1.261

mm

55

44

%

1.62

1.68

Mg/m³

1.04

1.17

Mg/m³

95

92

%

21

°C

not measured

kPa

Specimen taken

30 mm from base of sample

Applied Pressure

Voids ratio

Mv

Cv (t50, log)

Cv (t90, root)

kPa

m²/MN

m²/year

m²/year

0

1.5417

12

1.5362

0.179

20

21

25

1.5252

0.335

20

21

50

1.5028

0.354

25

26

100

1.4654

0.299

48

58

200

1.4153

0.203

31

31

400

1.3407

0.154

18

18

800

1.2349

0.113

12

13

200

1.2363

0.001

-

-

50

1.2399

0.011

-

-

12

1.2500

0.119

-

-

2

1.2611

0.492

-

-

QA Ref

SLR 5.3

Rev 140

Mar 12

ESG

Environmental Scientifics Group

UKAS

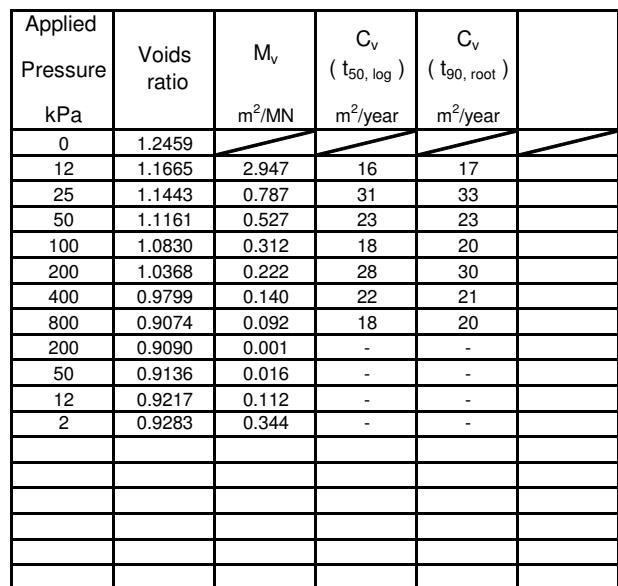
1157

Printed:21/11/2014 14:41

Figure

OED 1

ONE DIMENSIONAL CONSOLIDATION TEST						
BS 1377 : Part 5 : 1990 : clause 3						
Project No	N4263-14	Sample Details:	Hole No	G3		
Project Name	Dellimana		Depth (m BGL)	9.90		
			Samp No	5	Type	U
			ID	MASTER2073		
			Spec Ref			



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Loc. No. N4263-14  
Location DELLIMANA

Hole No. G3  
Sample No. 5  
Spec No.  
Top Depth 9.90  
Specimen height mm 20.05

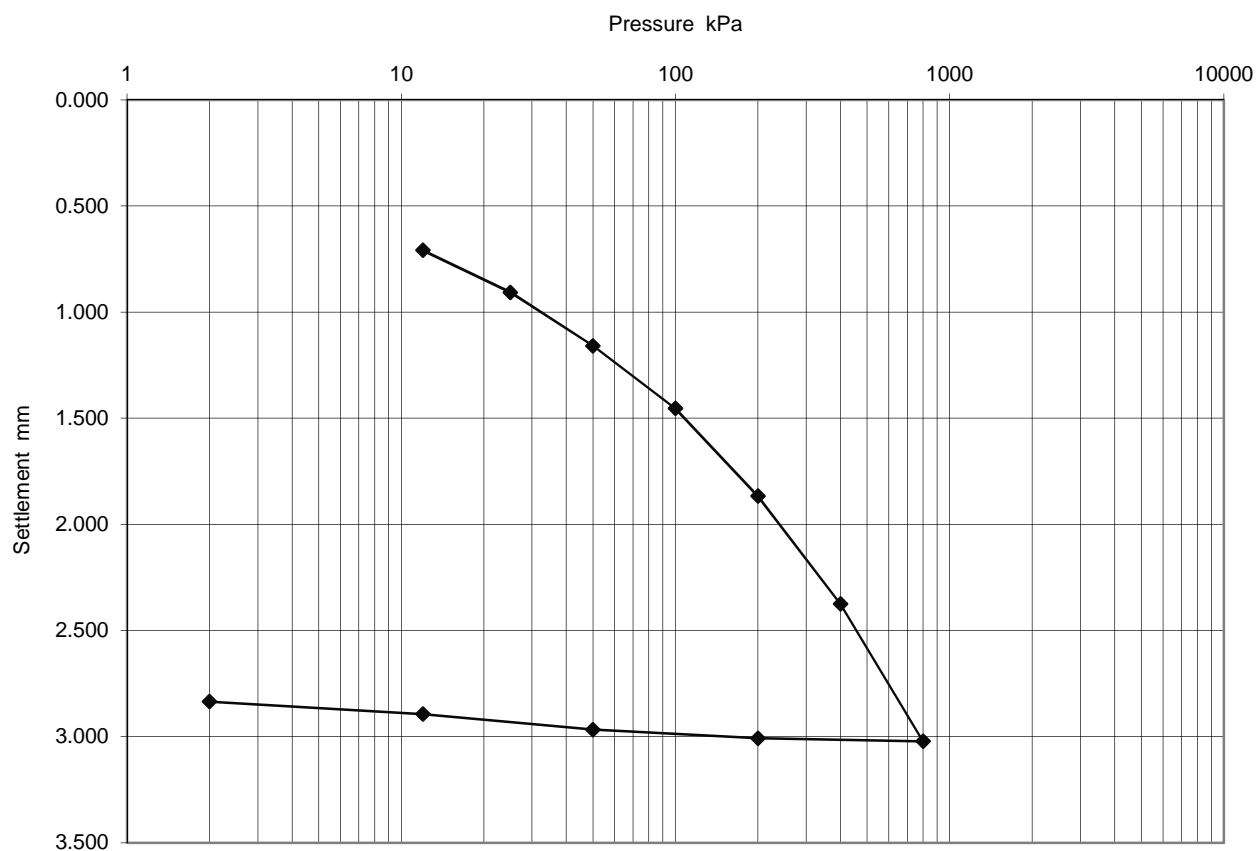
Filename : G3-5-  
Stage 1 [G3-5--.xls]sheet1'

### MANUAL INPUT

### COMPUTED VALUES - NOT MANUAL

Reading resolution 1 mm/division

Stage No.	Pressure kPa	correction mm	Temp°	Final settlement mm	t50 log mins	t90 root mins	Csec
1	12	0.001	21.1	0.709	0.6	2.4	0.0008
2	25	0.005	21	0.907	0.3	1.2	0.0007
3	50	0.010	20.9	1.159	0.4	1.7	0.0010
4	100	0.019	19.9	1.454	0.5	2.0	0.0008
5	200	0.029	20.8	1.867	0.3	1.2	0.0010
6	400	0.046	21	2.375	0.36	1.61	0.0016
7	800	0.070	21.1	3.022	0.42	1.60	0.0014
8	200	0.040	21.2	3.008			
9	50	0.030	21.1	2.967			
10	12	0.020	20.8	2.894			
11	2	0.000	21.3	2.835			
12							
13							
14							
15							
16							
17							

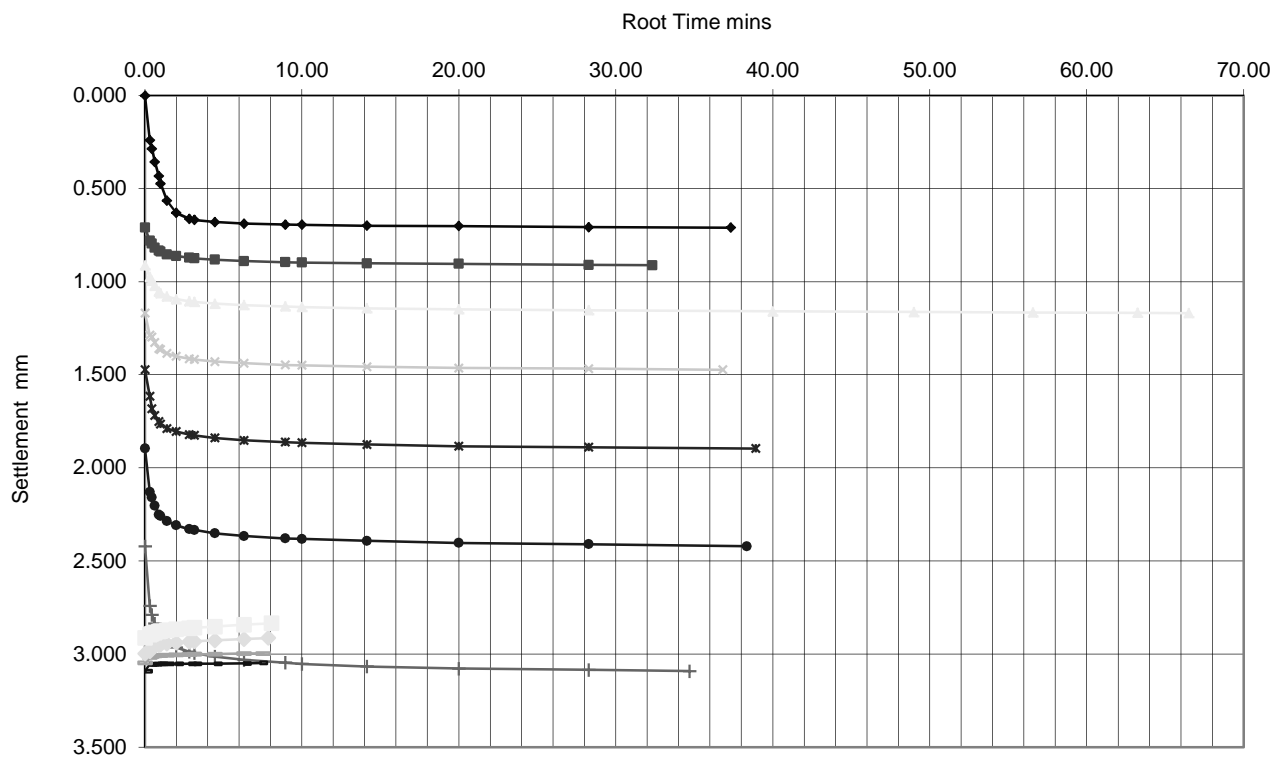
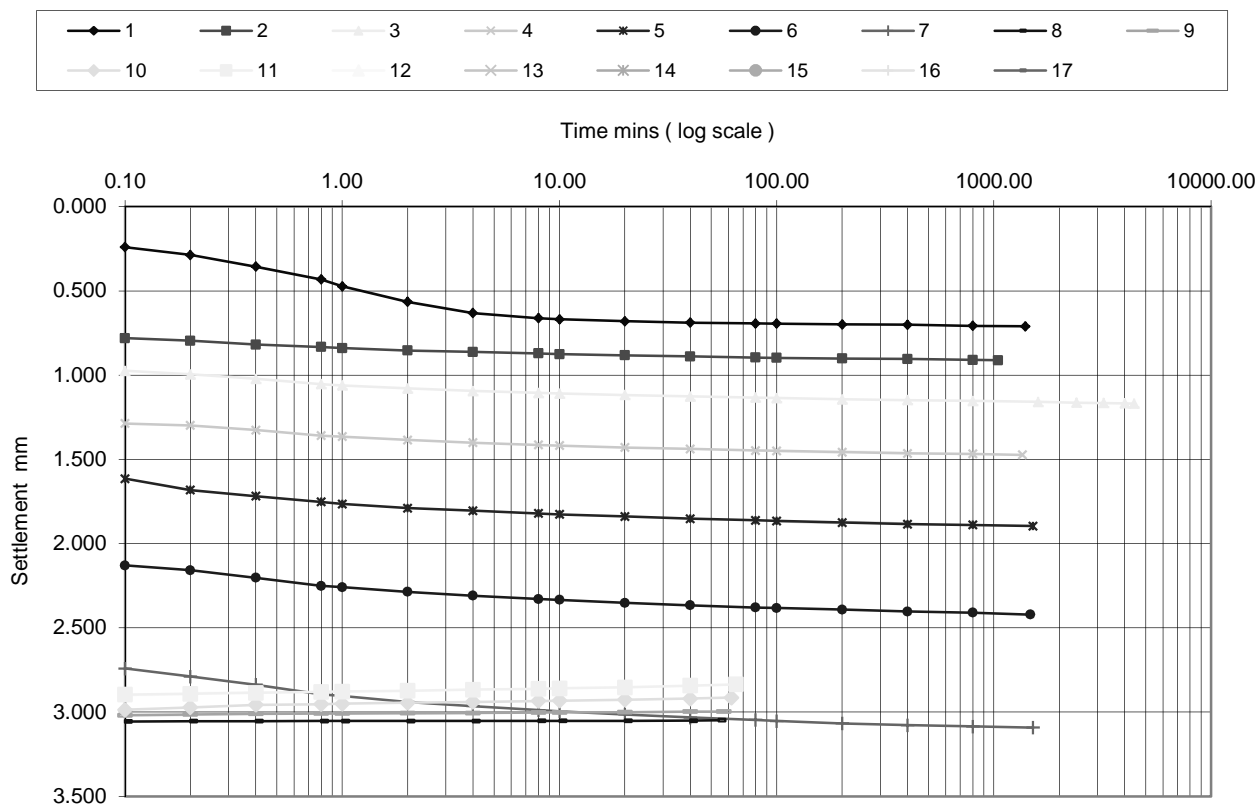


Loc. No. N4263-14  
Location DELLIMANA

Hole No. G3  
Sample No. 5  
Spec No.  
Top Depth 9.90  
Specimen height mm 20.05

Filename : G3-5-  
Stage 1 [G3-5--.xls]sheet1'

### Time v Settlement Plots



BS1377 : Part 8 : Clause 7 <b>Consolidated Undrained Triaxial Compression Test</b> <b>with Measurement of Pore Pressure</b>																																		
Borehole Number: G4 Sample Number: 3 Depth (m): -		Description: Firm brownish grey clayey SAND with abundant shell fragments and organic material. Sand is fine to medium.																																
<b>SPECIMEN DETAILS</b> Depth within original sample Orientation within original sample		50mm from top Vertical																																
<b>TEST DETAILS</b> Specimen Preparation Cell Preparation Specimen Number Initial Diameter Initial Length Initial Moisture Content Initial Wet Density Drainage Conditions		Undisturbed Checks performed in accordance with Clause 3.5 <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 25%;">Specimen No 1</th> <th style="width: 25%;">Specimen No 2</th> <th style="width: 25%;">Specimen No 3</th> </tr> </thead> <tbody> <tr> <td>37.9</td> <td>37.5</td> <td>37.4</td> </tr> <tr> <td>76.1</td> <td>75.8</td> <td>75.8</td> </tr> <tr> <td>55</td> <td>73</td> <td>60</td> </tr> <tr> <td>1.63</td> <td>1.68</td> <td>1.63</td> </tr> </tbody> </table> One end and radial boundary			Specimen No 1	Specimen No 2	Specimen No 3	37.9	37.5	37.4	76.1	75.8	75.8	55	73	60	1.63	1.68	1.63															
Specimen No 1	Specimen No 2	Specimen No 3																																
37.9	37.5	37.4																																
76.1	75.8	75.8																																
55	73	60																																
1.63	1.68	1.63																																
<b>SATURATION STAGE</b> Final Cell Pressure Final Pore Pressure Final Pore Pressure Parameter B Duration		<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 25%;">350</td> <td style="width: 25%;">400</td> <td style="width: 25%;">500</td> </tr> <tr> <td>344</td> <td>397</td> <td>502</td> </tr> <tr> <td>0.96</td> <td>0.99</td> <td>1.00</td> </tr> <tr> <td>2</td> <td>2</td> <td>2</td> </tr> </tbody> </table>			350	400	500	344	397	502	0.96	0.99	1.00	2	2	2																		
350	400	500																																
344	397	502																																
0.96	0.99	1.00																																
2	2	2																																
<b>CONSOLIDATION STAGE</b> Cell Pressure Back Pressure Effective Pressure Final Pore Pressure Final Pore Pressure Dissipation Duration		<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 25%;">350</td> <td style="width: 25%;">400</td> <td style="width: 25%;">500</td> </tr> <tr> <td>300</td> <td>300</td> <td>300</td> </tr> <tr> <td>50</td> <td>100</td> <td>200</td> </tr> <tr> <td>300</td> <td>300</td> <td>300</td> </tr> <tr> <td>100</td> <td>100</td> <td>100</td> </tr> <tr> <td>1</td> <td>1</td> <td>1</td> </tr> </tbody> </table>			350	400	500	300	300	300	50	100	200	300	300	300	100	100	100	1	1	1												
350	400	500																																
300	300	300																																
50	100	200																																
300	300	300																																
100	100	100																																
1	1	1																																
<b>SHEARING STAGE</b> Cell Pressure Rate of Axial Displacement Initial Pore Pressure Initial Effective Stress		<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 25%;">350</td> <td style="width: 25%;">400</td> <td style="width: 25%;">500</td> </tr> <tr> <td>0.012</td> <td>0.012</td> <td>0.012</td> </tr> <tr> <td>300</td> <td>300</td> <td>300</td> </tr> <tr> <td>50</td> <td>100</td> <td>200</td> </tr> </tbody> </table>			350	400	500	0.012	0.012	0.012	300	300	300	50	100	200																		
350	400	500																																
0.012	0.012	0.012																																
300	300	300																																
50	100	200																																
<b>CONDITIONS AT FAILURE</b> Pore Pressure Minor Effective Principal Stress Deviator Stress Major Effective Principal Stress Effective Principal Stress Ratio Pore Pressure Parameter A Axial Strain Correction applied to Deviator Stress Duration		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3">Maximum Principal Stress Ratio</th> </tr> </thead> <tbody> <tr> <td style="width: 25%;">325</td> <td style="width: 25%;">374</td> <td style="width: 25%;">459</td> </tr> <tr> <td>25</td> <td>26</td> <td>41</td> </tr> <tr> <td>164</td> <td>182</td> <td>320</td> </tr> <tr> <td>189</td> <td>208</td> <td>361</td> </tr> <tr> <td>7.48</td> <td>7.88</td> <td>8.82</td> </tr> <tr> <td>0.15</td> <td>0.41</td> <td>0.50</td> </tr> <tr> <td>20.1</td> <td>19.9</td> <td>20.0</td> </tr> <tr> <td>13</td> <td>14</td> <td>14</td> </tr> <tr> <td>1</td> <td>1</td> <td>1</td> </tr> </tbody> </table>			Maximum Principal Stress Ratio			325	374	459	25	26	41	164	182	320	189	208	361	7.48	7.88	8.82	0.15	0.41	0.50	20.1	19.9	20.0	13	14	14	1	1	1
Maximum Principal Stress Ratio																																		
325	374	459																																
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20.1	19.9	20.0																																
13	14	14																																
1	1	1																																
Final Moisture Content Final Wet Density		<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 25%;">48</td> <td style="width: 25%;">52</td> <td style="width: 25%;">45</td> </tr> <tr> <td>1.63</td> <td>1.70</td> <td>1.68</td> </tr> </tbody> </table>			48	52	45	1.63	1.70	1.68																								
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<b>EFFECTIVE STRESS PARAMETERS</b> Cohesion Angle of Shear Resistance		<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 25%;">0</td> <td style="width: 25%;"></td> <td style="width: 25%;"></td> </tr> <tr> <td>52</td> <td></td> <td></td> </tr> </tbody> </table>			0			52																										
0																																		
52																																		
<b>FAILURE SKETCHES</b>		<div style="display: flex; justify-content: space-around; align-items: center;"> </div>																																

Checked and Approved

Initials: RJP

Date: 25/11/14

Project Number: GEO / 21936

Project Name: DELIMARA REGASIFICATION PLANT

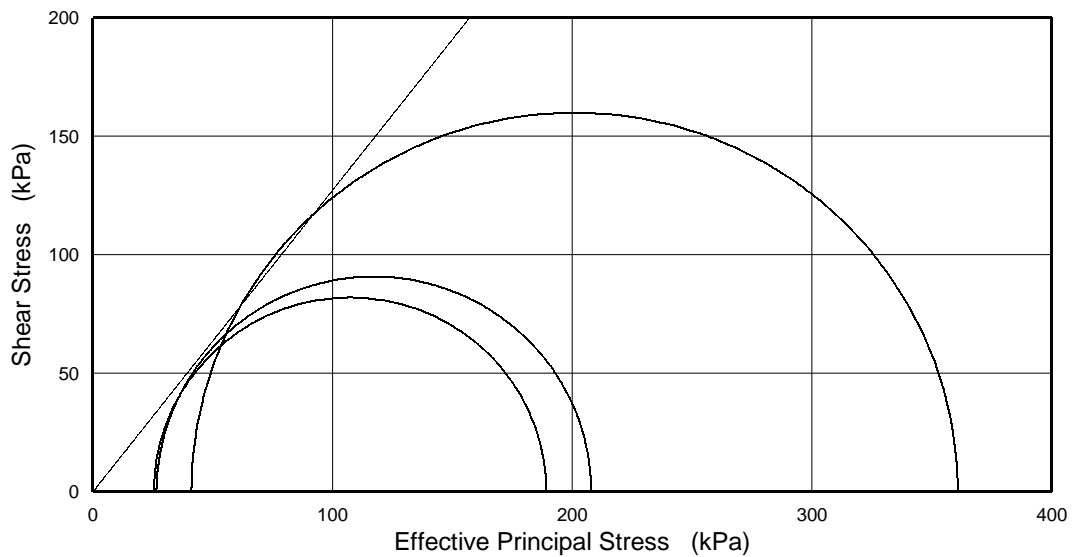
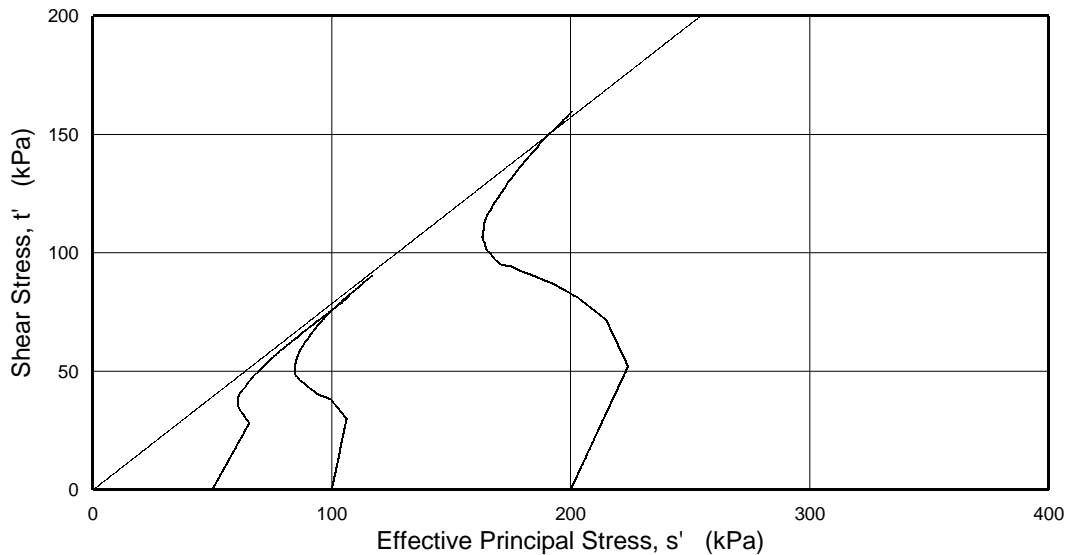
Project Number J2094



BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
**with Measurement of Pore Pressure**

Borehole Number: G4  
 Sample Number: 3  
 Depth (m): -

Description:  
 Firm brownish grey clayey SAND with abundant shell fragments and organic material. Sand is fine to medium.



Checked and  
Approved

Initials:

*RJP*

Date: 25/11/14

Project Number:

**GEO / 21936**

Project Name:

**DELIMARA REGASIFICATION PLANT**

**Project Number J2094**

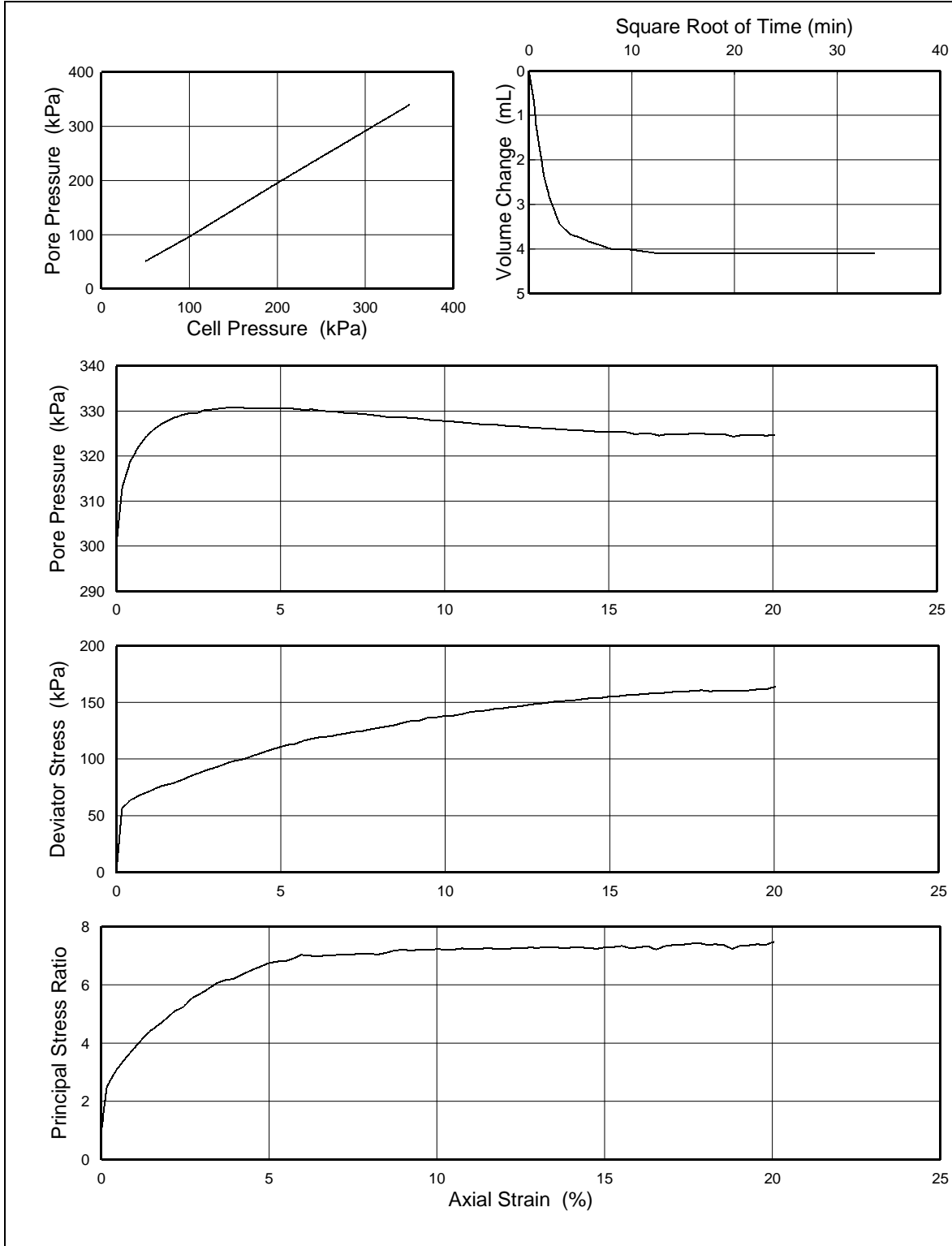


**GEOLABS**®

BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
 with Measurement of Pore Pressure

Borehole Number: G4  
 Sample Number: 3  
 Depth (m): -

**Specimen No 1**



**Checked and Approved**

Initials:

*RJP*

Date: 25/11/14

Project Number:

**GEO / 21936**

Project Name:

**DELIMARA REGASIFICATION PLANT**

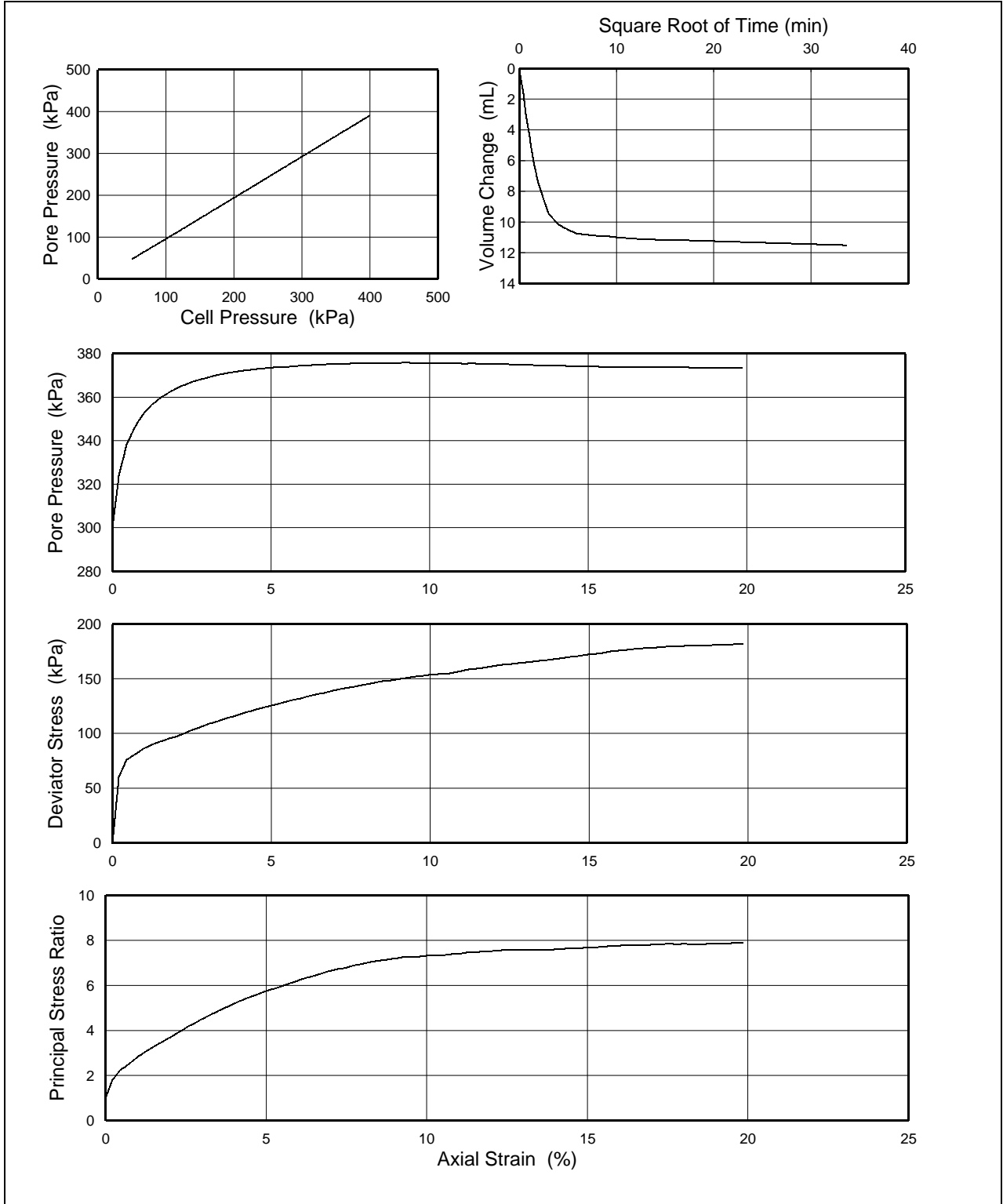
**Project Number J2094**



BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
 with Measurement of Pore Pressure

Borehole Number: G4  
 Sample Number: 3  
 Depth (m): -

**Specimen No 2**



**Checked and Approved**

Initials:

*RJP*

Date: 25/11/14

Project Number:

**GEO / 21936**

Project Name:

**DELIMARA REGASIFICATION PLANT**

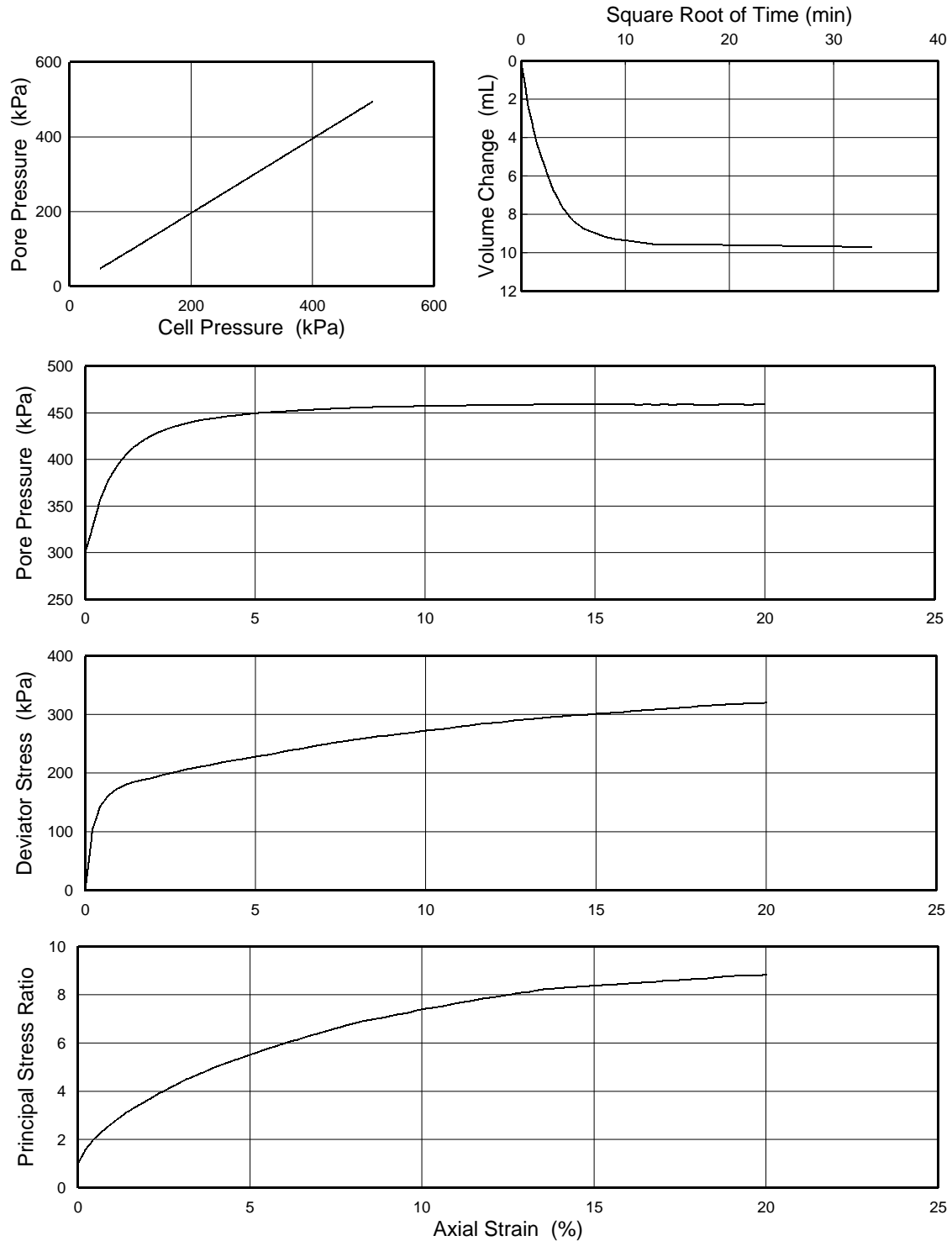
**Project Number J2094**



BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
with Measurement of Pore Pressure

Borehole Number: G4  
Sample Number: 3  
Depth (m): -

**Specimen No 3**



**Checked and Approved**

Initials:

*RJP*

Date: 25/11/14

Project Number:

**GEO / 21936**

Project Name:

**DELIMARA REGASIFICATION PLANT**

**Project Number J2094**



ONE DIMENSIONAL CONSOLIDATION TEST

BS 1377 : Part 5 : 1990 : clause 3

Project No

N4263-14

Project Name

Dellimana

Sample Details:

Hole No

G4

Depth (m BGL)

6.70

Samp No

6

Type

SB

ID

MASTER2078

Spec Ref

Applied pressure kPa

Log pressure / voids ratio

Log pressure / Cv

Soil description

Preparation

Index properties

Specimen details

Swelling pressure

Notes :

Cream SILT.

Undisturbed

Liquid limit %

Plastic limit %

Initial

Final

2.65

assumed

Mg/m³

50.07

mm

20.08

19.84

mm

0.622

0.602

22

22

%

1.99

2.02

Mg/m³

1.63

1.65

Mg/m³

92

97

%

21

°C

>25

kPa

Specimen taken

20 mm from base of sample

Applied Pressure

Voids ratio

M<sub>v</sub>

C<sub>v</sub> (t<sub>50, log</sub>)

C<sub>v</sub> (t<sub>90, root</sub>)

kPa

m²/MN

m²/year

m²/year

25

0.6219

50

0.6190

0.070

34

39

100

0.6140

0.062

25

29

200

0.6059

0.051

52

55

400

0.5926

0.041

33

30

800

0.5747

0.028

48

52

200

0.5796

0.005

-

-

50

0.5887

0.039

-

-

12

0.5979

0.151

-

-

2

0.6025

0.288

-

-

QA Ref

SLR 5.3

Rev 140

Mar 12

ESG

Environmental Scientifics Group

UKAS

1157

Printed:03/11/2014 12:21

Figure

OED

Loc. No. N4263-14  
Location DELLIMANA

Hole No. G4  
Sample No. 6-SB  
Spec No.  
Top Depth 6.70  
Specimen height mm 20.07

Filename : G4-6-SB-  
Stage 1 [G4-6-SB--.xls]sheet1'

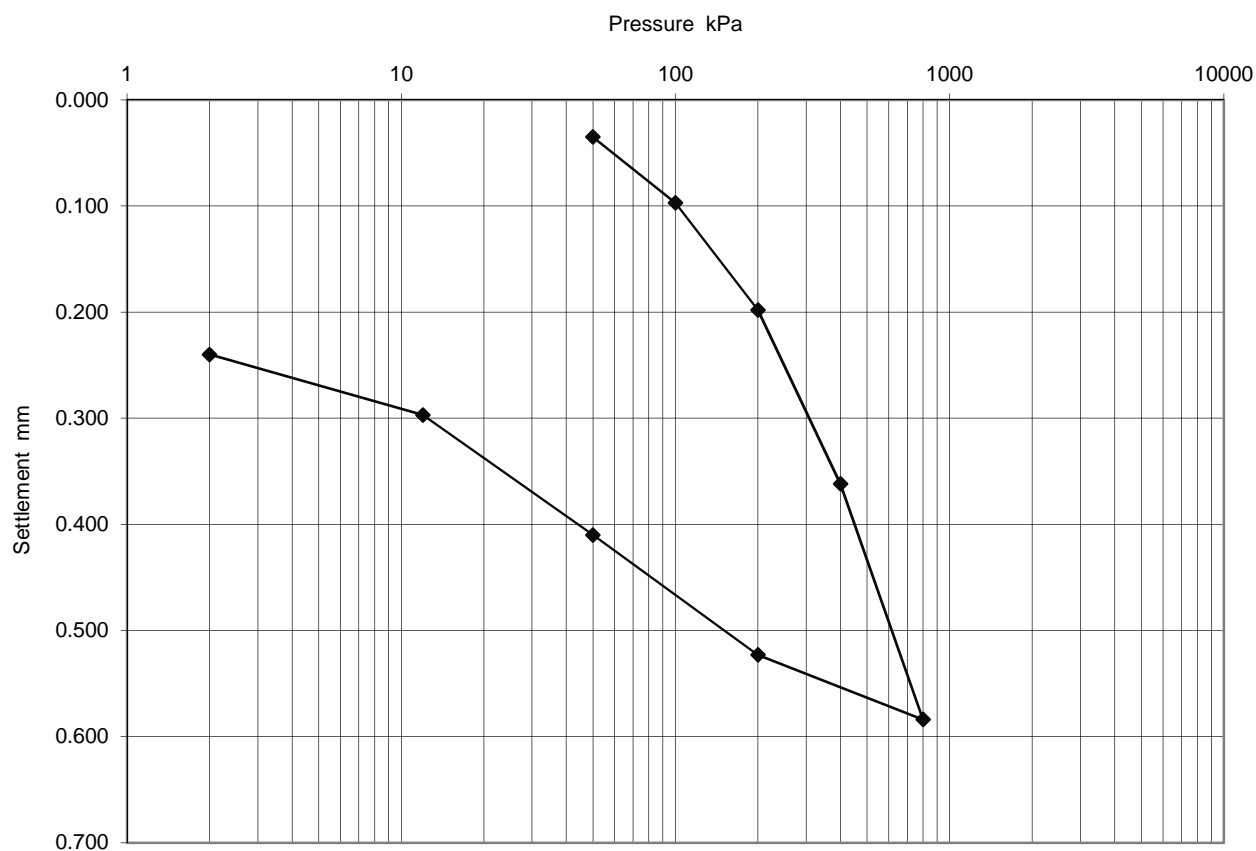
### MANUAL INPUT

Reading resolution 1 mm/division

Stage No.	Pressure	correction	Temp°
SWELLED	25	0.007	
1	50	0.008	21
2	100	0.018	20.9
3	200	0.034	19.9
4	400	0.061	20.8
5	800	0.076	21
6	200	0.043	21.1
7	50	0.018	21.2
8	12	0.003	21.1
9	2	0.000	20.8
10			
11			
12			
13			
14			
15			
16			
17			

### COMPUTED VALUES - NOT MANUAL

Final			
settlement	t50 log	t90 root	Csec
mm	mins	mins	
0.035	0.3	1.1	0.0000
0.097	0.4	1.5	0.0003
0.198	0.2	0.8	0.0006
0.362	0.3	1.4	0.0009
0.584	0.2	0.8	0.0013
0.523			
0.410			
0.297			
0.240			





Loc. No. N4263-14

Location DELLIMANA

Hole No. G4

Sample No. 6-SB

Filename : G4-6-SB-

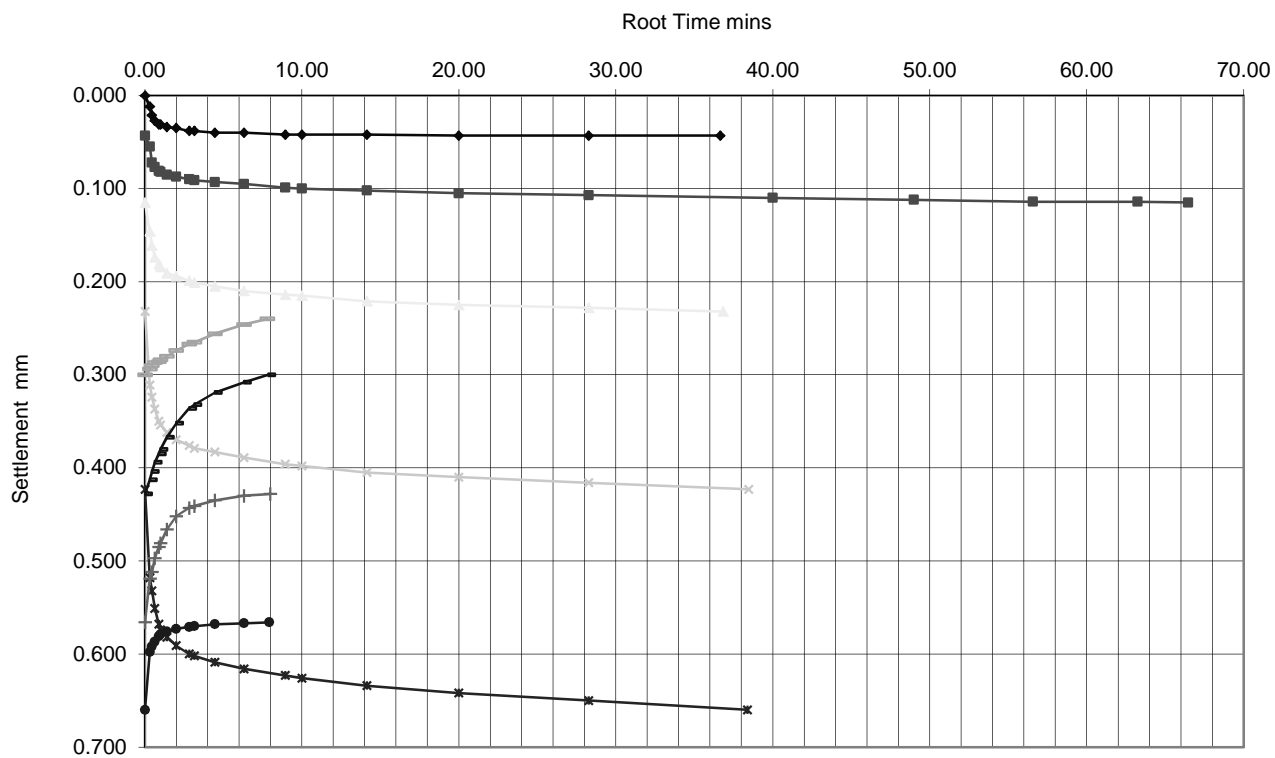
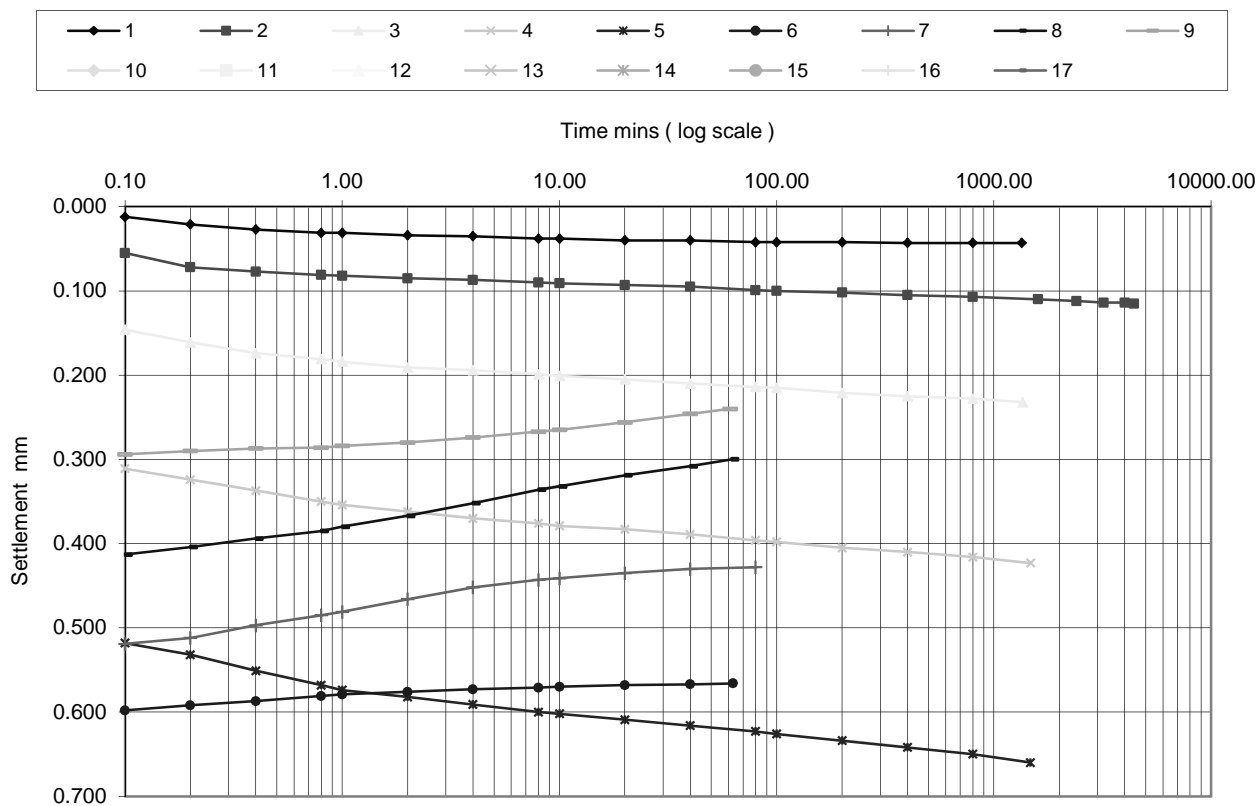
Spec No.

Top Depth 6.70

Stage 1 [G4-6-SB--.xls]sheet1'

Specimen height mm 20.07

### Time v Settlement Plots



BS1377 : Part 8 : Clause 7 <b>Consolidated Undrained Triaxial Compression Test</b> <b>with Measurement of Pore Pressure</b>																															
Borehole Number: G5 Sample Number: 4 Depth (m): 3.00		Description: Soft grey sandy CLAY with abundant shell fragments																													
<b>SPECIMEN DETAILS</b> Depth within original sample Orientation within original sample		20mm from top Vertical																													
<b>TEST DETAILS</b> Specimen Preparation Cell Preparation Specimen Number Initial Diameter <span style="float: right;">mm</span> Initial Length <span style="float: right;">mm</span> Initial Moisture Content <span style="float: right;">%</span> Initial Wet Density <span style="float: right;">Mg/m<sup>3</sup></span> Drainage Conditions		Undisturbed Checks performed in accordance with Clause 3.5 <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th style="width: 25%;">Specimen No 1</th> <th style="width: 25%;">Specimen No 2</th> <th style="width: 25%;">Specimen No 3</th> </tr> </thead> <tbody> <tr> <td>37.5</td> <td>37.3</td> <td>37.8</td> </tr> <tr> <td>68.3</td> <td>68.2</td> <td>73.4</td> </tr> <tr> <td>40</td> <td>43</td> <td>41</td> </tr> <tr> <td>2.10</td> <td>2.14</td> <td>1.94</td> </tr> </tbody> </table> One end and radial boundary			Specimen No 1	Specimen No 2	Specimen No 3	37.5	37.3	37.8	68.3	68.2	73.4	40	43	41	2.10	2.14	1.94												
Specimen No 1	Specimen No 2	Specimen No 3																													
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68.3	68.2	73.4																													
40	43	41																													
2.10	2.14	1.94																													
<b>SATURATION STAGE</b> Final Cell Pressure <span style="float: right;">kPa</span> Final Pore Pressure <span style="float: right;">kPa</span> Final Pore Pressure Parameter B Duration <span style="float: right;">day(s)</span>		<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>340</td> <td>380</td> <td>460</td> </tr> <tr> <td>339</td> <td>379</td> <td>449</td> </tr> <tr> <td>0.95</td> <td>0.99</td> <td>0.95</td> </tr> <tr> <td>2</td> <td>2</td> <td>2</td> </tr> </tbody> </table>			340	380	460	339	379	449	0.95	0.99	0.95	2	2	2															
340	380	460																													
339	379	449																													
0.95	0.99	0.95																													
2	2	2																													
<b>CONSOLIDATION STAGE</b> Cell Pressure <span style="float: right;">kPa</span> Back Pressure <span style="float: right;">kPa</span> Effective Pressure <span style="float: right;">kPa</span> Final Pore Pressure <span style="float: right;">kPa</span> Final Pore Pressure Dissipation <span style="float: right;">%</span> Duration <span style="float: right;">day(s)</span>		<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>340</td> <td>380</td> <td>460</td> </tr> <tr> <td>300</td> <td>300</td> <td>300</td> </tr> <tr> <td>40</td> <td>80</td> <td>160</td> </tr> <tr> <td>302</td> <td>301</td> <td>300</td> </tr> <tr> <td>95</td> <td>99</td> <td>100</td> </tr> <tr> <td>1</td> <td>1</td> <td>1</td> </tr> </tbody> </table>			340	380	460	300	300	300	40	80	160	302	301	300	95	99	100	1	1	1									
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40	80	160																													
302	301	300																													
95	99	100																													
1	1	1																													
<b>SHEARING STAGE</b> Cell Pressure <span style="float: right;">kPa</span> Rate of Axial Displacement <span style="float: right;">mm/min</span> Initial Pore Pressure <span style="float: right;">kPa</span> Initial Effective Stress <span style="float: right;">kPa</span>		<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>340</td> <td>380</td> <td>460</td> </tr> <tr> <td>0.0090</td> <td>0.0090</td> <td>0.0090</td> </tr> <tr> <td>302</td> <td>301</td> <td>300</td> </tr> <tr> <td>38</td> <td>79</td> <td>160</td> </tr> </tbody> </table>			340	380	460	0.0090	0.0090	0.0090	302	301	300	38	79	160															
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302	301	300																													
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11	12	12																													
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2.17	2.24	2.02																													
<b>EFFECTIVE STRESS PARAMETERS</b> Cohesion <span style="float: right;">kPa</span> Angle of Shear Resistance <span style="float: right;">degrees</span>		<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>9</td> <td></td> <td></td> </tr> <tr> <td>40</td> <td></td> <td></td> </tr> </tbody> </table>			9			40																							
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<b>FAILURE SKETCHES</b>		<div style="display: flex; justify-content: space-around; align-items: center;"> </div>																													

Checked and Approved

Initials: **RJP**

Date: 27/11/14

Project Number: **GEO / 21936**

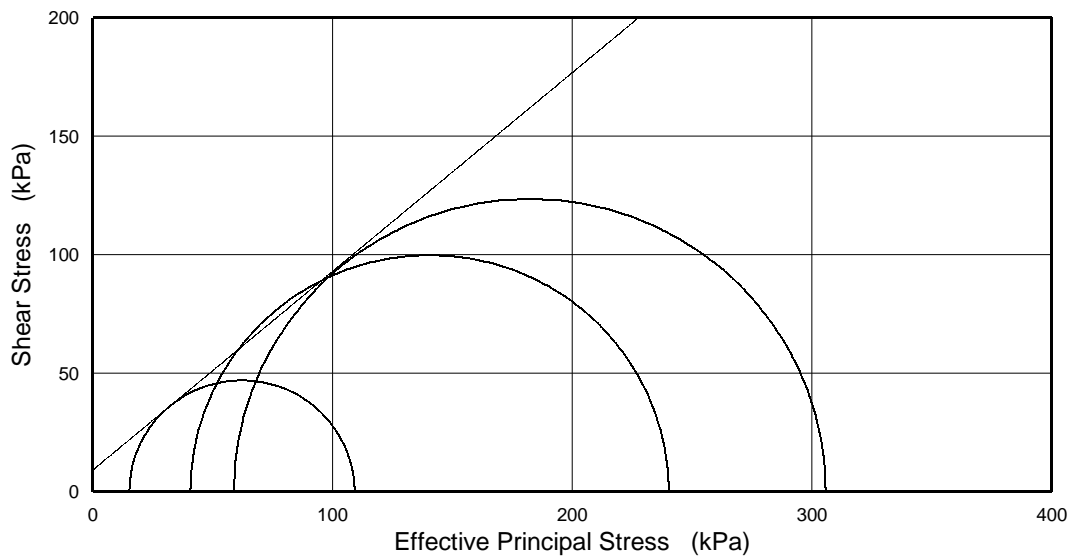
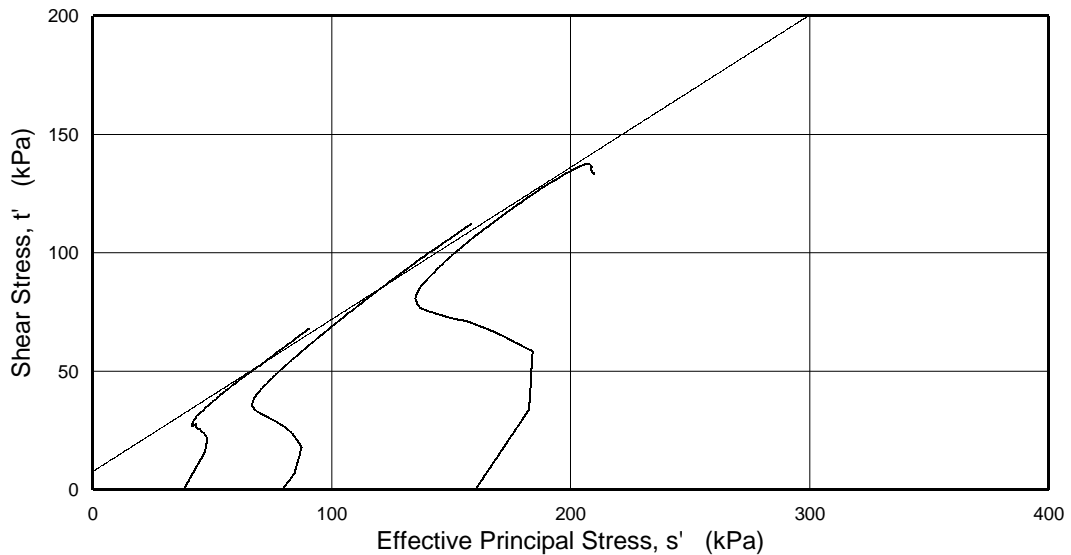
Project Name: **DELIMARA REGASIFICATION PLANT**

**Project Number J2094**

BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
 with Measurement of Pore Pressure

Borehole Number: G5  
 Sample Number: 4  
 Depth (m): 3.00

Description:  
 Soft grey sandy CLAY with abundant shell fragments



Checked and  
Approved

Initials:

*RJP*

Date: 27/11/14

Project Number:

**GEO / 21936**

Project Name:

**DELIMARA REGASIFICATION PLANT**  
**Project Number J2094**

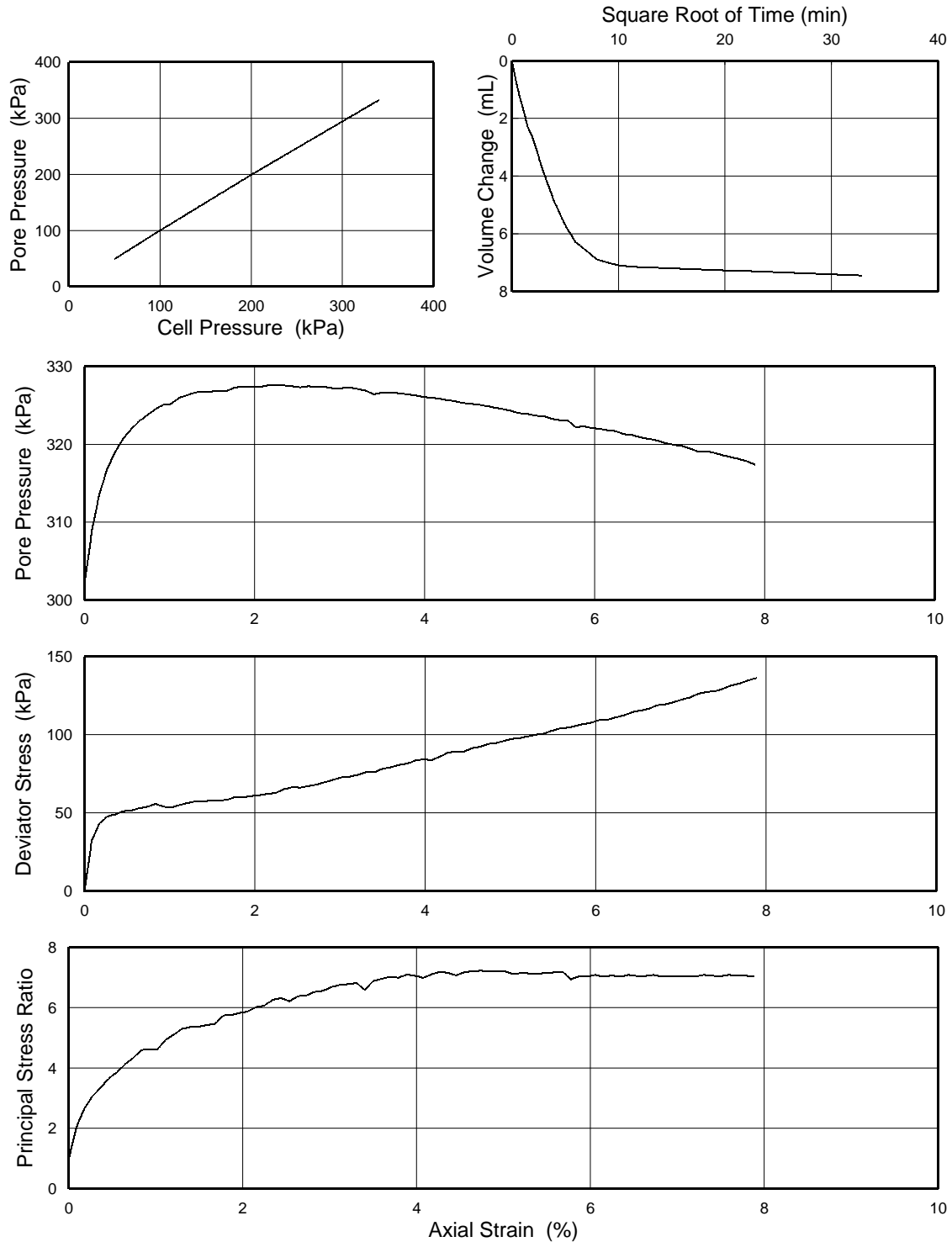


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BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
 with Measurement of Pore Pressure

Borehole Number: G5  
 Sample Number: 4  
 Depth (m): 3.00

**Specimen No 1**



**Checked and Approved**

Initials:

*RJP*

Date: 27/11/14

Project Number:

**GEO / 21936**

Project Name:

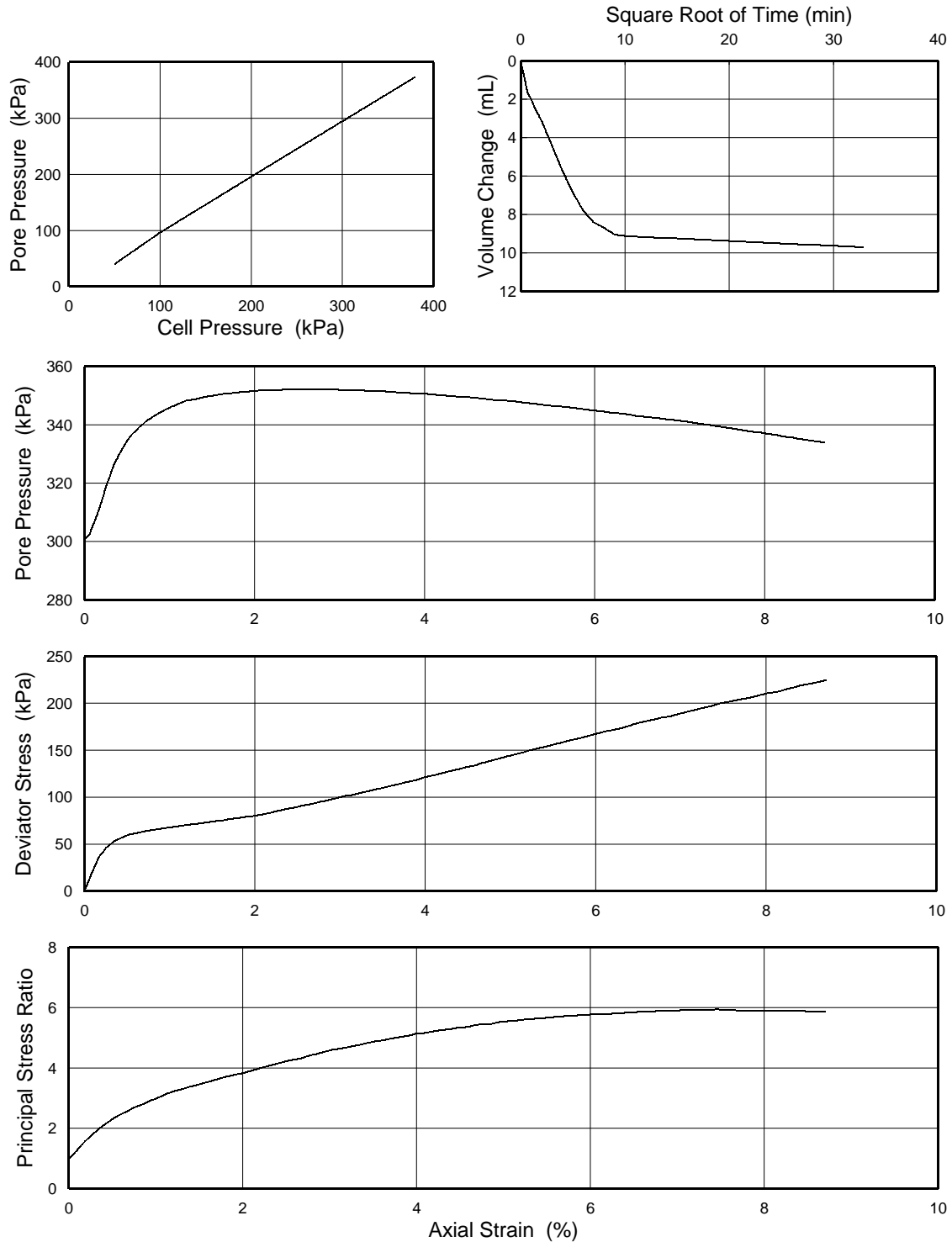
**DELIMARA REGASIFICATION PLANT**  
**Project Number J2094**



BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
 with Measurement of Pore Pressure

Borehole Number: G5  
 Sample Number: 4  
 Depth (m): 3.00

**Specimen No 2**



**Checked and Approved**

Initials:

*RJP*

Date: 27/11/14

Project Number:

**GEO / 21936**

Project Name:

**DELIMARA REGASIFICATION PLANT**

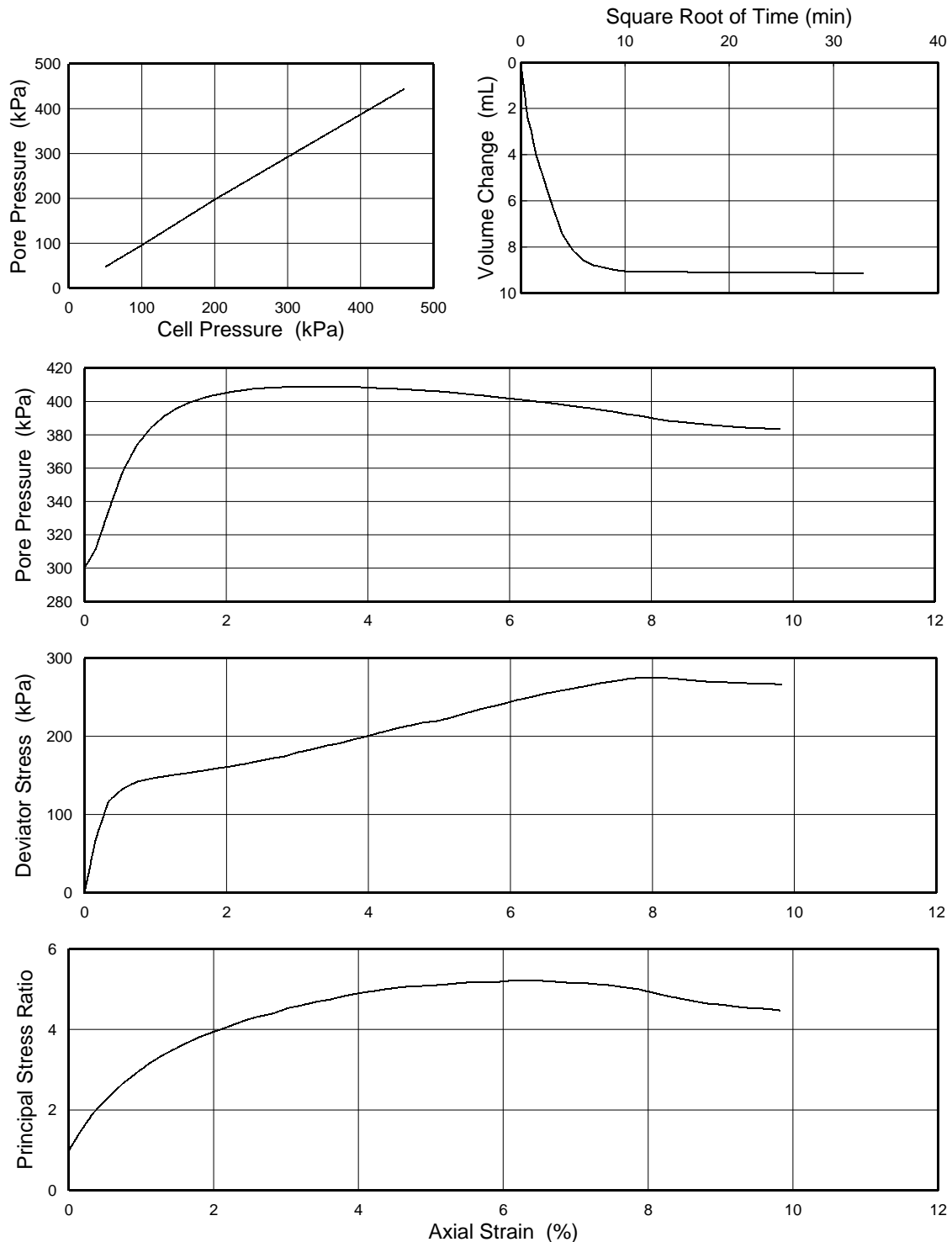
**Project Number J2094**



BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
 with Measurement of Pore Pressure

Borehole Number: G5  
 Sample Number: 4  
 Depth (m): 3.00

**Specimen No 3**



**Checked and Approved**

Initials:

*RJP*

Date: 27/11/14

Project Number:

**GEO / 21936**

Project Name:

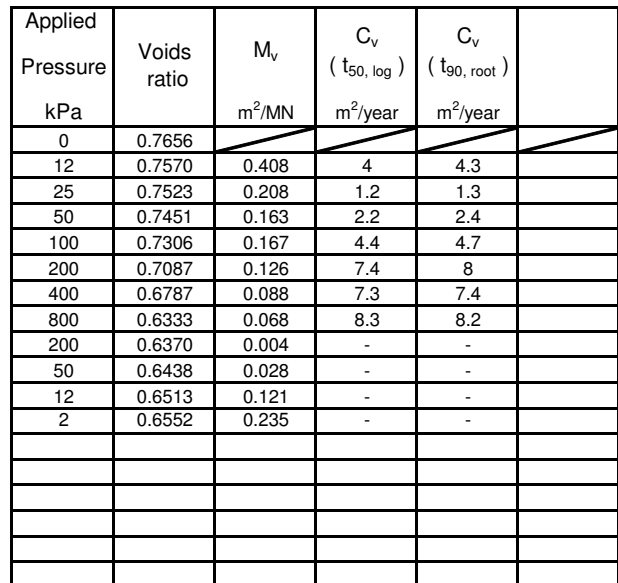
**DELIMARA REGASIFICATION PLANT**

**Project Number J2094**





Project No	N4263-14	Sample Details:	Hole No	G6		
Project Name	Dellimana		Depth (m BGL)	12.00		
			Samp No	8	Type	SB
			ID	MASTER2080		
			Spec Ref			



Page 181

Loc. No. N4263  
Location DELLIMANA

Hole No. G6  
Sample No. 8SB  
Spec No.  
Top Depth 12.00  
Specimen height mm 20.03

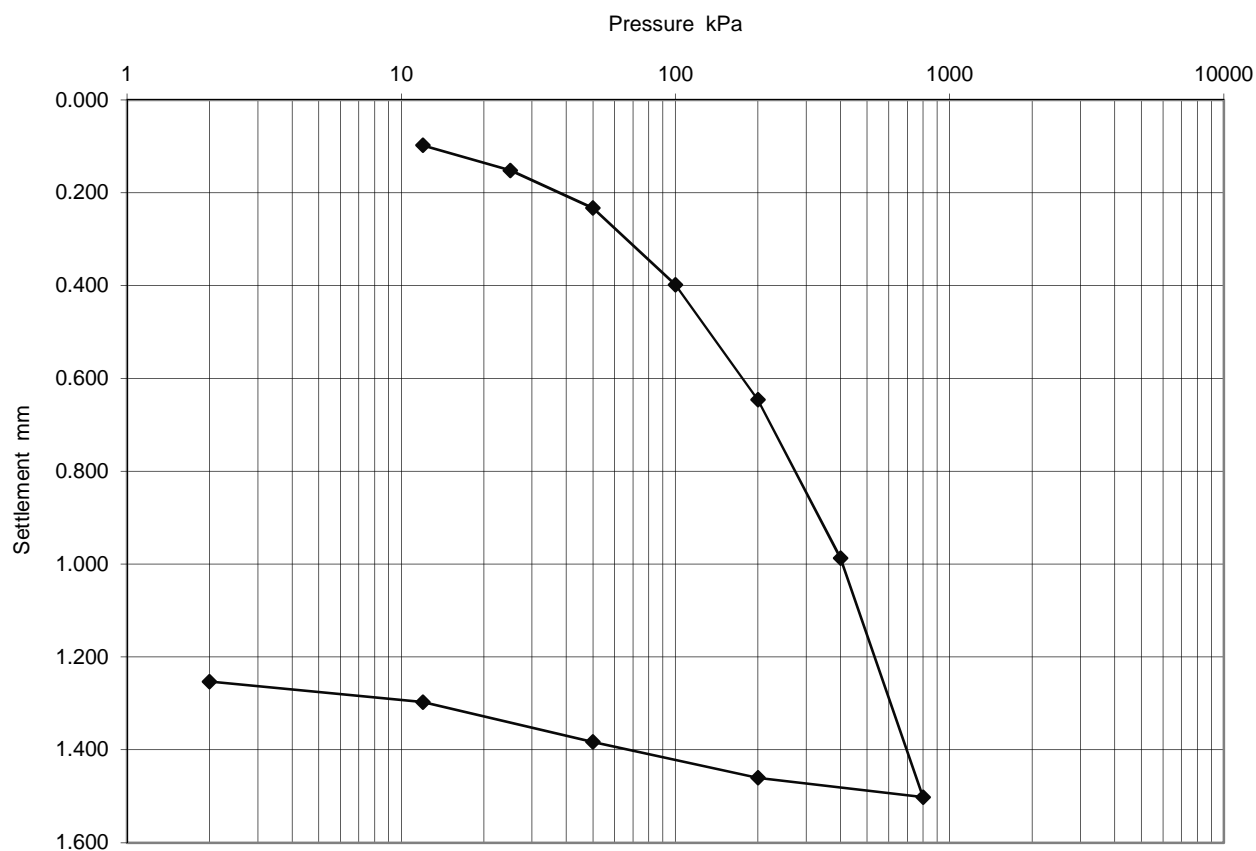
Filename : G6-8SB-  
Stage 1 [G6-8SB--.xls]sheet1'

### MANUAL INPUT

### COMPUTED VALUES - NOT MANUAL

Reading resolution 1 mm/division

Stage No.	Pressure kPa	correction mm	Temp°	Final settlement mm	t50 log mins	t90 root mins	Csec
1	12	0.000	21	0.098	2.5	9.9	0.0000
2	25	0.004	21.1	0.152	8.2	32.6	0.0005
3	50	0.010	21.2	0.233	4.5	17.8	0.0005
4	100	0.018	21.1	0.398	2.2	8.9	0.0006
5	200	0.030	20.8	0.646	1.3	5.1	0.0011
6	400	0.051	21.3	0.987	1.26	5.32	0.0013
7	800	0.072	20.7	1.502	1.07	4.64	0.0018
8	200	0.040	20	1.460			
9	50	0.018	20	1.383			
10	12	0.011	20	1.297			
11	2	0.005	20	1.253			
12							
13							
14							
15							
16							
17							

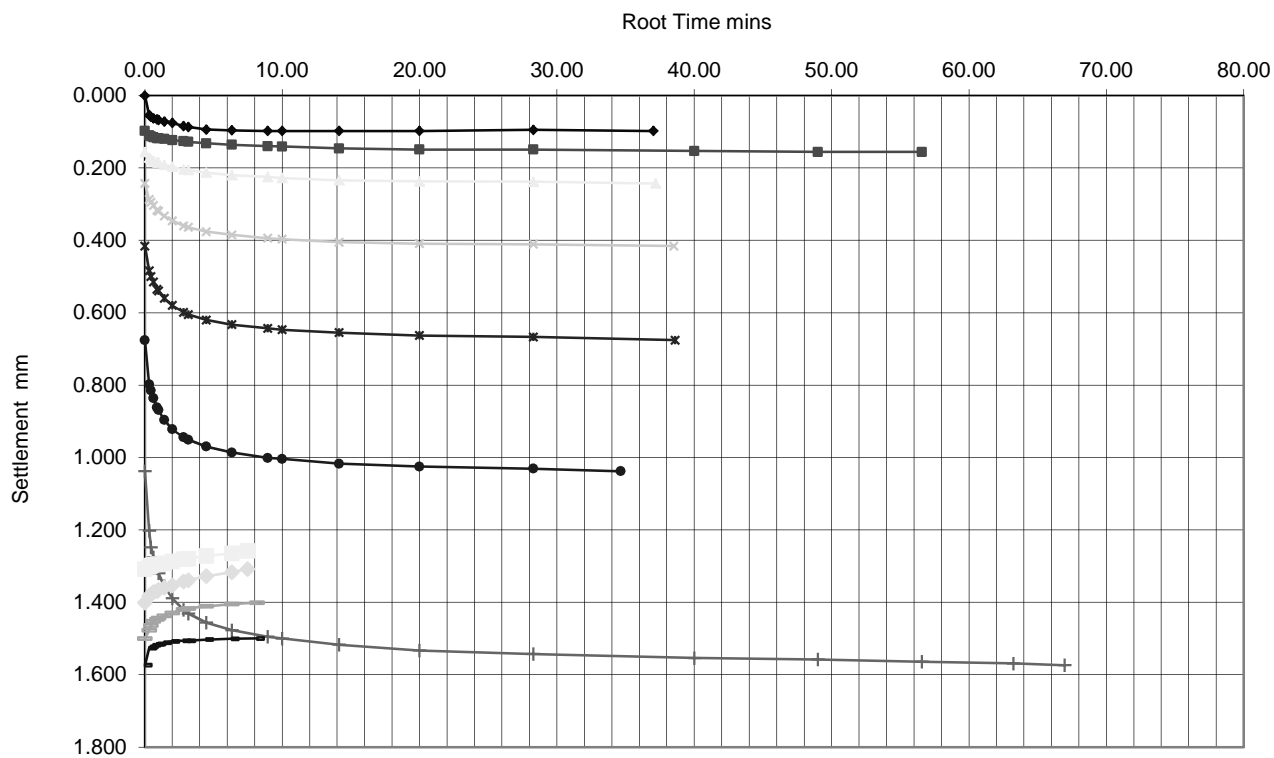
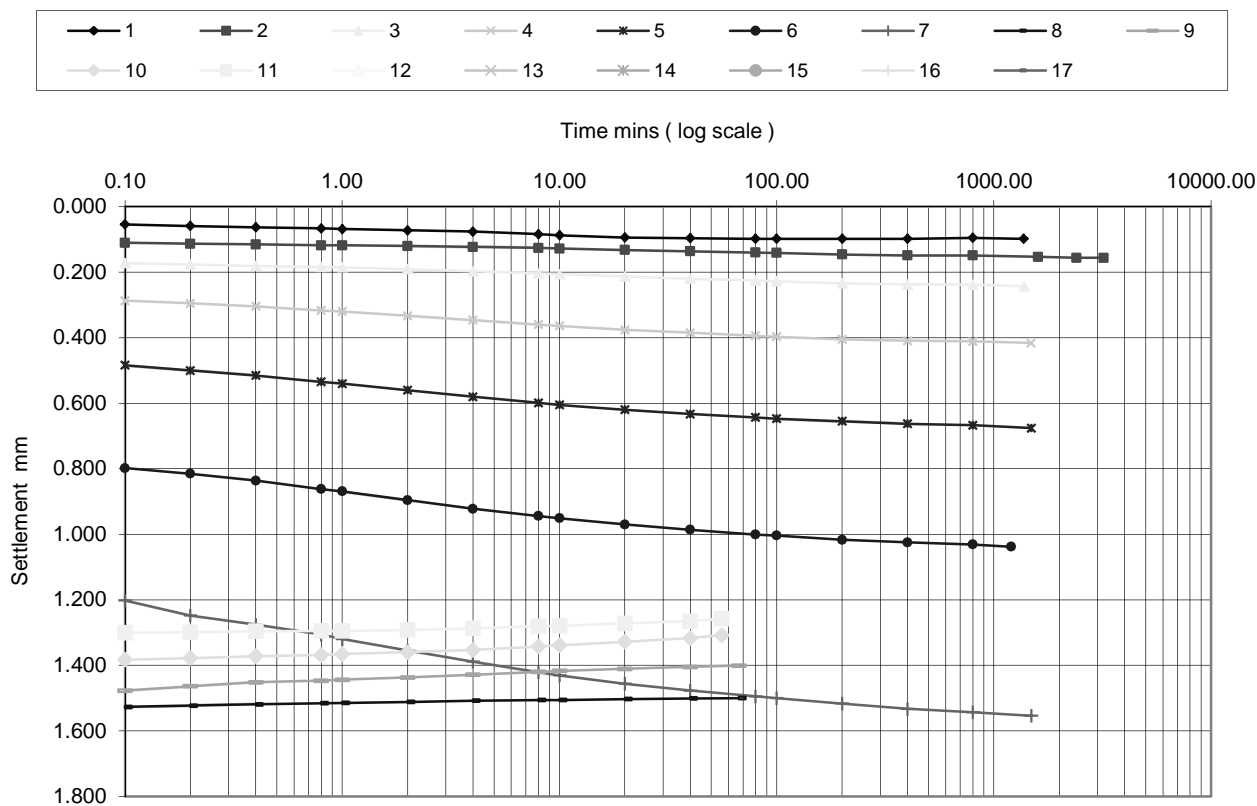


Loc. No. N4263  
Location DELLIMANA

Hole No. G6  
Sample No. 8SB  
Spec No.  
Top Depth 12.00  
Specimen height mm 20.03

Filename : G6-8SB-  
Stage 1 [G6-8SB--.xls]sheet1'

### Time v Settlement Plots



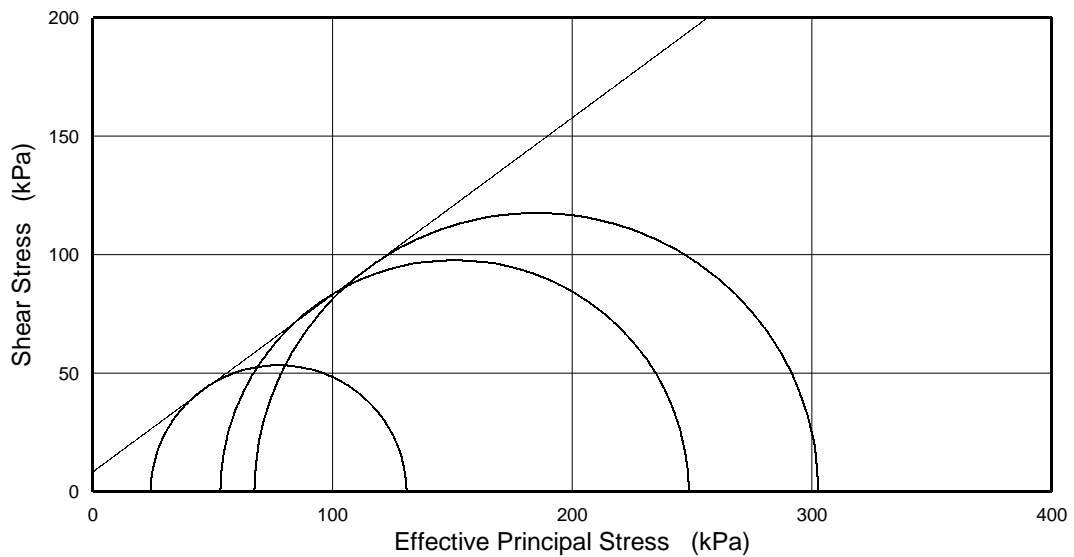
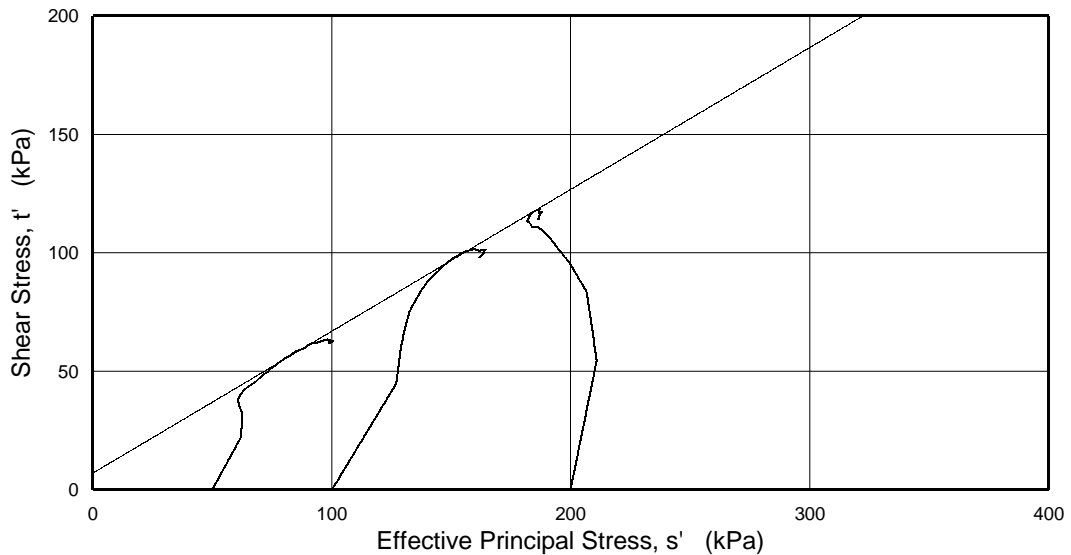
BS1377 : Part 8 : Clause 7 <b>Consolidated Undrained Triaxial Compression Test</b> <b>with Measurement of Pore Pressure</b>																															
Borehole Number: G7 Sample Number: Depth (m): 9.35 - 10.00		Description: Firm greyish brown sandy CLAY. Sand is fine to medium.																													
<b>SPECIMEN DETAILS</b> Depth within original sample Orientation within original sample		50 mm from top Vertical																													
<b>TEST DETAILS</b> Specimen Preparation Cell Preparation Specimen Number Initial Diameter mm Initial Length mm Initial Moisture Content % Initial Wet Density Mg/m <sup>3</sup> Drainage Conditions		Undisturbed Checks performed in accordance with Clause 3.5 <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th style="width: 25%;">Specimen No 1</th> <th style="width: 25%;">Specimen No 2</th> <th style="width: 25%;">Specimen No 3</th> </tr> </thead> <tbody> <tr> <td>37.4</td> <td>37.8</td> <td>38.0</td> </tr> <tr> <td>77.3</td> <td>76.4</td> <td>76.4</td> </tr> <tr> <td>34</td> <td>38</td> <td>40</td> </tr> <tr> <td>1.92</td> <td>1.81</td> <td>1.79</td> </tr> </tbody> </table> One end and radial boundary			Specimen No 1	Specimen No 2	Specimen No 3	37.4	37.8	38.0	77.3	76.4	76.4	34	38	40	1.92	1.81	1.79												
Specimen No 1	Specimen No 2	Specimen No 3																													
37.4	37.8	38.0																													
77.3	76.4	76.4																													
34	38	40																													
1.92	1.81	1.79																													
<b>SATURATION STAGE</b> Final Cell Pressure kPa Final Pore Pressure kPa Final Pore Pressure Parameter B Duration day(s)		<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>350</td> <td>400</td> <td>500</td> </tr> <tr> <td>348</td> <td>387</td> <td>492</td> </tr> <tr> <td>0.99</td> <td>0.98</td> <td>0.99</td> </tr> <tr> <td>2</td> <td>2</td> <td>2</td> </tr> </tbody> </table>			350	400	500	348	387	492	0.99	0.98	0.99	2	2	2															
350	400	500																													
348	387	492																													
0.99	0.98	0.99																													
2	2	2																													
<b>CONSOLIDATION STAGE</b> Cell Pressure kPa Back Pressure kPa Effective Pressure kPa Final Pore Pressure kPa Final Pore Pressure Dissipation % Duration day(s)		<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>350</td> <td>400</td> <td>500</td> </tr> <tr> <td>300</td> <td>300</td> <td>300</td> </tr> <tr> <td>50</td> <td>100</td> <td>200</td> </tr> <tr> <td>300</td> <td>300</td> <td>300</td> </tr> <tr> <td>100</td> <td>100</td> <td>100</td> </tr> <tr> <td>1</td> <td>1</td> <td>1</td> </tr> </tbody> </table>			350	400	500	300	300	300	50	100	200	300	300	300	100	100	100	1	1	1									
350	400	500																													
300	300	300																													
50	100	200																													
300	300	300																													
100	100	100																													
1	1	1																													
<b>SHEARING STAGE</b> Cell Pressure kPa Rate of Axial Displacement mm/min Initial Pore Pressure kPa Initial Effective Stress kPa		<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>350</td> <td>400</td> <td>500</td> </tr> <tr> <td>0.012</td> <td>0.012</td> <td>0.012</td> </tr> <tr> <td>300</td> <td>300</td> <td>300</td> </tr> <tr> <td>50</td> <td>100</td> <td>200</td> </tr> </tbody> </table>			350	400	500	0.012	0.012	0.012	300	300	300	50	100	200															
350	400	500																													
0.012	0.012	0.012																													
300	300	300																													
50	100	200																													
<b>CONDITIONS AT FAILURE</b> criteria		Maximum Principal Stress Ratio <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>326</td> <td>347</td> <td>433</td> </tr> <tr> <td>24</td> <td>53</td> <td>67</td> </tr> <tr> <td>107</td> <td>195</td> <td>235</td> </tr> <tr> <td>131</td> <td>248</td> <td>302</td> </tr> <tr> <td>5.45</td> <td>4.68</td> <td>4.50</td> </tr> <tr> <td>0.24</td> <td>0.24</td> <td>0.56</td> </tr> <tr> <td>3.4</td> <td>2.8</td> <td>5.3</td> </tr> <tr> <td>11</td> <td>11</td> <td>11</td> </tr> <tr> <td>1</td> <td>1</td> <td>1</td> </tr> </tbody> </table>			326	347	433	24	53	67	107	195	235	131	248	302	5.45	4.68	4.50	0.24	0.24	0.56	3.4	2.8	5.3	11	11	11	1	1	1
326	347	433																													
24	53	67																													
107	195	235																													
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5.45	4.68	4.50																													
0.24	0.24	0.56																													
3.4	2.8	5.3																													
11	11	11																													
1	1	1																													
Final Moisture Content % Final Wet Density Mg/m <sup>3</sup>		<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>29</td> <td>35</td> <td>35</td> </tr> <tr> <td>1.98</td> <td>1.85</td> <td>1.85</td> </tr> </tbody> </table>			29	35	35	1.98	1.85	1.85																					
29	35	35																													
1.98	1.85	1.85																													
<b>EFFECTIVE STRESS PARAMETERS</b> Cohesion kPa Angle of Shear Resistance degrees		<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>8</td> <td></td> <td></td> </tr> <tr> <td>37</td> <td></td> <td></td> </tr> </tbody> </table>			8			37																							
8																															
37																															
<b>FAILURE SKETCHES</b>		<div style="display: flex; justify-content: space-around; align-items: center;"> </div>																													

Checked and Approved Initials: <div style="text-align: center; margin-top: 10px;">RJP</div> Date: <div style="text-align: center; margin-top: 5px;">27/11/14</div>	Project Number: <div style="text-align: center; margin-top: 20px;"><b>GEO / 21936</b></div> Project Name: <div style="text-align: center; margin-top: 10px;"><b>DELIMARA REGASIFICATION PLANT</b></div> <div style="text-align: center; margin-top: 5px;"><b>Project Number J2094</b></div>		
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BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
 with Measurement of Pore Pressure

Borehole Number: G7  
 Sample Number:  
 Depth (m): 9.35 - 10.00

Description:  
 Firm greyish brown sandy CLAY.  
 Sand is fine to medium.



Checked and  
Approved

Initials:

*RJP*

Date: 27/11/14

Project Number:

**GEO / 21936**

Project Name:

**DELIMARA REGASIFICATION PLANT**  
**Project Number J2094**

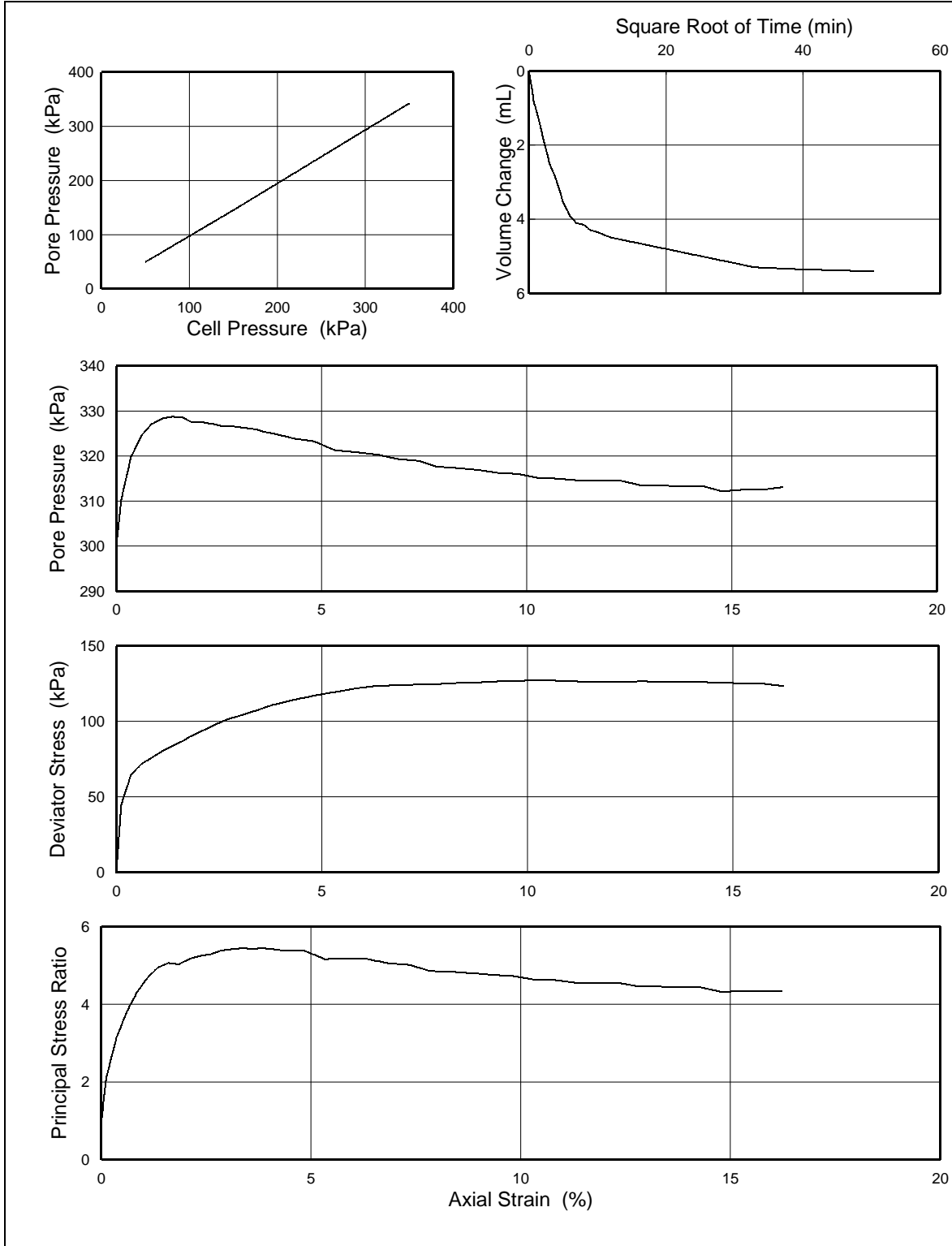


**GEOLABS**®

BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
with Measurement of Pore Pressure

Borehole Number: G7  
Sample Number:  
Depth (m): 9.35 - 10.00

**Specimen No 1**



**Checked and Approved**

Initials:

*RJP*

Date: 27/11/14

Project Number:

**GEO / 21936**

Project Name:

**DELIMARA REGASIFICATION PLANT**

**Project Number J2094**

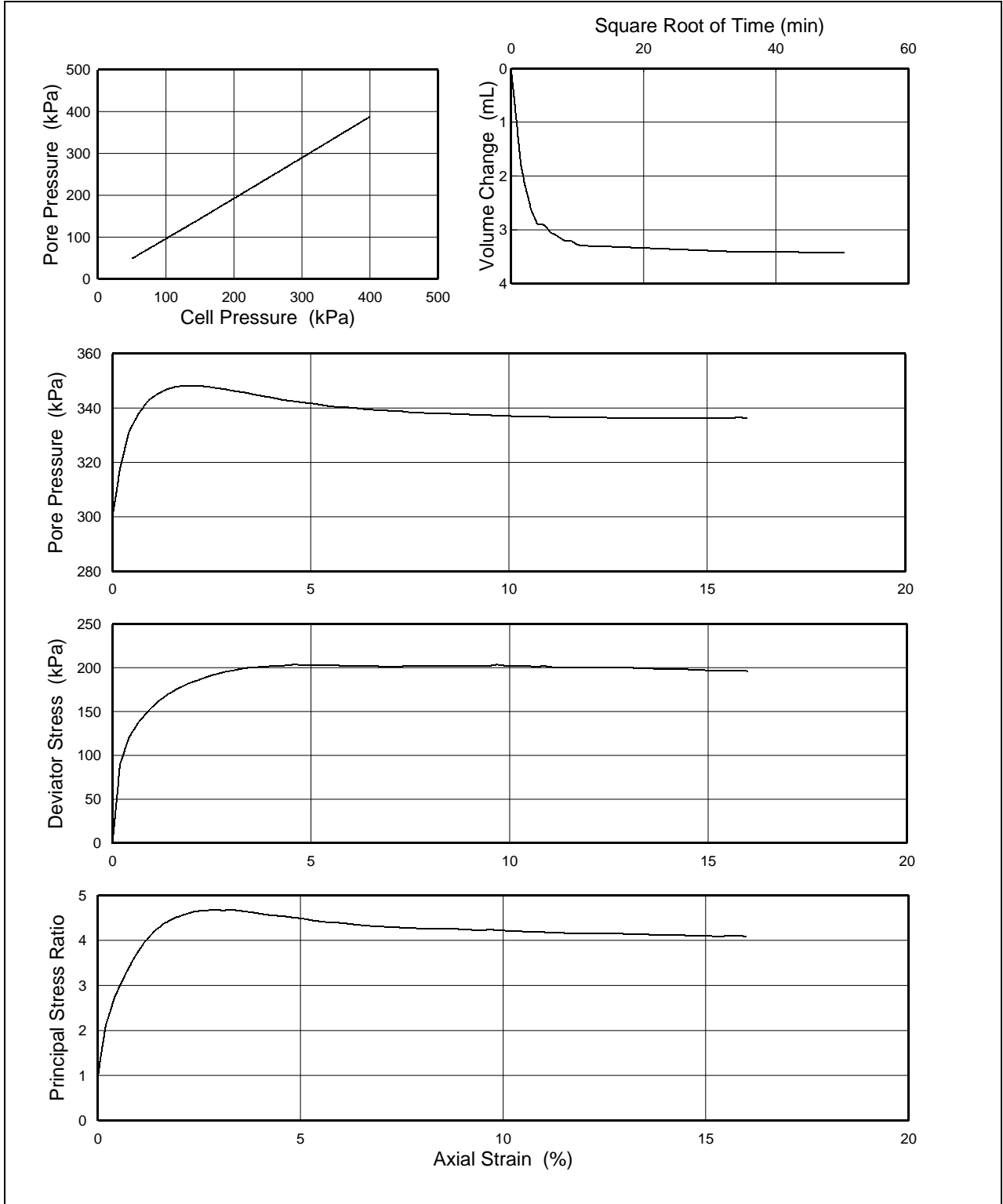




BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
 with Measurement of Pore Pressure

Borehole Number: G7  
 Sample Number:  
 Depth (m): 9.35 - 10.00

**Specimen No 2**



**Checked and Approved**

Initials:

*RJP*

Date: 27/11/14

Project Number:

**GEO / 21936**

Project Name:

**DELIMARA REGASIFICATION PLANT**

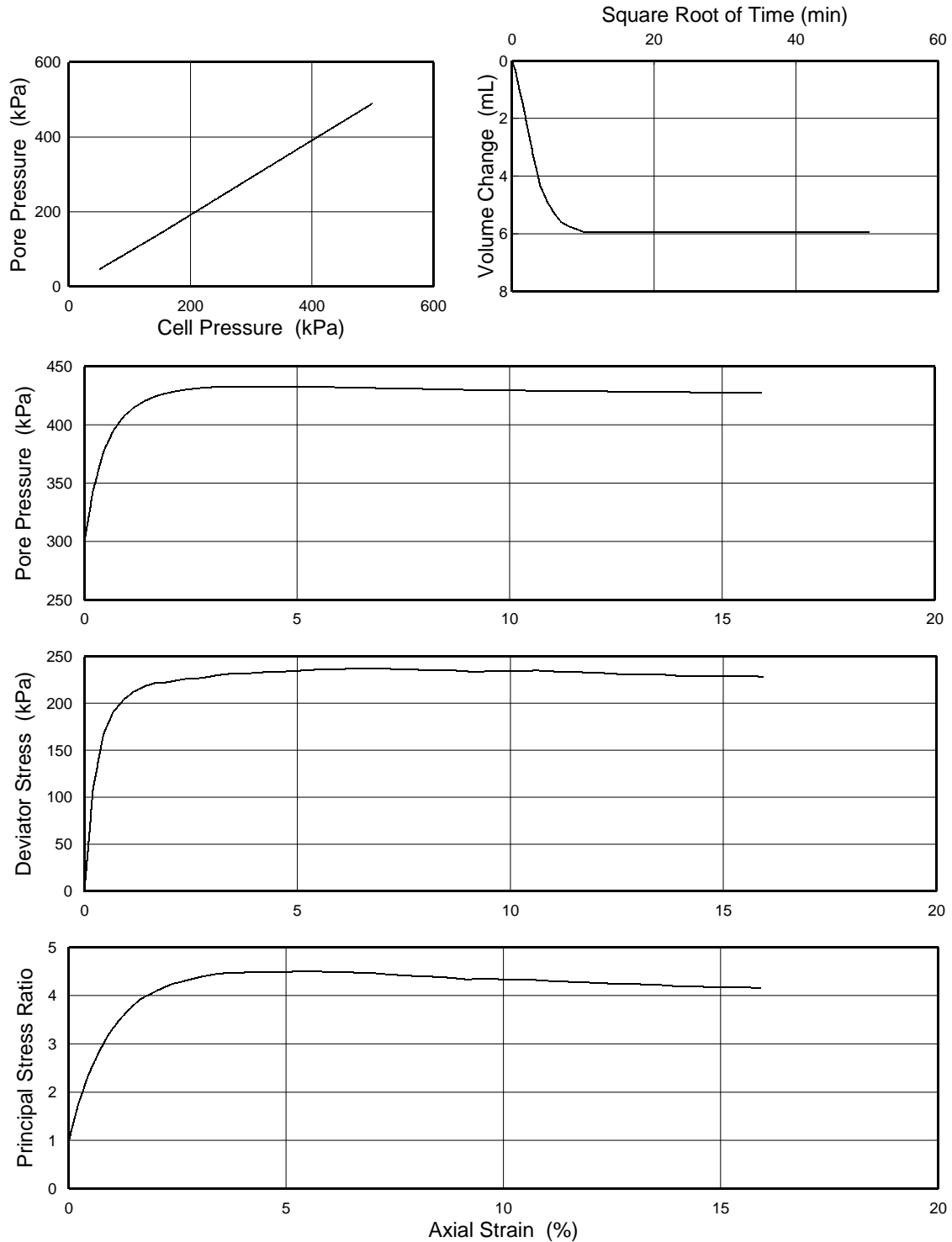
**Project Number J2094**



BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
 with Measurement of Pore Pressure

Borehole Number: G7  
 Sample Number:  
 Depth (m): 9.35 - 10.00

**Specimen No 3**



**Checked and Approved**

Initials:

*RJP*

Date: 27/11/14

Project Number:

**GEO / 21936**

Project Name:

**DELIMARA REGASIFICATION PLANT**

**Project Number J2094**



Loc. No. N4263-14  
Location DELLIMANA

Hole No. G7  
Sample No. 11  
Spec No.  
Top Depth 10.80  
Specimen height mm 20

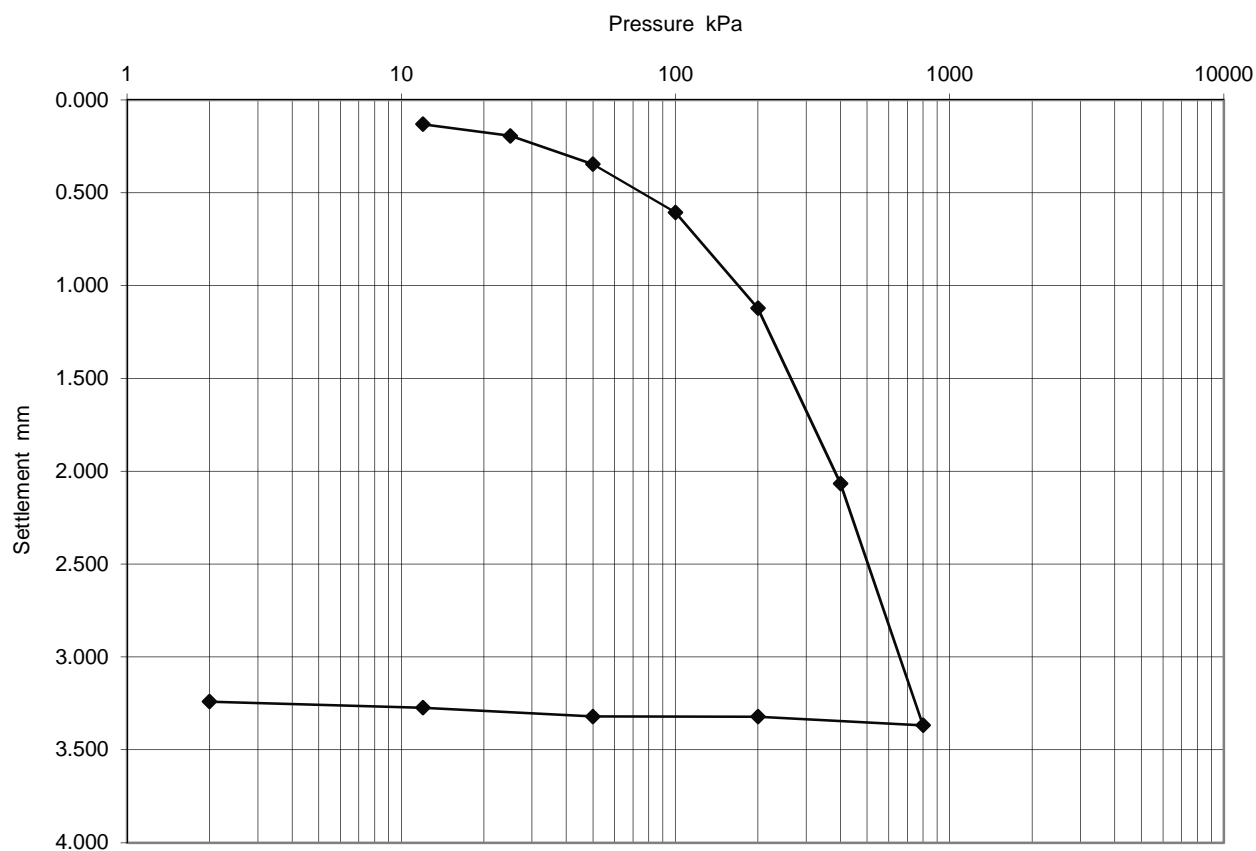
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### MANUAL INPUT

### COMPUTED VALUES - NOT MANUAL

Reading resolution 1 mm/division

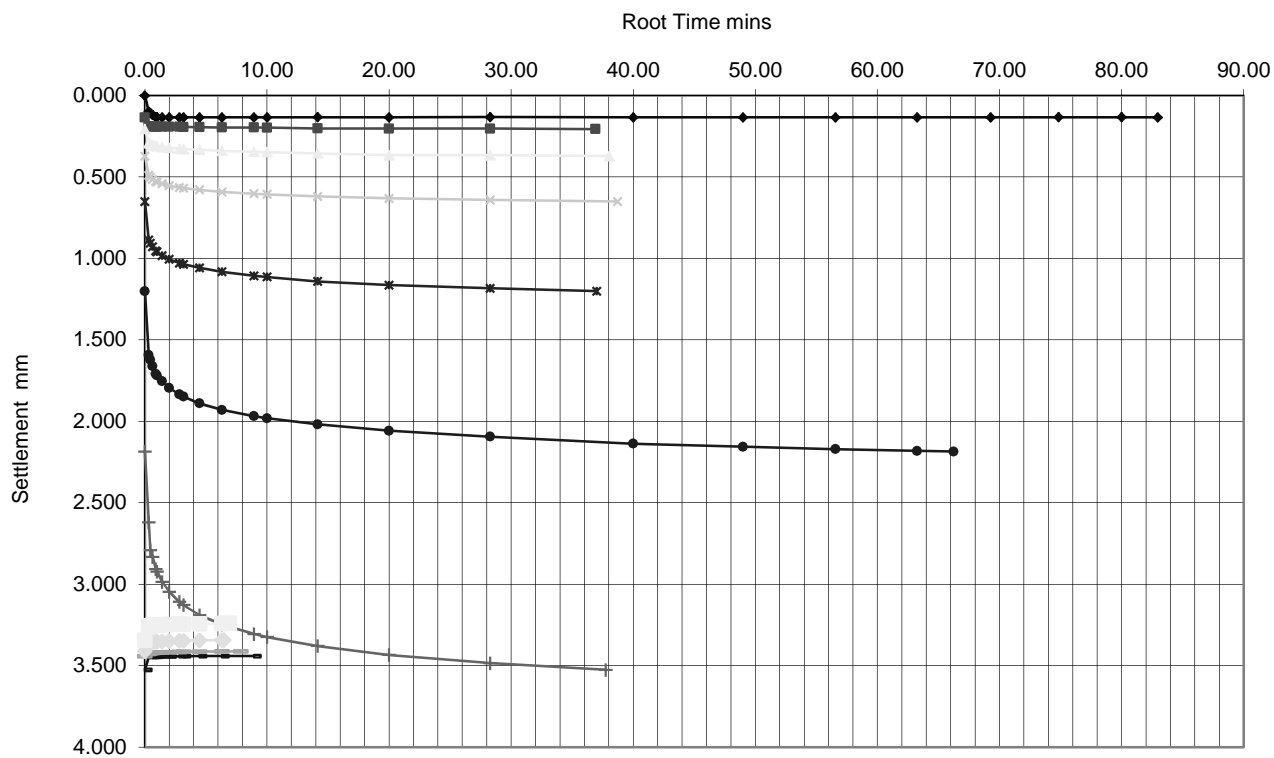
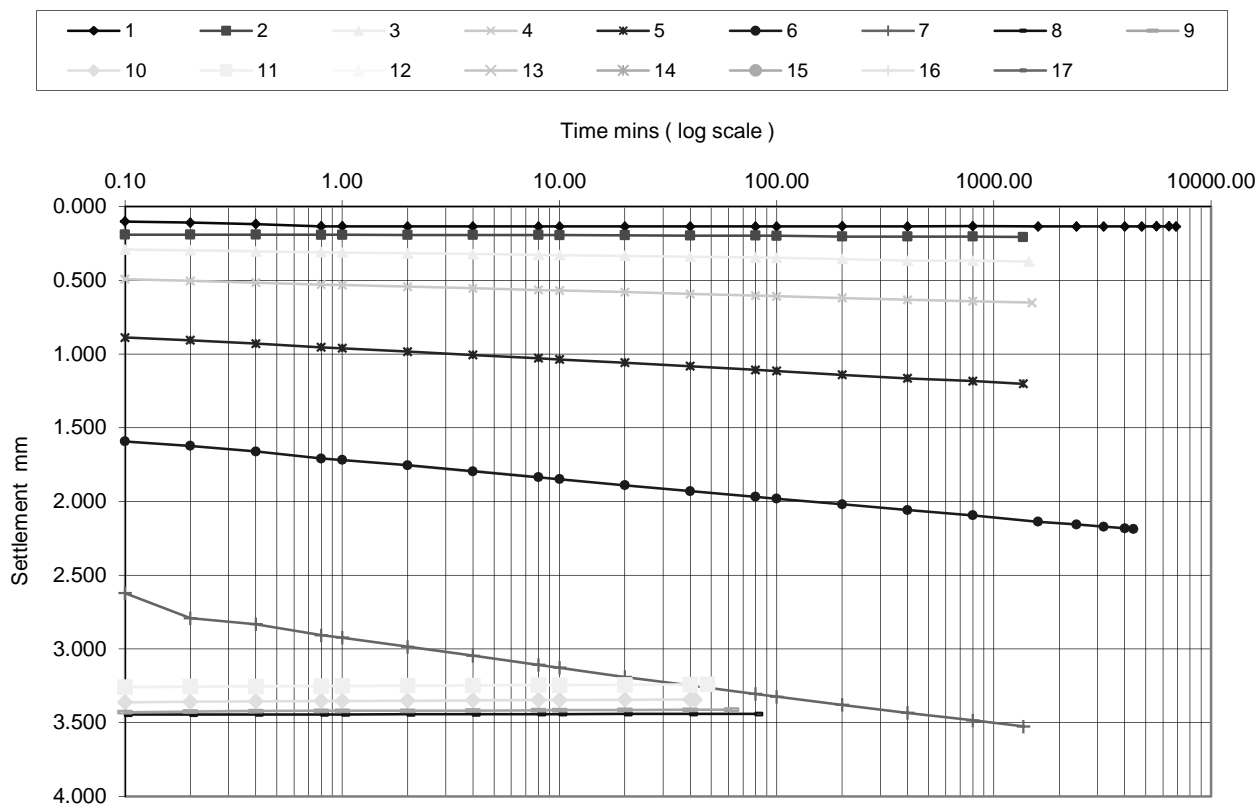
Stage No.	Pressure kPa	correction mm	Temp°	Final settlement mm	t50 log mins	t90 root mins	Csec
1	12	0.003	20.9	0.131	0.2	1.1	0.0000
2	25	0.012	19.5	0.194	26.6	51.5	0.0002
3	50	0.026	20.7	0.346	5.2	21.7	0.0005
4	100	0.045	20.9	0.606	2.2	8.8	0.0018
5	200	0.079	20.9	1.122	3.4	13.6	0.0034
6	400	0.120	20.9	2.066	1.30	1.10	0.0055
7	800	0.158	19.6	3.368	0.44	1.23	0.0083
8	200	0.120	20.3	3.321			
9	50	0.080	20.3	3.320			
10	12	0.070	20.3	3.273			
11	2	0.000	20.3	3.240			
12							
13							
14							
15							
16							
17							



Loc. No. N4263-14  
 Location DELLIMANA  
 Filename : G7-11-  
 Stage 1 [G7-11--.xls]sheet1'

Hole No. G7  
 Sample No. 11  
 Spec No.  
 Top Depth 10.80  
 Specimen height mm 20

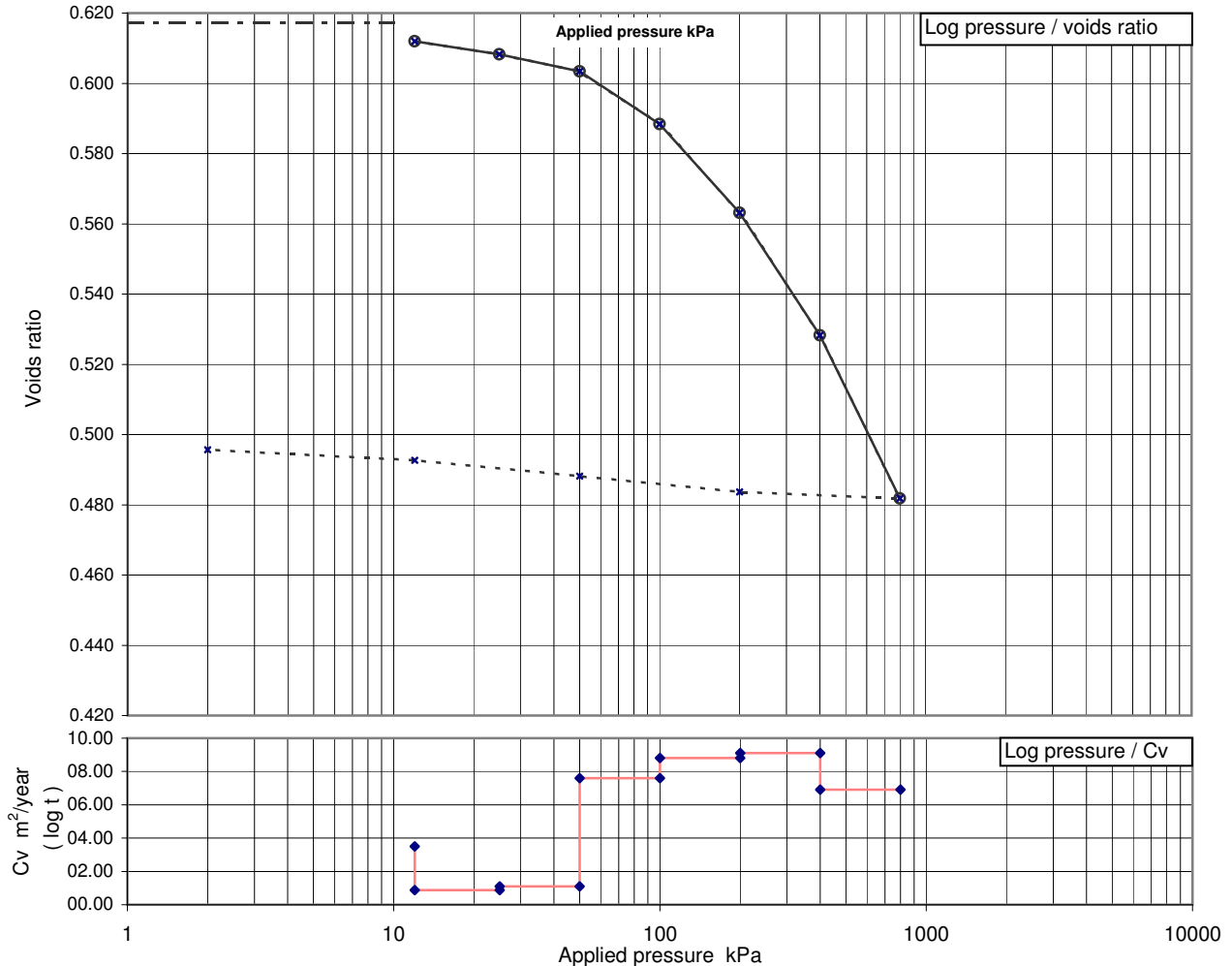
### Time v Settlement Plots



# ONE DIMENSIONAL CONSOLIDATION TEST

## BS 1377 : Part 5 : 1990 : clause 3

Project No	N4263-14	Sample Details:	Hole No	G7
Project Name	Dellimana		Depth (m BGL)	20.40
			Samp No	17
			Type	SB
			ID	MASTER2083
			Spec Ref	



Soil description	Light brown gravelly clayey SILT.
Preparation	Undisturbed
Index properties (if available)	Liquid limit % Plastic limit %

### Specimen details

Particle density	2.65	assumed	Mg/m³
Diameter	50.07		mm
Height	20.09	18.58	mm
Voids ratio	0.617	0.496	
Moisture content	22	18	%
Bulk density	2.00	2.10	Mg/m³
Dry density	1.64	1.77	Mg/m³
Saturation	96	99	%
Average temperature for test	21		°C

Swelling pressure not measured kPa

Notes :

Specimen taken 10 mm from base of sample

Applied Pressure kPa	Voids ratio	M <sub>v</sub> m²/MN	C <sub>v</sub> (t <sub>50, log</sub> ) m²/year	C <sub>v</sub> (t <sub>90, root</sub> ) m²/year
0	0.6172			
12	0.6120	0.270	3.5	3.5
25	0.6083	0.177	0.87	0.88
50	0.6034	0.120	1.1	1.2
100	0.5884	0.188	7.6	8.1
200	0.5631	0.159	8.8	9
400	0.5282	0.111	9.1	9.7
800	0.4818	0.076	6.9	7.1
200	0.4836	0.002	-	-
50	0.4882	0.020	-	-
12	0.4927	0.080	-	-
2	0.4956	0.200	-	-

### QA Ref

SLR 5.3  
Rev 140  
Mar 12



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### Figure

**OED**

Loc. No. N4263-14  
Location DELLIMANA

Hole No. G7  
Sample No. 17 SB  
Spec No.  
Top Depth 20.40  
Specimen height mm 20.09

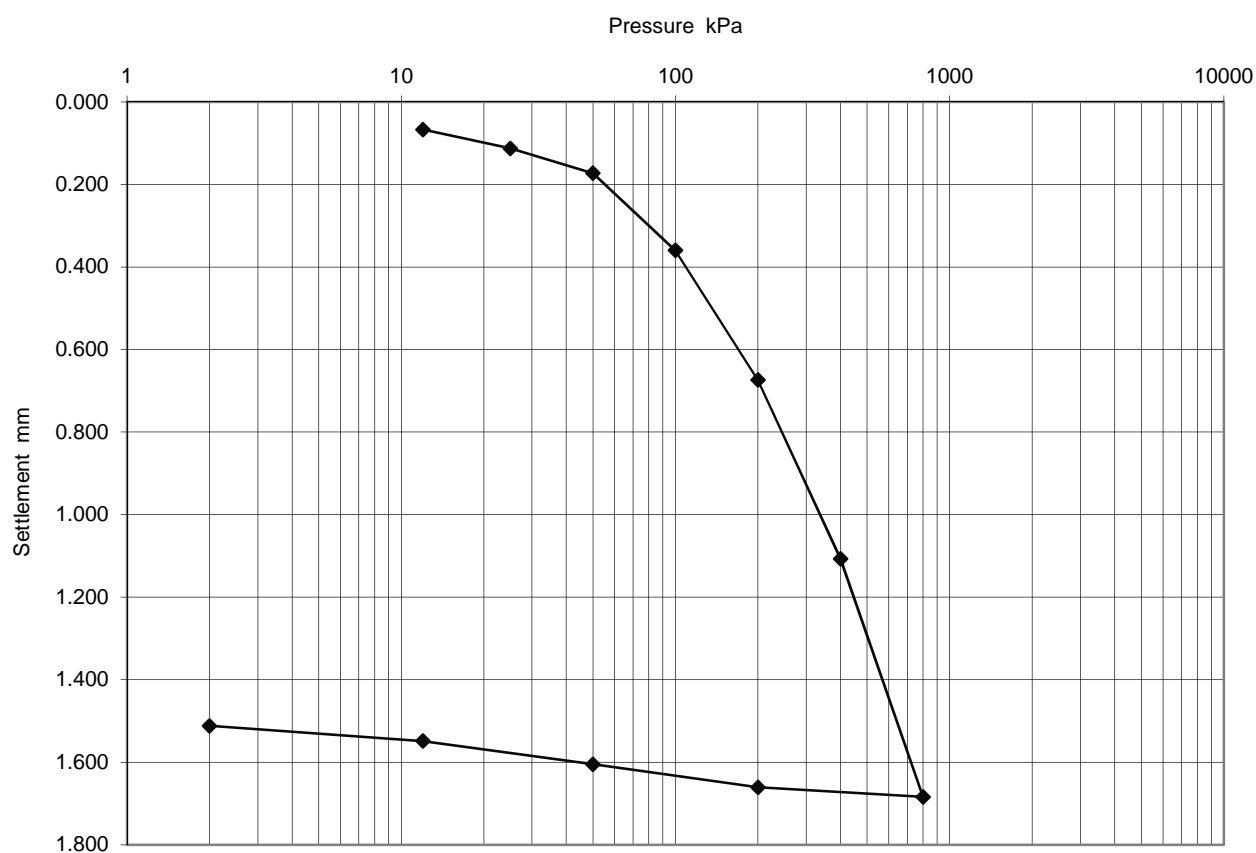
Filename : G7-17 SB-  
Stage 1 [G7-17 SB--.xls]sheet1'

### MANUAL INPUT

### COMPUTED VALUES - NOT MANUAL

Reading resolution 1 mm/division

Stage No.	Pressure kPa	correction mm	Temp°	Final settlement mm	t50 log mins	t90 root mins	Csec
1	12	0.003	21	0.067	2.9	12.2	0.0001
2	25	0.010	21.1	0.113	11.6	48.8	0.0003
3	50	0.035	21.2	0.173	8.9	35.9	0.0008
4	100	0.057	21.1	0.360	1.3	5.2	0.0012
5	200	0.073	20.8	0.674	1.1	4.6	0.0017
6	400	0.091	21.3	1.107	1.01	4.06	0.0019
7	800	0.122	20.7	1.684	1.29	5.32	0.0025
8	200	0.095	20	1.661			
9	50	0.073	20	1.605			
10	12	0.061	20	1.549			
11	2	0.053	20	1.512			
12							
13							
14							
15							
16							
17							



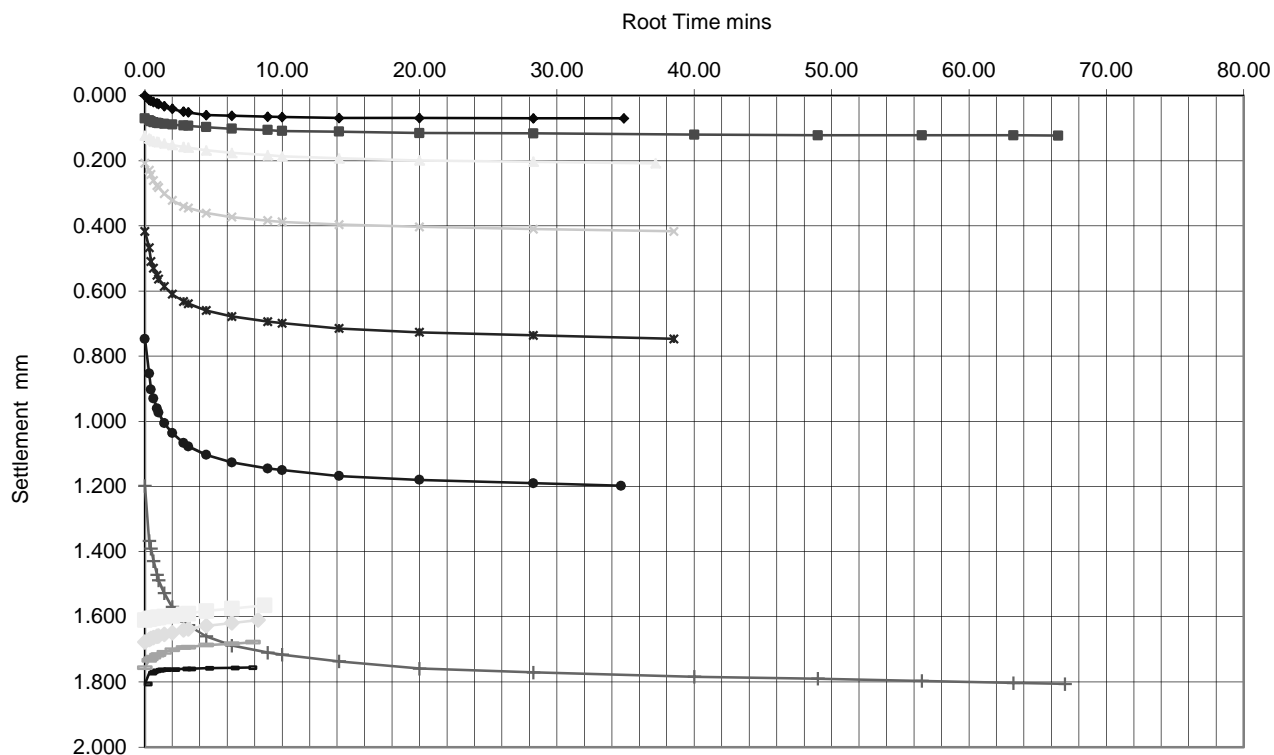
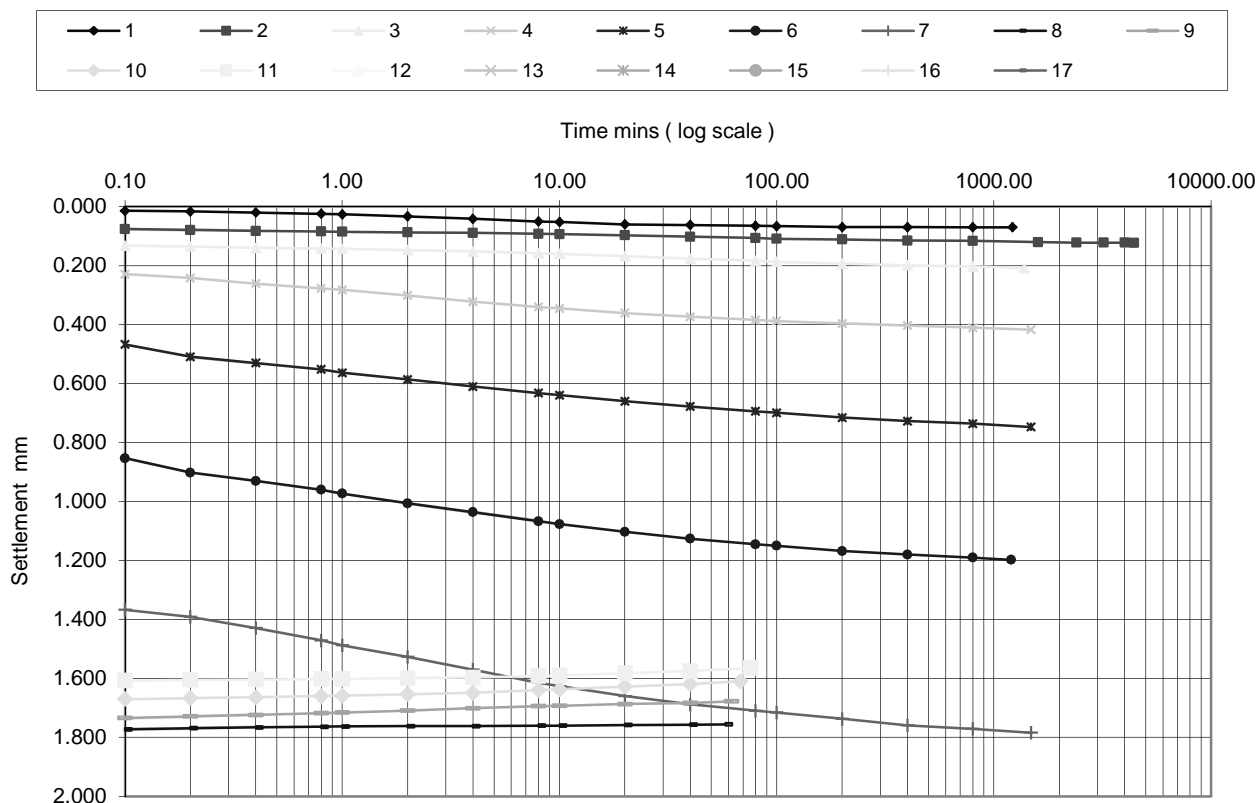


Loc. No. N4263-14  
Location DELLIMANA

Hole No. G7  
Sample No. 17 SB  
Spec No.  
Top Depth 20.40  
Specimen height mm 20.09

Filename : G7-17 SB-  
Stage 1 [G7-17 SB--.xls]sheet1'

### Time v Settlement Plots



<b>ONE DIMENSIONAL CONSOLIDATION TEST</b>							
<b>BS 1377 : Part 5 : 1990 : clause 3</b>							
Project No	N4263-14	Sample Details:	Hole No	G8			
Project Name	Dellimana		Depth (m BGL)	8.90			
			Samp No	3	Type	U	
			ID	MASTER2085			
			Spec Ref				

**Soil description**

Soft to firm brownish grey slightly sandy slightly gravelly silty CLAY with occasional rootlets.

**Preparation**

Undisturbed

**Index properties**  
( if available )

Liquid limit %		Plastic limit %	
----------------	--	-----------------	--

**Specimen details**

Initial	Final	
2.65	assumed	Mg/m <sup>3</sup>
50.06		mm
20.00	14.91	mm
1.899	1.162	Voids ratio
65	42	%
1.51	1.74	Bulk density Mg/m <sup>3</sup>
0.91	1.23	Dry density Mg/m <sup>3</sup>
91	96	%
21		Average temperature for test °C

**Swelling pressure**

not measured kPa

**Notes :**

Specimen taken    20 mm from base of sample

Applied Pressure kPa	Voids ratio	M <sub>v</sub> m²/MN	C <sub>v</sub> ( t <sub>50, log</sub> ) m²/year	C <sub>v</sub> ( t <sub>90, root</sub> ) m²/year
0	1.8989	-	-	-
12	1.8382	1.746	9.8	9.3
25	1.7870	1.387	9.5	9
50	1.6925	1.357	13	12
100	1.5777	0.853	14	14
200	1.3579	0.853	1.8	1.9
400	1.2144	0.304	10	11
800	1.0787	0.153	7.2	7.3
200	1.0857	0.006	-	-
50	1.1038	0.058	-	-
12	1.1320	0.354	-	-
2	1.1616	1.387	-	-

QA Ref			Figure
SLR 5.3 Rev 140 Mar 12		Printed:30/10/2014 08:55	OED

Loc. No. N4263-14  
Location DELLIMANA

Hole No. G8  
Sample No. 3  
Spec No.  
Top Depth 8.90  
Specimen height mm 20

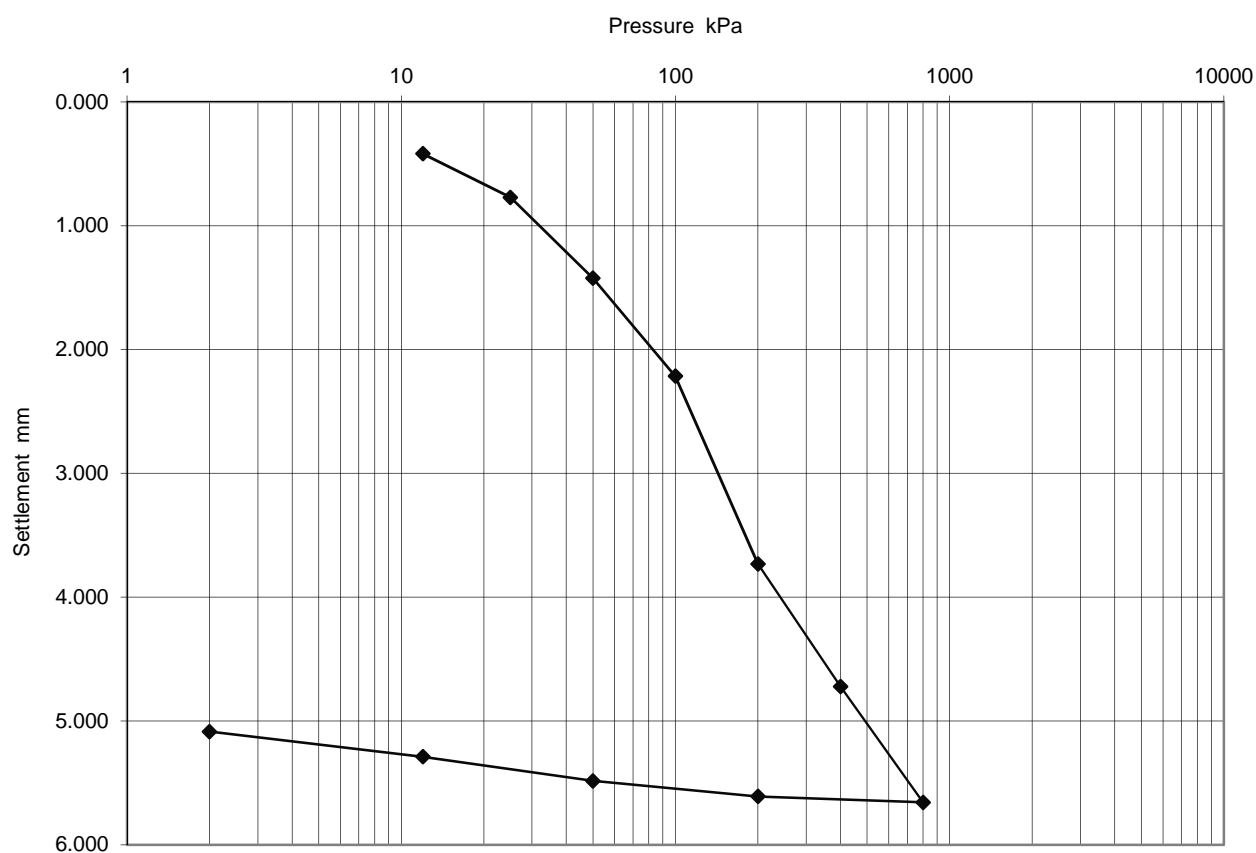
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Stage 1 [G8-3--.xls]sheet1'

### MANUAL INPUT

### COMPUTED VALUES - NOT MANUAL

Reading resolution 1 mm/division

Stage No.	Pressure kPa	correction mm	Temp°	Final settlement mm	t50 log mins	t90 root mins	Csec
1	12	0.000	21.1	0.419	1.0	4.5	0.0010
2	25	0.000	21	0.772	1.0	4.5	0.0028
3	50	0.002	20.9	1.424	0.7	3.2	0.0046
4	100	0.008	19.9	2.216	0.6	2.7	0.0048
5	200	0.022	20.8	3.732	4.1	16.1	0.0068
6	400	0.043	21	4.722	0.60	2.41	0.0063
7	800	0.064	21.1	5.658	0.76	3.22	0.0045
8	200	0.037	21.2	5.610			
9	50	0.017	21.2	5.485			
10	12	0.010	21.2	5.290			
11	2	0.000	21.2	5.086			
12							
13							
14							
15							
16							
17							

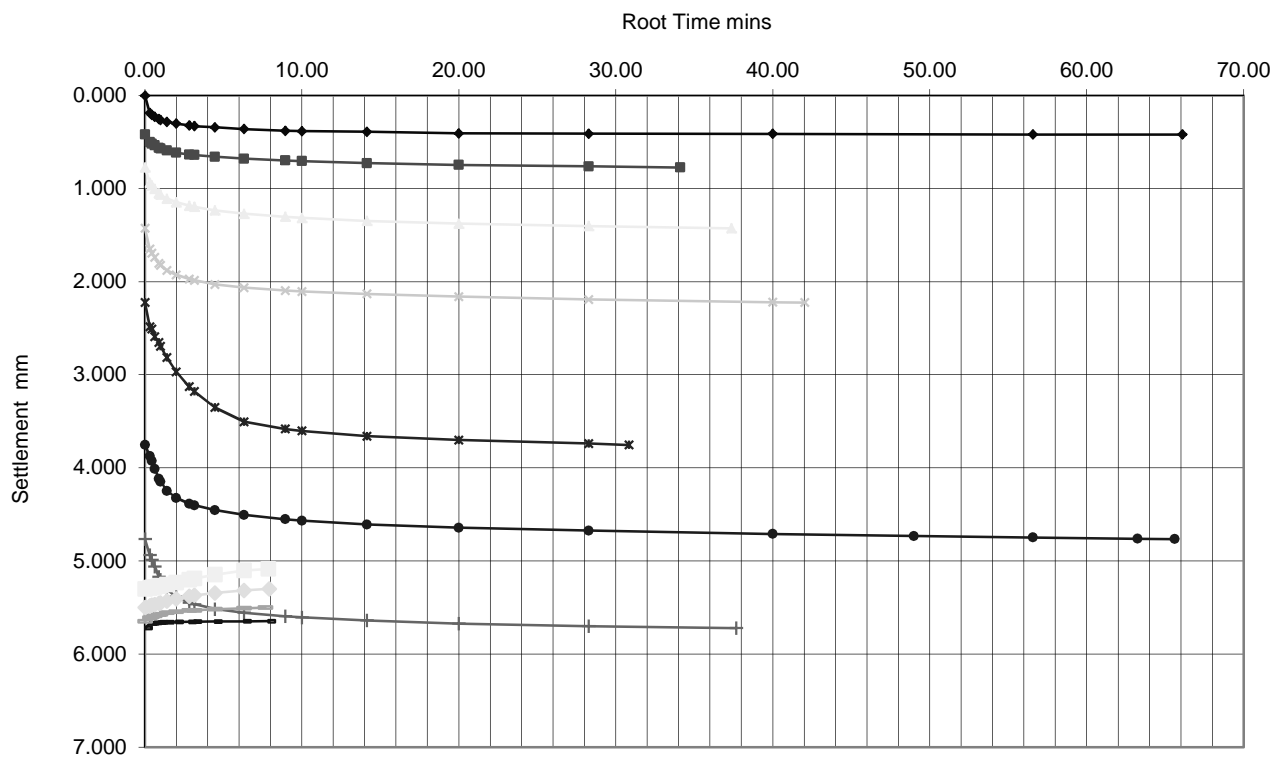
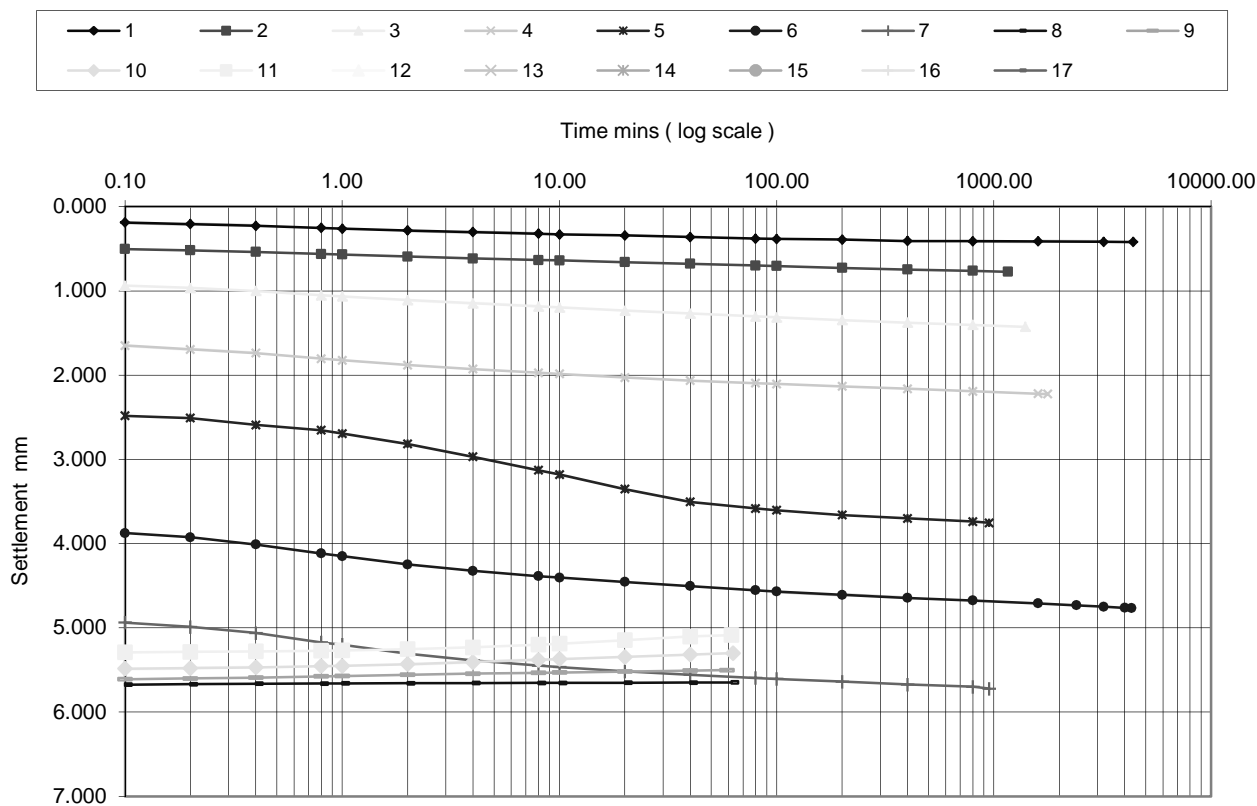


Loc. No. N4263-14  
Location DELLIMANA

Hole No. G8  
Sample No. 3  
Spec No.  
Top Depth 8.90  
Specimen height mm 20

Filename : G8-3-  
Stage 1 [G8-3--.xls]sheet1'

### Time v Settlement Plots





Loc. No. N4263-14  
Location DELLIMANA

Hole No. G9  
Sample No. 2  
Spec No.  
Top Depth 7.75  
Specimen height mm 20.02

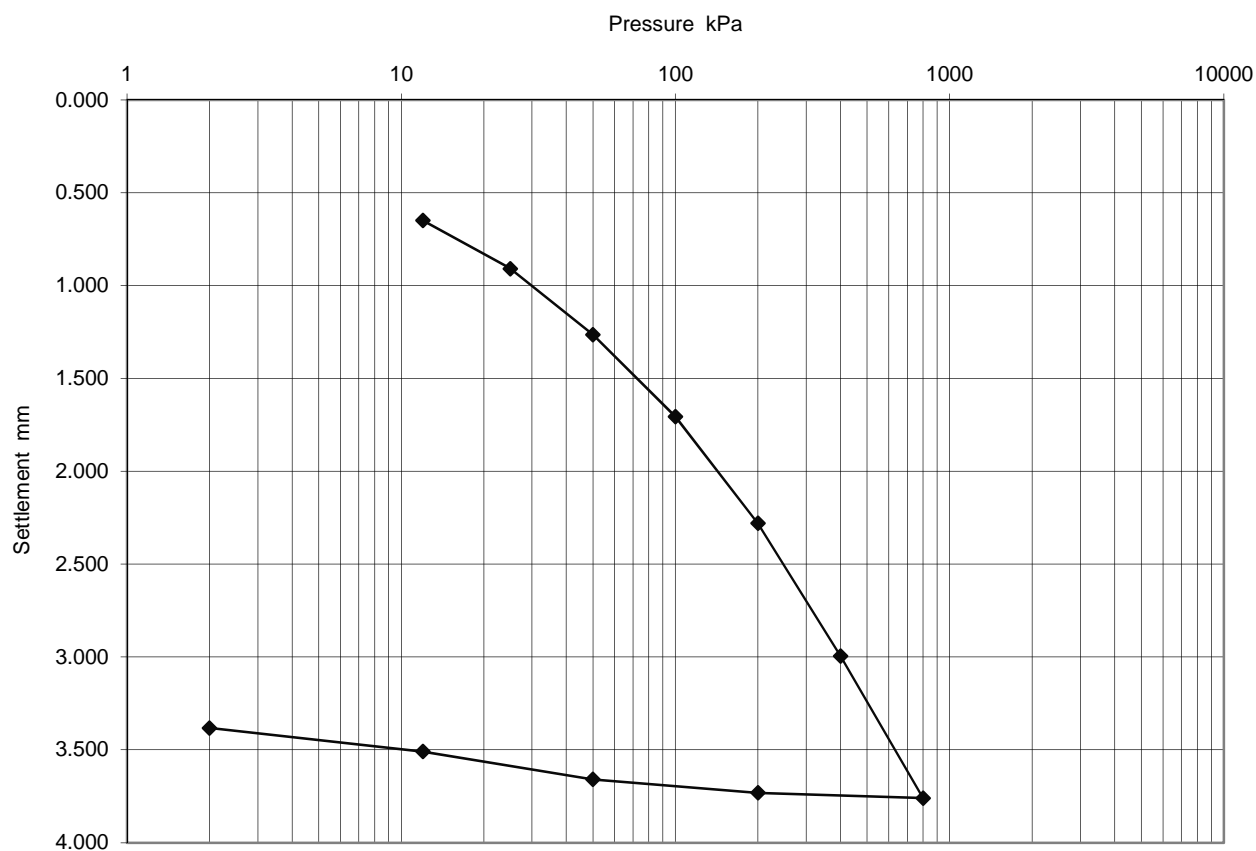
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Stage 1 [G9-2--.xls]sheet1'

### MANUAL INPUT

### COMPUTED VALUES - NOT MANUAL

Reading resolution 1 mm/division

Stage No.	Pressure kPa	correction mm	Temp°	Final settlement mm	t50 log mins	t90 root mins	Csec
1	12	0.001	20.9	0.650	1.3	5.3	0.0016
2	25	0.004	19.5	0.909	0.7	2.8	0.0018
3	50	0.011	20.7	1.264	0.8	3.2	0.0021
4	100	0.020	20.9	1.705	0.6	2.4	0.0027
5	200	0.036	20.9	2.280	0.5	2.0	0.0031
6	400	0.054	20.9	2.995	0.58	1.52	0.0030
7	800	0.074	19.6	3.760	0.43	1.61	0.0038
8	200	0.050	20.3	3.731			
9	50	0.028	20.3	3.659			
10	12	0.020	20.3	3.509			
11	2	0.000	20.3	3.382			
12							
13							
14							
15							
16							
17							

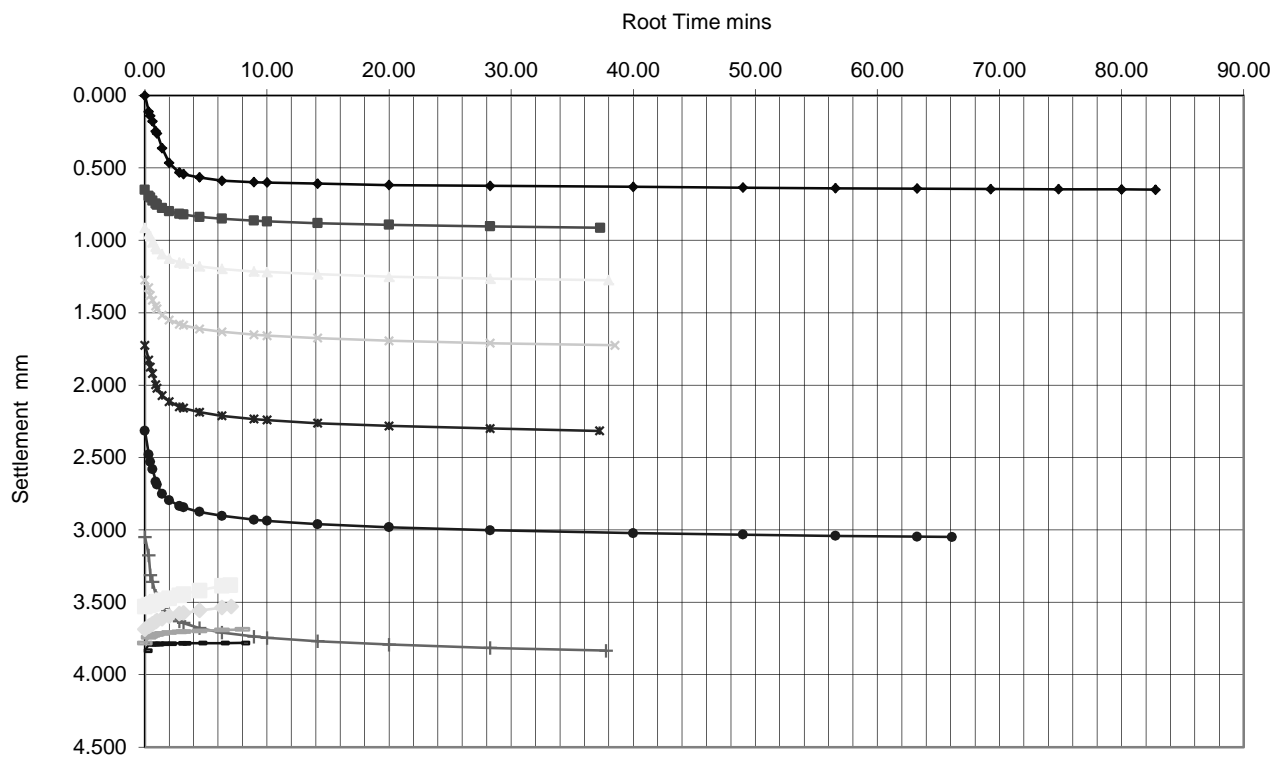
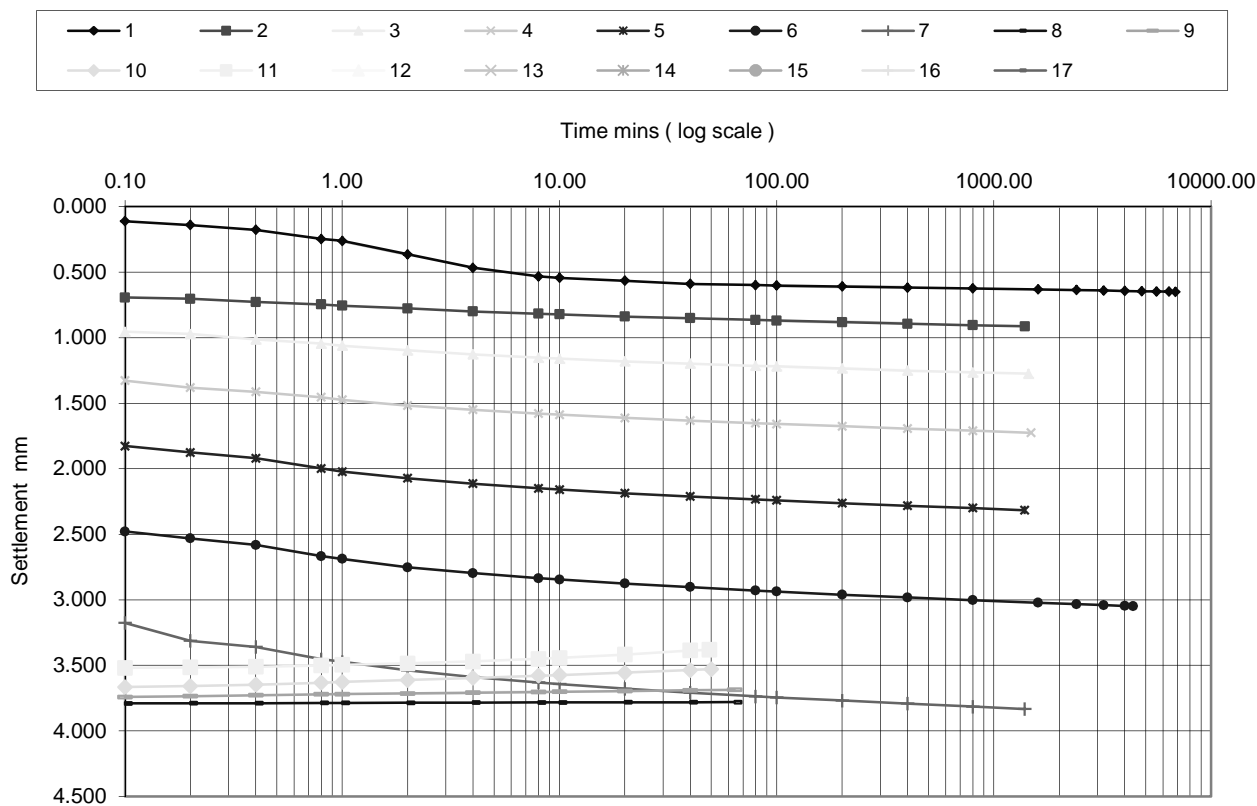


Loc. No. N4263-14  
Location DELLIMANA

Hole No. G9  
Sample No. 2  
Spec No.  
Top Depth 7.75  
Specimen height mm 20.02

Filename : G9-2-  
Stage 1 [G9-2--.xls]sheet1'

### Time v Settlement Plots





ONE DIMENSIONAL CONSOLIDATION TEST						
BS 1377 : Part 5 : 1990 : clause 3						
Project No	N4263-14	Sample Details:	Hole No	G10		
Project Name	Dellimana		Depth (m BGL)	3.30		
			Samp No	1	Type	U
			ID	MASTER2089		
			Spec Ref			

Applied pressure kPa

Voids ratio

Applied pressure kPa	Voids ratio
12	1.0381
25	1.0324
50	1.0214
100	1.0062
200	0.9836
400	0.9496
800	0.9036
1000	0.9038

Log pressure / Cv

Applied pressure kPa	Cv m²/year (log t)
12	1.5
25	1.2
50	49
100	33
200	99
400	51
800	6.2
1000	6.6

Soil description	Soft grey sandy silty CLAY becoming soft grey silty SAND with clay pockets and frequent		
Preparation	Undisturbed		
Index properties ( if available )	Liquid limit %	Plastic limit %	
Specimen details	Initial	Final	
Particle density	2.65	assumed	Mg/m³
Diameter	50.04		mm
Height	19.99	18.74	mm
Voids ratio	1.042	0.915	
Moisture content	36	33	%
Bulk density	1.76	1.84	Mg/m³
Dry density	1.30	1.38	Mg/m³
Saturation	90	94	%
Average temperature for test	20		°C
Swelling pressure	not measured kPa		
Notes :			
Specimen taken	10 mm from base of sample		

Applied Pressure kPa	Voids ratio	M <sub>v</sub> m²/MN	C <sub>v</sub> ( t <sub>50, log</sub> ) m²/year	C <sub>v</sub> ( t <sub>90, root</sub> ) m²/year
0	1.0422	-	-	-
12	1.0381	0.167	1.5	1.6
25	1.0324	0.216	1.2	1.3
50	1.0214	0.217	49	53
100	1.0062	0.150	33	35
200	0.9836	0.113	99	106
400	0.9496	0.085	51	50
800	0.9036	0.059	6.2	6.6
200	0.9038	0.000	-	-
50	0.9059	0.008	-	-
12	0.9096	0.051	-	-
2	0.9146	0.262	-	-

QA Ref

SLR 5.3  
Rev 140  
Mar 12

Environmental Scientifics Group

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Figure  
OED 4

Loc. No. N4263-14  
Location DELLIMANA

Hole No. G10  
Sample No. 1  
Spec No.  
Top Depth 3.30  
Specimen height mm 19.99

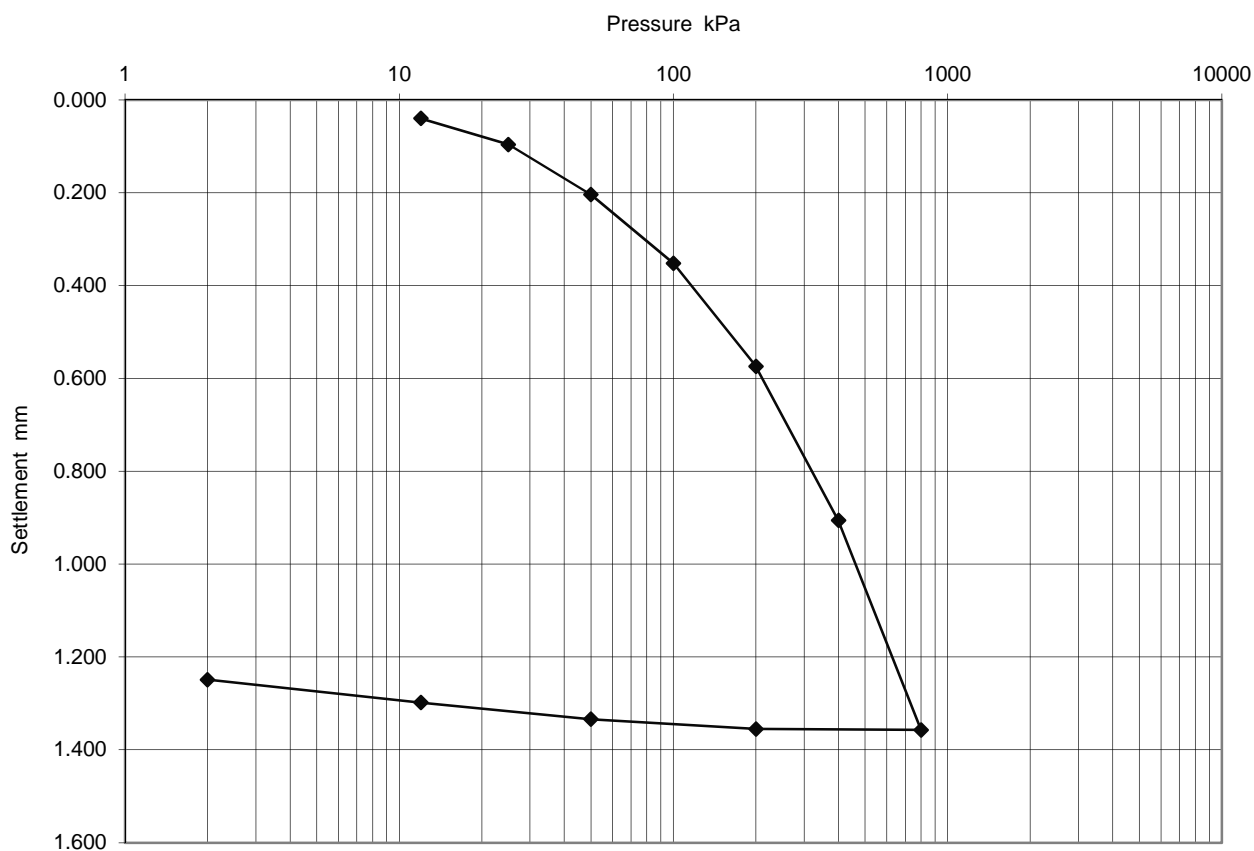
Filename : G10-1-  
Stage 1 [G10-1--.xls]sheet1'

### MANUAL INPUT

### COMPUTED VALUES - NOT MANUAL

Reading resolution 1 mm/division

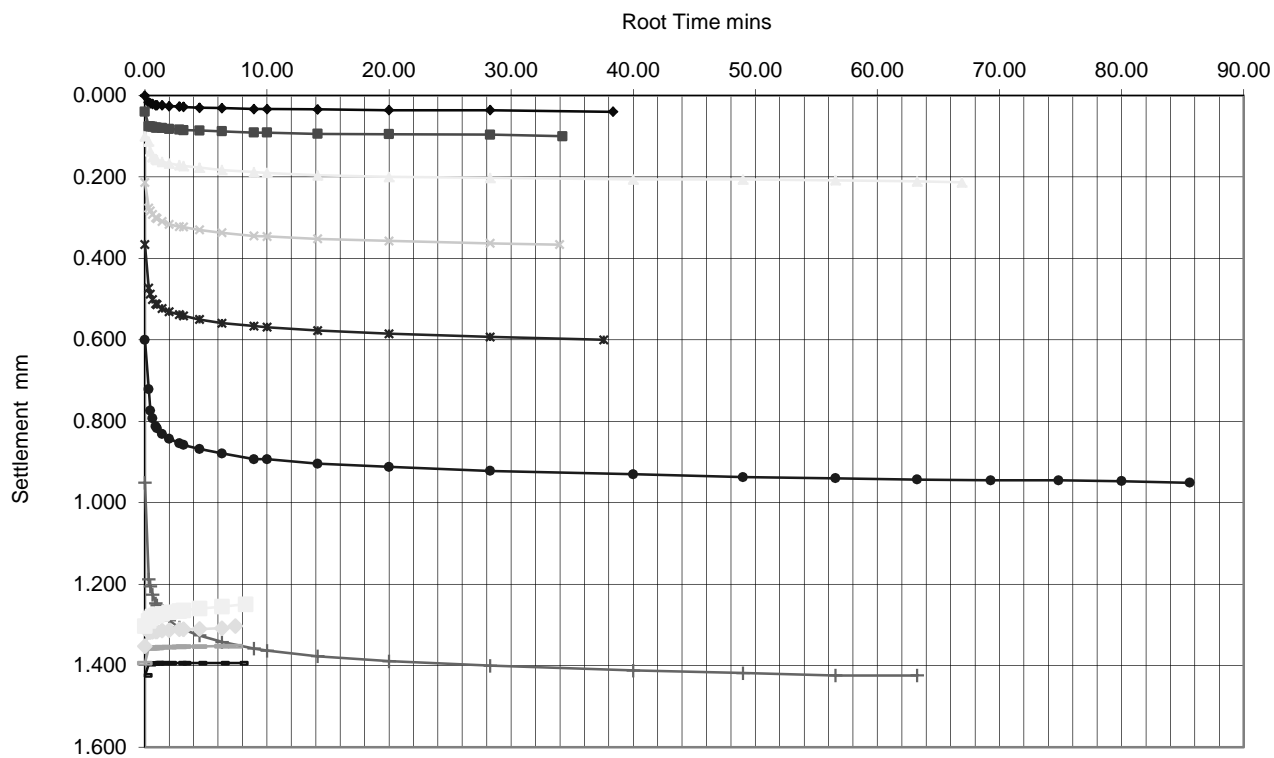
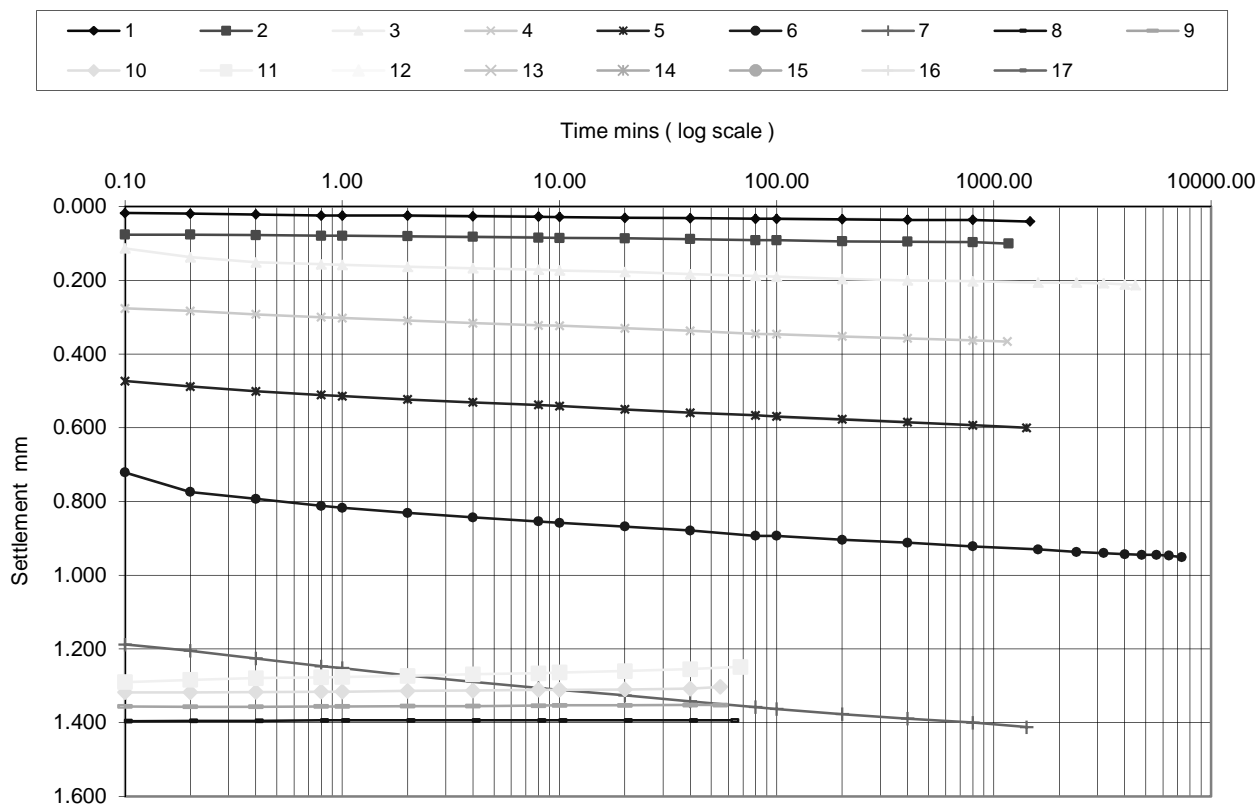
Stage No.	Pressure kPa	correction mm	Temp°	Final settlement mm	t50 log mins	t90 root mins	Csec
1	12	0.000	21.1	0.040	6.8	27.4	0.0003
2	25	0.004	20.8	0.096	8.7	33.3	0.0005
3	50	0.009	21.3	0.204	0.2	0.8	0.0007
4	100	0.014	20.7	0.352	0.3	1.2	0.0010
5	200	0.026	20	0.574	0.1	0.4	0.0014
6	400	0.045	19.9	0.906	0.19	0.83	0.0016
7	800	0.067	19.5	1.357	1.51	6.11	0.0014
8	200	0.039	20.9	1.355			
9	50	0.018	20.9	1.334			
10	12	0.005	19.6	1.298			
11	2	0.000	19.6	1.249			
12							
13							
14							
15							
16							
17							



Loc. No. N4263-14  
 Location DELLIMANA  
 Filename : G10-1-  
 Stage 1 [G10-1--.xls]sheet1'

Hole No. G10  
 Sample No. 1  
 Spec No.  
 Top Depth 3.30  
 Specimen height mm 19.99

### Time v Settlement Plots



# Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure ( BS1377 : Part 8 : 1990 )

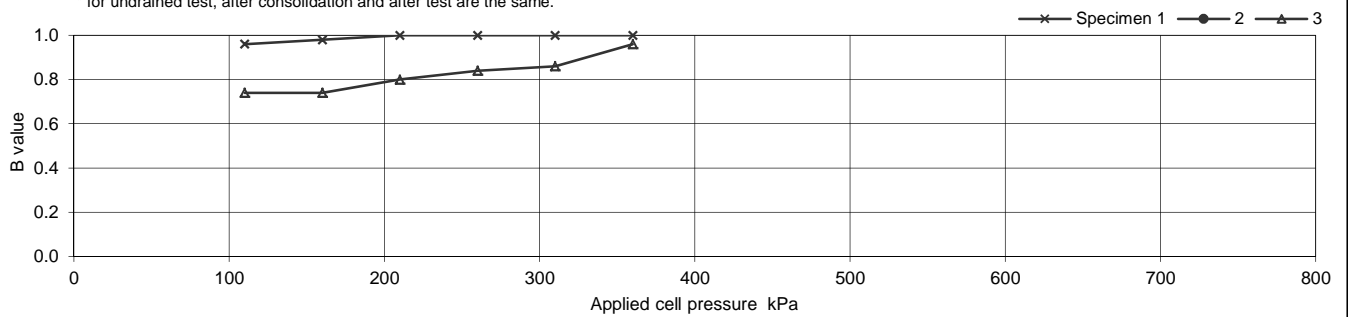
Project No	N4263-14	Sample Details:	Hole No	G10
Project Name	Dellimana		Depth (m BGL)	3.30-4.30
			No	1
			ID	
			Spec Ref	
			Type	

Specimen Details		1	2	3
Initial	Length mm	142.09		141.07
	Diameter mm	72.51		71.78
	Bulk Density Mg/m³	1.95		1.86
	Water Content %	30		31
	Dry density Mg/m³	1.50		1.42
After consolidation	Length mm	139.45		139.58
	Diameter mm	71.15		71.02
	Bulk Density* Mg/m³	2.00		1.91
	Water Content* %	26		31
	Dry density* Mg/m³	1.58		1.46

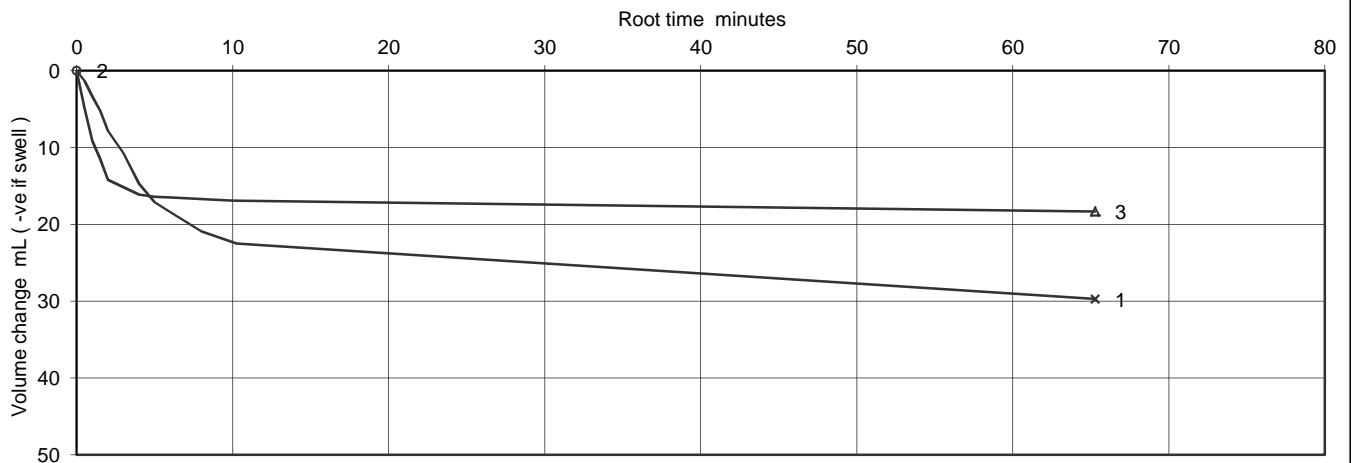
Soil Description	SPEC 1 - Greyish brown very silty SAND. SPEC 2 - Soft greyish brown sandy CLAY.
Specimen Type /Preparation	UNDISTURBED

Saturation Details		Method of Saturation		
		Increments of cell pressure only		
Cell pressure increments	kPa	50		50
Differential Pressure	kPa			10
Final Cell Pressure	kPa	360		360
Final pore water pressure	kPa	356		346
Final B Value		1.00		0.96

\* for undrained test, after consolidation and after test are the same.



Consolidation Details	Drainage Conditions		From radial boundary and one end			
	Specimen No.		1	2	3	
	Cell Pressure applied		390		510	kPa
	Back Pressure applied		350		350	kPa
	Effective Pressure		40	80	160	kPa
	Pore pressure at start of consolidation		387		491	kPa
	Pore pressure at end of consolidation		350		350	kPa
	Pore pressure dissipation at end of consolidation		100		100	%
	Consolidation parameters ( see note to BS1377 : pt 8, clause 6.3.4 )	C <sub>vi</sub>	0.44		18.91	m²/year
		M <sub>vi</sub>	1.38		0.23	m²/MN
		k <sub>vi</sub>	1.9E-10		1.3E-09	m/s

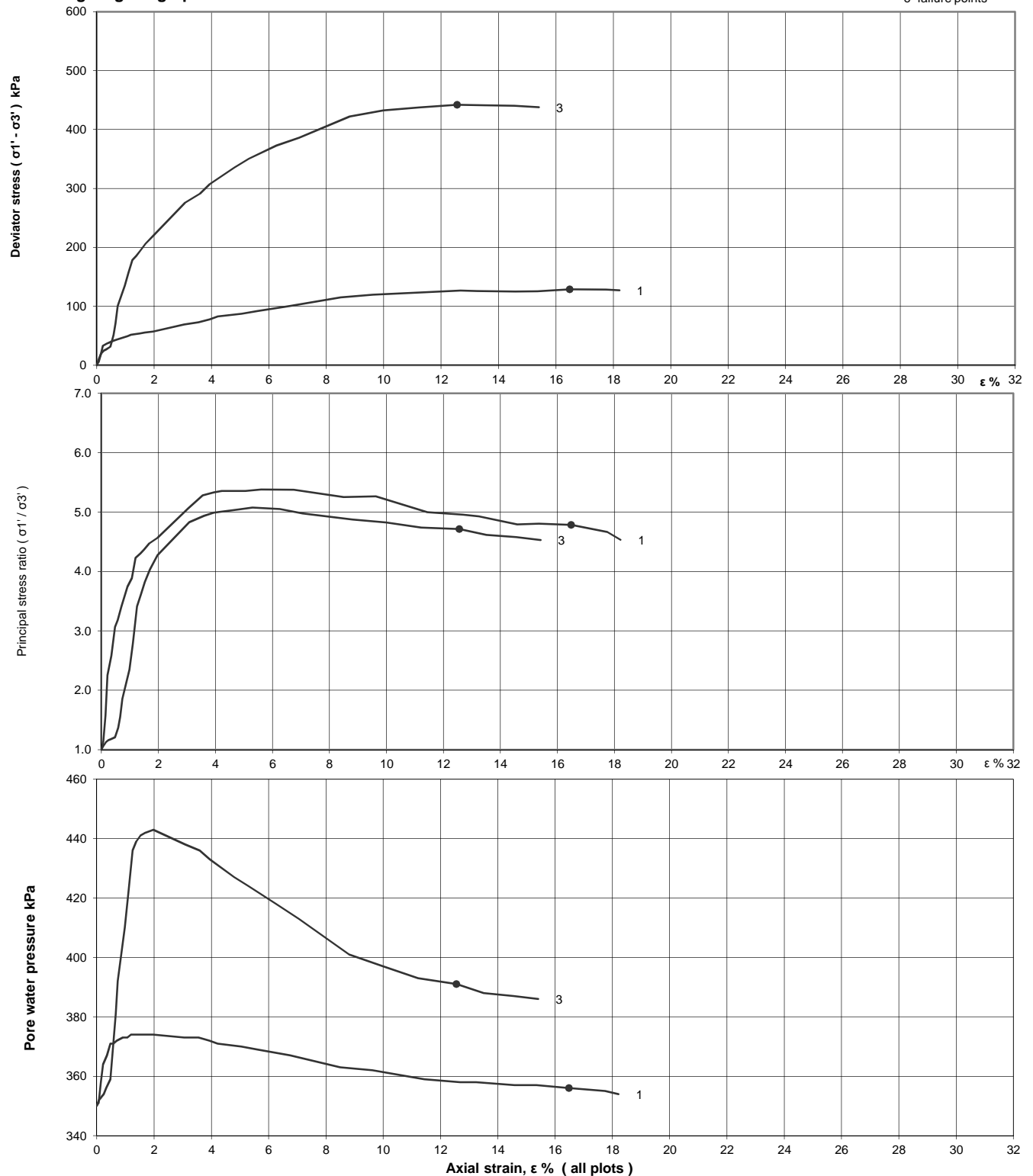


Ref	SLR8.1 Rev 85 May 09	ESG Environmental Scientifics Group	UKAS 1157	Printed:12/12/2014 14:42	Figure CU sheet 1 of 3
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# Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure ( BS1377 : Part 8 : 1990 )

Project No	N4263-14	Sample Details:	Hole No	G10
Project Name	Dellimana		Depth (m BGL)	3.30-4.30
			No	1
			ID	
			Spec Ref	

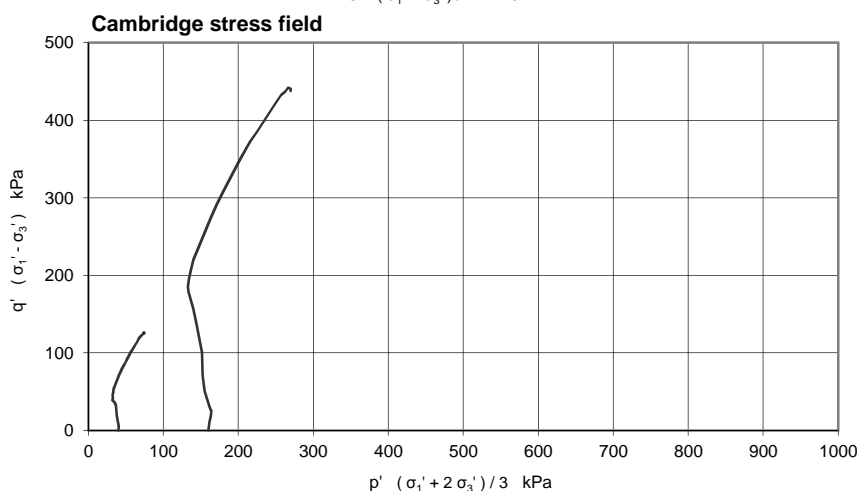
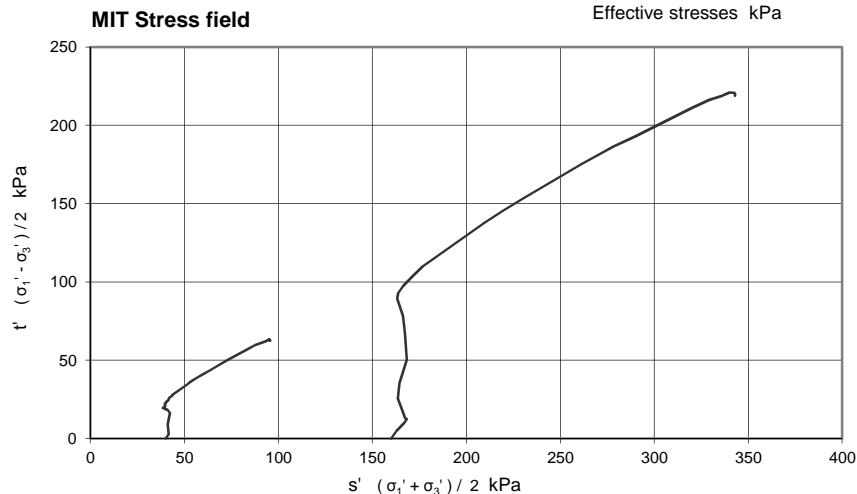
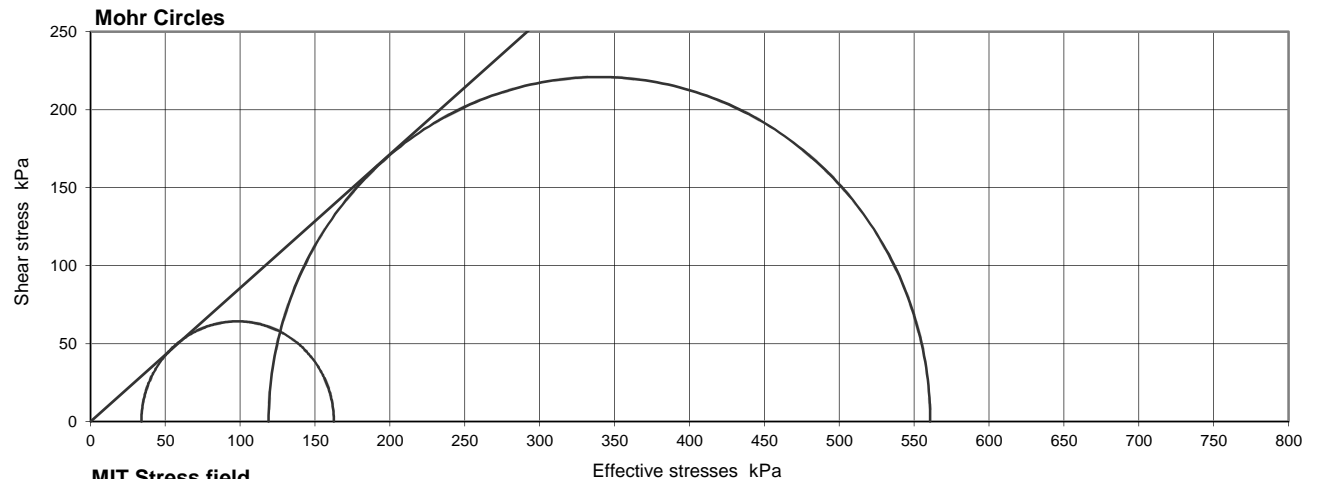
Shearing stages - graphical data



Ref	ESG	UKAS	Printed: 12/12/2014 14:42	Figure
SLR8.1 Rev 85 May 09	Environmental Scientifics Group	1157		CU
				sheet 2 of 3

# **Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure ( BS1377 : Part 8 : 1990 )**

Project No	N4263-14	Sample Details:	Hole No	G10
Project Name	Dellimana		Depth (m BGL)	3.30-4.30
			No	1
			ID	
			Spec Ref	
			Type	



## **Compression stages**

Specimen	1	2	3
Cell pressure	390		510
Initial pwp	350		350
Initial $\sigma_3'$	40		160
Rate of strain	1.33		1.33

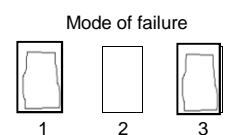
## **Failure conditions**

Criterion	Maximum deviator stress		
Axial strain	16.49		12.56
$(\sigma_1' / \sigma_3')_f$	4.782		4.713
$(\sigma_1' - \sigma_3')_f$	128.6		441.8
$u_f$	356		391
$\sigma_3'_f$	34		119
$\sigma_1'_f$	163		561
$A_f$	0.05		0.09
Time to failure	12.4		9.4

## **Shear Strength Parameters**

		Linear regression
$c'$	kPa	( 0.0 )
$\phi'$	degrees	( 40.9 )
		Manual re-assessment
$c'$	kPa	0
$\phi'$	degrees	40.6

Notes : Deviator stresses corrected for area change, vertical side drains and 0.276 mm thick rubber membrane(s)



Ref SLR8.1 Rev 85 May 09	<b>ESG</b> Environmental Scientifics Group	Printed:12/12/2014 14:42	Figure <b>CU</b> sheet 3 of 3
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## Laboratory Test Certificate

### Determination of Density - Immersion in Water Method according to BS 1377-2: Clause 7.3

Client name:	J&P AVAX S.A.	Date of test:	14/10/2014	Certificate no:	TCR189
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	16/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	DIW013
				Tested by:	LS / MH

#### Sample Information:

Sample ref N°:	BH G1	Sample description:	Soil
Sampling location:	BH G1 Sample 3	Date of sampling:	9/30/2014

#### Dry Bulk Density:

Mass of specimen	$m_s$	135.39	g
Mass of specimen + Plasticine	$m_f$	150.45	g
Mass of specimen + Plasticine + Wax	$m_w$	169.51	g
Mass of specimen in water	$m_g$	84.15	g
Volume of specimen	$V_s = (m_w - m_g) / (m_w - m_f / \rho_p)$	64.18	cm <sup>3</sup>
Bulk density of specimen	$\rho = m_s / V_s$	2.109	Mg/m <sup>3</sup>
Moisture content	$w$	25.3	%
<b>Dry Density</b>	$\rho_d = 100 \rho / 100 + w$	<b>1.684</b>	<b>Mg/m<sup>3</sup></b>

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Laboratory Manager

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Registration No.: C32227

Directors: Alfred Xerri

Filename: J2094\_Soil\_BulkDensity\_TCR197\_DIW021\_BH NB3 27.5m.xl



# TERRACORE

## Laboratory Test Certificate

### Determination of Density - Immersion in Water Method according to BS 1377-2: Clause 7.3

Client name:	J&P AVAX S.A.	Date of test:	14/10/2014	Certificate no:	TCR190
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	16/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	DIW014
				Tested by:	LS / MH

#### Sample Information:

Sample ref N°:	BH G2	Sample description:	Soil
Sampling location:	BH G2 Sample 6	Date of sampling:	9/30/2014

#### Dry Bulk Density:

Mass of specimen	$m_s$	180.22	g
Mass of specimen + Plasticine	$m_f$	201.98	g
Mass of specimen + Plasticine + Wax	$m_w$	215.14	g
Mass of specimen in water	$m_g$	96.90	g
Volume of specimen	$V_s = (m_w - m_g) / (m_w - m_f / \rho_p)$	103.62	cm <sup>3</sup>
Bulk density of specimen	$\rho = m_s / V_s$	1.739	Mg/m <sup>3</sup>
Moisture content	$w$	69.1	%
<b>Dry Density</b>	$\rho_d = 100 \rho / 100 + w$	<b>1.029</b>	<b>Mg/m<sup>3</sup></b>

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Laboratory Manager

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Registration No.: C32227

Directors: Alfred Xerri

Filename: J2094\_Soil\_BulkDensity\_TCR197\_DIW021\_BH NB3 27.5m.xl

# TERRACORE

## Laboratory Test Certificate

### Determination of Density - Immersion in Water Method according to BS 1377-2: Clause 7.3

Client name:	J&P AVAX S.A.	Date of test:	14/10/2014	Certificate no:	TCR191
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	16/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	DIW015
				Tested by:	LS / MH

#### Sample Information:

Sample ref N°:	BH G2	Sample description:	Soil
Sampling location:	BH G2 Sample 9	Date of sampling:	1/10/2014

#### Dry Bulk Density:

Mass of specimen	$m_s$	280.21	g
Mass of specimen + Plasticine	$m_f$	301.74	g
Mass of specimen + Plasticine + Wax	$m_w$	319.54	g
Mass of specimen in water	$m_g$	166.55	g
Volume of specimen	$V_s = (m_w - m_g) / (m_w - m_f / \rho_p)$	133.21	cm <sup>3</sup>
Bulk density of specimen	$\rho = m_s / V_s$	2.103	Mg/m <sup>3</sup>
Moisture content	$w$	23.2	%
<b>Dry Density</b>	$\rho_d = 100 \rho / 100 + w$	<b>1.708</b>	<b>Mg/m<sup>3</sup></b>

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Laboratory Manager

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Registration No.: C32227

Directors: Alfred Xerri

Filename: J2094\_Soil\_BulkDensity\_TCR197\_DIW021\_BH NB3 27.5m.xl

# TERRACORE

## Laboratory Test Certificate

### Determination of Density - Immersion in Water Method according to BS 1377-2: Clause 7.3

Client name:	J&P AVAX S.A.	Date of test:	7/10/2014	Certificate no:	TCR198
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	16/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	DIW022
				Tested by:	LS / MH

#### Sample Information:

Sample ref N°:	BH G4	Sample description:	Soil
Sampling location:	BH G4 S6	Date of sampling:	29/9/2014

#### Dry Bulk Density:

Mass of specimen	$m_s$	115.92	g
Mass of specimen + Plasticine	$m_f$	127.15	g
Mass of specimen + Plasticine + Wax	$m_w$	132.68	g
Mass of specimen in water	$m_g$	68.80	g
Volume of specimen	$V_s = (m_w - m_f) / (m_w - m_f / \rho_p)$	57.74	cm <sup>3</sup>
Bulk density of specimen	$\rho = m_s / V_s$	2.008	Mg/m <sup>3</sup>
Moisture content	$w$	37.9	%
<b>Dry Density</b>	$\rho_d = 100 \rho / 100 + w$	<b>1.456</b>	<b>Mg/m<sup>3</sup></b>

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



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Laboratory Manager

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Directors: Alfred Xerri

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## Laboratory Test Certificate

### Determination of Density - Immersion in Water Method according to BS 1377-2: Clause 7.3

Client name:	J&P AVAX S.A.	Date of test:	8/10/2014	Certificate no:	TCR209
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	16/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	DIW033
				Tested by:	LS / MH

#### Sample Information:

Sample ref N°:	BH G4	Sample description:	Soil
Sampling location:	BH G4 S2	Date of sampling:	29/9/2014

#### Dry Bulk Density:

Mass of specimen	$m_s$	299.71	g
Mass of specimen + Plasticine	$m_f$	305.87	g
Mass of specimen + Plasticine + Wax	$m_w$	319.17	g
Mass of specimen in water	$m_g$	155.15	g
Volume of specimen	$V_s = (m_w - m_f) / (m_w - m_f / \rho_p)$	149.24	cm <sup>3</sup>
Bulk density of specimen	$\rho = m_s / V_s$	2.008	Mg/m <sup>3</sup>
Moisture content	$w$	31.1	%
<b>Dry Density</b>	$\rho_d = 100 \rho / 100 + w$	<b>1.531</b>	<b>Mg/m<sup>3</sup></b>

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Laboratory Manager

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Directors: Alfred Xerri

Filename: J2094\_Soil\_BulkDensity\_TCR197\_DIW021\_BH NB3 27.5m.xl

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## Laboratory Test Certificate

### Determination of Density - Immersion in Water Method according to BS 1377-2: Clause 7.3

Client name:	J&P AVAX S.A.	Date of test:	18/10/2014	Certificate no:	TCR252
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	DIW039
				Tested by:	LS / MH

#### Sample Information:

Sample ref N°:	BH G5	Sample description:	Soil
Sampling location:	BH G5 S5	Date of sampling:	3/10/2014

#### Dry Bulk Density:

Mass of specimen	$m_s$	115.73	g
Mass of specimen + Plasticine	$m_f$	124.45	g
Mass of specimen + Plasticine + Wax	$m_w$	141.25	g
Mass of specimen in water	$m_g$	63.25	g
Volume of specimen	$V_s = (m_w - m_f) / (m_w - m_f / \rho_p)$	59.33	cm <sup>3</sup>
Bulk density of specimen	$\rho = m_s / V_s$	1.951	Mg/m <sup>3</sup>
Moisture content	$w$	16.2	%
<b>Dry Density</b>	$\rho_d = 100 \rho / 100 + w$	<b>1.678</b>	<b>Mg/m<sup>3</sup></b>

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Laboratory Manager

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Directors: Alfred Xerri

Filename: J2094\_Soil\_BulkDensity\_TCR252\_DIW039\_BH G5 S5.xls

# TERRACORE

## Laboratory Test Certificate

### Determination of Density - Immersion in Water Method according to BS 1377-2: Clause 7.3

Client name:	J&P AVAX S.A.	Date of test:	18/10/2014	Certificate no:	TCR253
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	DIW040
				Tested by:	LS / MH

#### Sample Information:

Sample ref N°:	BH G5	Sample description:	Soil
Sampling location:	BH G5 S11	Date of sampling:	3/10/2014

#### Dry Bulk Density:

Mass of specimen	$m_s$	191.27	g
Mass of specimen + Plasticine	$m_f$	205.78	g
Mass of specimen + Plasticine + Wax	$m_w$	219.12	g
Mass of specimen in water	$m_g$	107.40	g
Volume of specimen	$V_s = (m_w - m_f) / (m_w - m_f / \rho_p)$	96.90	cm <sup>3</sup>
Bulk density of specimen	$\rho = m_s / V_s$	1.974	Mg/m <sup>3</sup>
Moisture content	$w$	17.4	%
<b>Dry Density</b>	$\rho_d = 100 \rho / 100 + w$	<b>1.681</b>	<b>Mg/m<sup>3</sup></b>

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Laboratory Manager

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Registration No.: C32227

Directors: Alfred Xerri

Filename: J2094\_Soil\_BulkDensity\_TCR253\_DIW040\_BH G5 S11.xls

# TERRACORE

## Laboratory Test Certificate

### Determination of Density - Immersion in Water Method according to BS 1377-2: Clause 7.3

Client name:	J&P AVAX S.A.	Date of test:	18/10/2014	Certificate no:	TCR254
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	DIW041
				Tested by:	LS / MH

#### Sample Information:

Sample ref N°:	BH G5	Sample description:	Soil
Sampling location:	BH G5 S13	Date of sampling:	3/10/2014

#### Dry Bulk Density:

Mass of specimen	$m_s$	169.49	g
Mass of specimen + Plasticine	$m_f$	174.12	g
Mass of specimen + Plasticine + Wax	$m_w$	191.25	g
Mass of specimen in water	$m_g$	84.80	g
Volume of specimen	$V_s = (m_w - m_g) / (m_w - m_f / \rho_p)$	87.42	cm <sup>3</sup>
Bulk density of specimen	$\rho = m_s / V_s$	1.939	Mg/m <sup>3</sup>
Moisture content	$w$	12.7	%
<b>Dry Density</b>	$\rho_d = 100 \rho / 100 + w$	<b>1.720</b>	<b>Mg/m<sup>3</sup></b>

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Laboratory Manager

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Registration No.: C32227

Directors: Alfred Xerri

Filename: J2094\_Soil\_BulkDensity\_TCR254\_DIW041\_BH G5 S13.xls



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## Laboratory Test Certificate

### Determination of Density - Immersion in Water Method according to BS 1377-2: Clause 7.3

Client name:	J&P AVAX S.A.	Date of test:	14/10/2014	Certificate no:	TCR188
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	16/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	DIW012
				Tested by:	LS / MH

#### Sample Information:

Sample ref N°:	BH G6	Sample description:	Soil
Sampling location:	BH G6 Sample 1	Date of sampling:	9/28/2014

#### Dry Bulk Density:

Mass of specimen	$m_s$	137.75	g
Mass of specimen + Plasticine	$m_f$	169.74	g
Mass of specimen + Plasticine + Wax	$m_w$	181.54	g
Mass of specimen in water	$m_g$	81.85	g
Volume of specimen	$V_s = (m_w - m_g) / (m_w - m_f / \rho_p)$	86.58	cm <sup>3</sup>
Bulk density of specimen	$\rho = m_s / V_s$	1.591	Mg/m <sup>3</sup>
Moisture content	$w$	52.0	%
<b>Dry Density</b>	$\rho_d = 100 \rho / 100 + w$	<b>1.047</b>	<b>Mg/m<sup>3</sup></b>

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Laboratory Manager

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Registration No.: C32227

Directors: Alfred Xerri

Filename: J2094\_Soil\_BulkDensity\_TCR188\_DIW012\_BHG6 S1.xls

# TERRACORE

## Laboratory Test Certificate

### Determination of Density - Immersion in Water Method according to BS 1377-2: Clause 7.3

Client name:	J&P AVAX S.A.	Date of test:	7/10/2014	Certificate no:	TCR199
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	16/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	DIW023
				Tested by:	LS / MH

#### Sample Information:

Sample ref N°:	BH G6	Sample description:	Soil
Sampling location:	BH G6 S8	Date of sampling:	28/9/2014

#### Dry Bulk Density:

Mass of specimen	$m_s$	201.37	g
Mass of specimen + Plasticine	$m_f$	223.47	g
Mass of specimen + Plasticine + Wax	$m_w$	241.75	g
Mass of specimen in water	$m_g$	123.12	g
Volume of specimen	$V_s = (m_w - m_f) / (m_w - m_f / \rho_p)$	98.32	cm <sup>3</sup>
Bulk density of specimen	$\rho = m_s / V_s$	2.048	Mg/m <sup>3</sup>
Moisture content	$w$	27.7	%
<b>Dry Density</b>	$\rho_d = 100 \rho / 100 + w$	<b>1.604</b>	<b>Mg/m<sup>3</sup></b>

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Laboratory Manager

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Registration No.: C32227

Directors: Alfred Xerri

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## Laboratory Test Certificate

### Determination of Density - Immersion in Water Method according to BS 1377-2: Clause 7.3

Client name:	J&P AVAX S.A.	Date of test:	7/10/2014	Certificate no:	TCR200
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	16/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	DIW024
				Tested by:	LS / MH

#### Sample Information:

Sample ref N°:	BH G6	Sample description:	Soil
Sampling location:	BH G6 S9	Date of sampling:	28/9/2014

#### Dry Bulk Density:

Mass of specimen	$m_s$	386.22	g
Mass of specimen + Plasticine	$m_f$	399.14	g
Mass of specimen + Plasticine + Wax	$m_w$	407.84	g
Mass of specimen in water	$m_g$	218.40	g
Volume of specimen	$V_s = (m_w - m_f) / (m_w - m_f / \rho_p)$	179.77	cm <sup>3</sup>
Bulk density of specimen	$\rho = m_s / V_s$	2.148	Mg/m <sup>3</sup>
Moisture content	$w$	29.4	%
<b>Dry Density</b>	$\rho_d = 100 \rho / 100 + w$	<b>1.661</b>	<b>Mg/m<sup>3</sup></b>

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Laboratory Manager

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Registration No.: C32227

Directors: Alfred Xerri

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## Laboratory Test Certificate

### Determination of Density - Immersion in Water Method according to BS 1377-2: Clause 7.3

Client name:	J&P AVAX S.A.	Date of test:	7/10/2014	Certificate no:	TCR201
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	16/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	DIW025
				Tested by:	LS / MH

#### Sample Information:

Sample ref N°:	BH G6	Sample description:	Soil
Sampling location:	BH G6 S14	Date of sampling:	28/9/2014

#### Dry Bulk Density:

Mass of specimen	$m_s$	240.23	g
Mass of specimen + Plasticine	$m_f$	251.65	g
Mass of specimen + Plasticine + Wax	$m_w$	278.14	g
Mass of specimen in water	$m_g$	139.90	g
Volume of specimen	$V_s = (m_w - m_f) / (m_w - m_f / \rho_p)$	108.81	cm <sup>3</sup>
Bulk density of specimen	$\rho = m_s / V_s$	2.208	Mg/m <sup>3</sup>
Moisture content	$w$	10.4	%
<b>Dry Density</b>	$\rho_d = 100 \rho / 100 + w$	<b>1.999</b>	<b>Mg/m<sup>3</sup></b>

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Laboratory Manager

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Directors: Alfred Xerri

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## Laboratory Test Certificate

### Determination of Density - Immersion in Water Method according to BS 1377-2: Clause 7.3

Client name:	J&P AVAX S.A.	Date of test:	7/10/2014	Certificate no:	TCR202
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	16/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	DIW026
				Tested by:	LS / MH

#### Sample Information:

Sample ref N°:	BH G7	Sample description:	Soil
Sampling location:	BH G7 S17	Date of sampling:	26/9/2014

#### Dry Bulk Density:

Mass of specimen	$m_s$	366.93	g
Mass of specimen + Plasticine	$m_f$	379.14	g
Mass of specimen + Plasticine + Wax	$m_w$	394.54	g
Mass of specimen in water	$m_g$	201.90	g
Volume of specimen	$V_s = (m_w - m_f) / (m_w - m_f / \rho_p)$	175.53	cm <sup>3</sup>
Bulk density of specimen	$\rho = m_s / V_s$	2.090	Mg/m <sup>3</sup>
Moisture content	$w$	20.4	%
<b>Dry Density</b>	$\rho_d = 100 \rho / 100 + w$	<b>1.737</b>	<b>Mg/m<sup>3</sup></b>

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Laboratory Manager

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Registration No.: C32227

Directors: Alfred Xerri

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## Laboratory Test Certificate

### Determination of Density - Immersion in Water Method according to BS 1377-2: Clause 7.3

Client name:	J&P AVAX S.A.	Date of test:	8/10/2014	Certificate no:	TCR210
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	16/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	DIW034
				Tested by:	LS / MH

#### Sample Information:

Sample ref N°:	BH G4	Sample description:	Soil
Sampling location:	BH G4 S5	Date of sampling:	29/9/2014

#### Dry Bulk Density:

Mass of specimen	$m_s$	200.84	g
Mass of specimen + Plasticine	$m_f$	213.44	g
Mass of specimen + Plasticine + Wax	$m_w$	231.65	g
Mass of specimen in water	$m_g$	101.00	g
Volume of specimen	$V_s = (m_w - m_f) / (m_w - m_f / \rho_p)$	110.42	cm <sup>3</sup>
Bulk density of specimen	$\rho = m_s / V_s$	1.819	Mg/m <sup>3</sup>
Moisture content	$w$	44.8	%
<b>Dry Density</b>	$\rho_d = 100 \rho / 100 + w$	<b>1.256</b>	<b>Mg/m<sup>3</sup></b>

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Laboratory Manager

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Registration No.: C32227

Directors: Alfred Xerri

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## Laboratory Test Certificate

### Determination of Density - Immersion in Water Method according to BS 1377-2: Clause 7.3

Client name:	J&P AVAX S.A.	Date of test:	8/10/2014	Certificate no:	TCR211
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	16/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	DIW035
				Tested by:	LS / MH

#### Sample Information:

Sample ref N°:	BH G7	Sample description:	Soil
Sampling location:	BH G7 S9	Date of sampling:	26/9/2014

#### Dry Bulk Density:

Mass of specimen	$m_s$	186.23	g
Mass of specimen + Plasticine	$m_f$	201.14	g
Mass of specimen + Plasticine + Wax	$m_w$	222.74	g
Mass of specimen in water	$m_g$	103.75	g
Volume of specimen	$V_s = (m_w - m_f) / (m_w - m_f / \rho_p)$	94.99	cm <sup>3</sup>
Bulk density of specimen	$\rho = m_s / V_s$	1.961	Mg/m <sup>3</sup>
Moisture content	$w$	30.2	%
<b>Dry Density</b>	$\rho_d = 100 \rho / 100 + w$	<b>1.506</b>	<b>Mg/m<sup>3</sup></b>

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Laboratory Manager

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Registration No.: C32227

Directors: Alfred Xerri

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## Laboratory Test Certificate

### Determination of Density - Immersion in Water Method according to BS 1377-2: Clause 7.3

Client name:	J&P AVAX S.A.	Date of test:	8/10/2014	Certificate no:	TCR212
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	16/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	DIW036
				Tested by:	LS / MH

#### Sample Information:

Sample ref N°:	BH G7	Sample description:	Soil
Sampling location:	BH G7 S11	Date of sampling:	26/9/2014

#### Dry Bulk Density:

Mass of specimen	$m_s$	253.30	g
Mass of specimen + Plasticine	$m_f$	274.14	g
Mass of specimen + Plasticine + Wax	$m_w$	291.54	g
Mass of specimen in water	$m_g$	127.10	g
Volume of specimen	$V_s = (m_w - m_f) / (m_w - m_f / \rho_p)$	145.11	cm <sup>3</sup>
Bulk density of specimen	$\rho = m_s / V_s$	1.746	Mg/m <sup>3</sup>
Moisture content	$w$	39.1	%
<b>Dry Density</b>	$\rho_d = 100 \rho / 100 + w$	<b>1.255</b>	<b>Mg/m<sup>3</sup></b>

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Laboratory Manager

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Registration No.: C32227

Directors: Alfred Xerri

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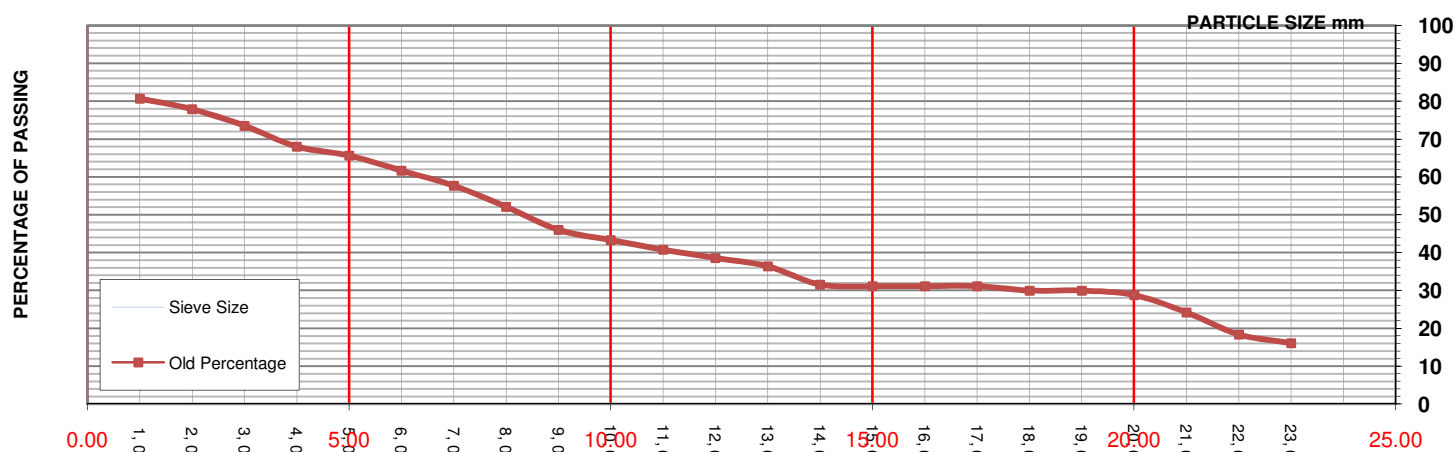
## Laboratory Test Certificate

### Determination of Combined Particle Size distribution and Sedimentation according to BS 7755-5.4: 1998 and ISO 11277: 1998

Client name:	J&P AVAX S.A.	Date of test:	18/10/2014	Certificate no:	TCR264
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	SED006
				Tested by:	LS

Sample Information:		Test Information:	
Sample ref N°:	140930 - BH G1	Initial mass of sample as received:	509.1 g
Sampling location:	BH G1	Mass of dry sample before washing:	390.4 g
Sample Number:	Sample 4	Mass of dry sample after washing:	270.3 g
Date of sampling:	30/09/2014	Moisture content:	30.40 %
		Silt content:	31.60 %
		Mass of sample for grading:	390.4 g

Particle size distribution			Particle size distribution sedimentation by hydrometer			
Sieve size mm	Retained %	Passing %	Hydrometer No:			
20.00	19.33	80.67	Meniscus correction:	$z_m$	0.3	
14.00	2.80	77.88	Reading in despersant:	$d_o'$	0.1	
10.00	4.40	73.48	Dry mass of sample:	$m_t$ g	141	
6.30	5.47	68.01	Particle density:	$\rho_s$ Mg/m <sup>3</sup>	2.587	
5.00	2.34	65.67	Viscosity of water:	$\eta$ mPa s	0.9021	
3.35	4.02	61.66			0.891	
2.00	3.99	57.66				
1.18	5.52	52.15				
0.600	6.15	45.99	Pretreatment			
0.425	2.64	43.35	Preatreated with:			
0.300	2.57	40.78	Initial dry mass of sample:	$m_o$ g	149.1	
0.212	2.21	38.57	Dry mass:	$m_p$ g	141	
0.150	2.21	36.35	Preatreatment loss:		8.1	
0.063	4.75	31.60				



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
Jessica Farrugia Manager	Chris Magro Laboratory Manager

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Filename: J2094\_Soil\_TCR264\_SED006.xlsx

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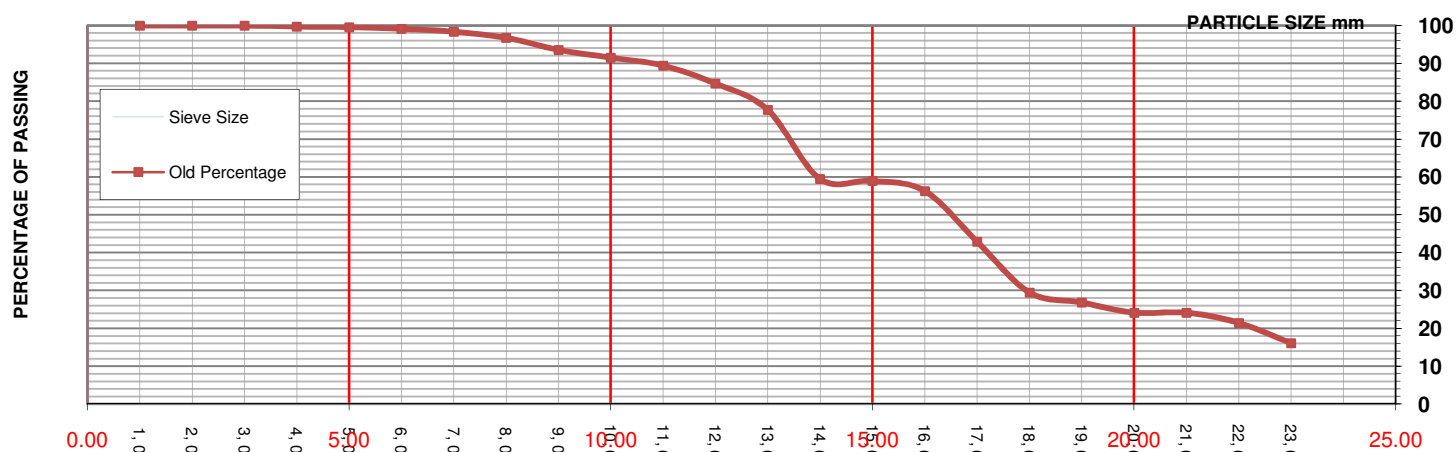
## Laboratory Test Certificate

### Determination of Combined Particle Size distribution and Sedimentation according to BS 7755-5.4: 1998 and ISO 11277: 1998

Client name:	J&P AVAX S.A.	Date of test:	18/10/2014	Certificate no:	TCR265
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	SED007
				Tested by:	LS

Sample Information:		Test Information:	
Sample ref N°:	141001 - BH G2	Initial mass of sample as received:	568.7 g
Sampling location:	BH G2	Mass of dry sample before washing:	336.4 g
Sample description:	Sample 6	Mass of dry sample after washing:	136.0 g
Date of sampling:	01/10/2014	Moisture content:	69.05 %
		Silt content:	59.44 %
		Mass of sample for grading:	336.4 g

Particle size distribution			Particle size distribution sedimentation by hydrometer					
Sieve size	Retained	Passing	Hydrometer No:				Particle diameter d <sub>p</sub>	Percentage (P) by Mass from Sample
mm	%	%	Meniscus correction:	z <sub>m</sub>	0.3	mm		
20.00	0.00	100.00	Reading in dispersant:	d <sub>0</sub> '	1			
14.00	0.00	100.00	Dry mass of sample:	m <sub>t</sub>	g	63.5		
10.00	0.00	100.00	Particle density:	ρ <sub>s</sub>	Mg/m <sup>3</sup>	2.426	0.0625	58.94
6.30	0.30	99.70	Viscosity of water:	η	mPa s	0.9132	0.0525	56.26
5.00	0.15	99.55				0.9021	0.0397	42.87
3.35	0.45	99.10				0.9132	0.0298	29.47
2.00	0.72	98.38					0.0213	26.79
1.18	1.62	96.76					0.0111	24.11
0.600	3.18	93.58	Pretreatment				0.0055	24.11
0.425	2.10	91.47	Preatreated with:				0.0031	21.43
0.300	2.10	89.37	Initial dry mass of sample:	m <sub>0</sub>	g	125.17	0.0017	16.07
0.212	4.74	84.63	Dry mass:	m <sub>p</sub>	g	115.88		
0.150	6.93	77.69	Preatreatment loss:		g	9.29		
0.063	18.25	59.44						



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
 Jessica Farrugia Manager	 Chris Magro Laboratory Manager

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Registration No.: C32227  
Directors: Alfred Xerri  
Filename: J2094\_Soil\_TCR265\_SED007.xlsx

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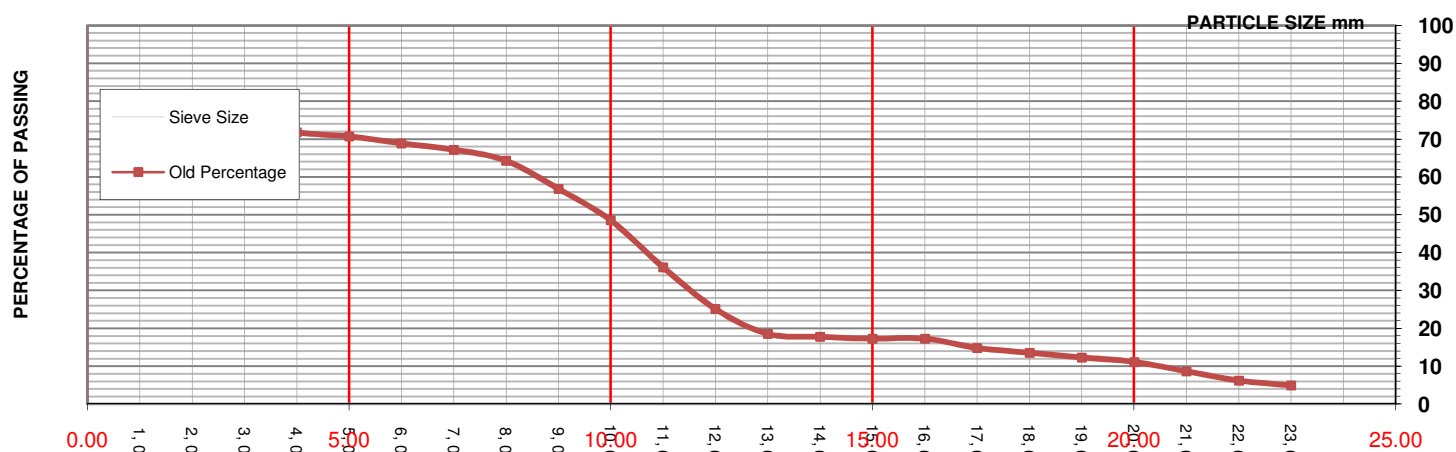
## Laboratory Test Certificate

### Determination of Combined Particle Size distribution and Sedimentation according to BS 7755-5.4: 1998 and ISO 11277: 1998



Client name:	J&P AVAX S.A.	Date of test:	18/10/2014	Certificate no:	TCR266
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	SED008
				Tested by:	LS

Sample Information:		Test Information:	
Sample ref N°:	141001 - BH G2	Initial mass of sample as received:	631.5 g
Sampling location:	BH G2	Mass of dry sample before washing:	519.7 g
Sample description:	Sample 7	Mass of dry sample after washing:	427.1 g
Date of sampling:	01/10/2014	Moisture content:	21.51 %
		Silt content:	17.75 %
		Mass of sample for grading:	519.7 g

Particle size distribution			Particle size distribution sedimentation by hydrometer					
Sieve size mm	Retained %	Passing %	Hydrometer No:					Percentage (P) by Mass from Sample %
			Meniscus correction:	$z_m$	<b>0.3</b>	Particle diameter $d_p$ mm		
20.00	<b>20.46</b>	<b>79.54</b>	Reading in despersant:	$d_o'$	<b>1</b>			
14.00	<b>2.97</b>	<b>76.57</b>	Dry mass of sample:	$m_t$ g	<b>129.5</b>			
10.00	<b>1.54</b>	<b>75.03</b>	Particle density:	$\rho_s$ Mg/m <sup>3</sup>	<b>2.678</b>	<b>0.0630</b>	<b>17.25</b>	
6.30	<b>3.26</b>	<b>71.77</b>	Viscosity of water:	$\eta$ mPa s	<b>0.9132</b>	<b>0.0530</b>	<b>17.25</b>	
5.00	<b>1.06</b>	<b>70.71</b>			<b>0.9021</b>	<b>0.0384</b>	<b>14.79</b>	
3.35	<b>1.87</b>	<b>68.84</b>				<b>0.0274</b>	<b>13.56</b>	
2.00	<b>1.70</b>	<b>67.14</b>				<b>0.0196</b>	<b>12.32</b>	
1.18	<b>2.85</b>	<b>64.28</b>				<b>0.0102</b>	<b>11.09</b>	
0.600	<b>7.43</b>	<b>56.86</b>	Pretreatment			<b>0.0052</b>	<b>8.63</b>	
0.425	<b>8.31</b>	<b>48.54</b>	Preatreated with:			<b>0.0029</b>	<b>6.16</b>	
0.300	<b>12.38</b>	<b>36.16</b>	Initial dry mass of sample:	$m_o$ g	<b>178.97</b>	<b>0.0015</b>	<b>4.93</b>	
0.212	<b>11.05</b>	<b>25.11</b>	Dry mass:	$m_p$ g	<b>174.58</b>			
0.150	<b>6.58</b>	<b>18.53</b>	Preatreatment loss:	g	<b>4.39</b>			
0.063	<b>0.78</b>	<b>17.75</b>						



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
	
Jessica Farrugia Manager	Chris Magro Laboratory Manager

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Registration No.: C32227  
Directors: Alfred Xerri  
Filename: J2094\_Soil\_TCR266\_SED008.xlsx

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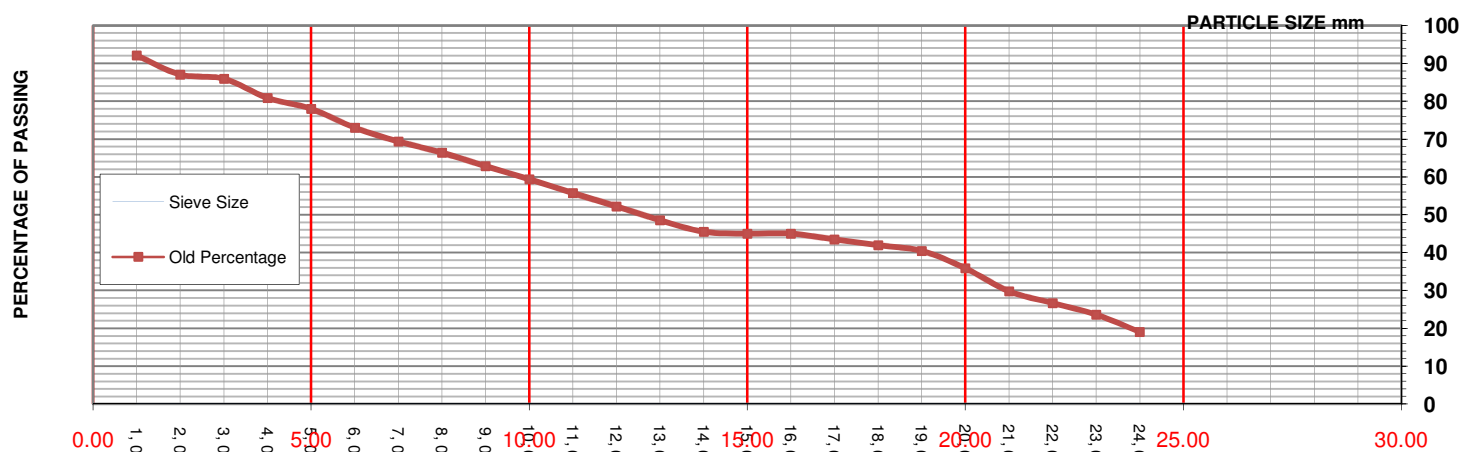
## Laboratory Test Certificate

### Determination of Combined Particle Size distribution and Sedimentation according to BS 7755-5.4: 1998 and ISO 11277: 1998

Client name:	J&P AVAX S.A.	Date of test:	22/10/2014	Certificate no:	TCR267
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	28/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	SED009
				Tested by:	LS

Sample Information:		Test Information:	
Sample ref N°:	141001 - BH G2	Initial mass of sample as received:	704.4 g
Sampling location:	BH G2	Mass of dry sample before washing:	571.8 g
Sample description:	Sample 9	Mass of dry sample after washing:	312.2 g
Date of sampling:	01/10/2014	Moisture content:	23.19 %
		Silt content:	45.49 %
		Mass of sample for grading:	571.8 g

Particle size distribution			Particle size distribution sedimentation by hydrometer			
Sieve size mm	Retained %	Passing %	Hydrometer No:			
20.00	7.86	92.14	Meniscus correction:	$z_m$	0.3	
14.00	5.12	87.02	Reading in despersant:	$d_o'$	1.5	
10.00	1.12	85.90	Dry mass of sample:	$m_t$ g	111	
6.30	5.08	80.82	Particle density:	$\rho_s$ Mg/m <sup>3</sup>	2.443	0.0548
5.00	2.83	77.99	Viscosity of water:	$\eta$ mPa s	0.9021	0.0448
3.35	5.04	72.95			0.9132	0.0323
2.00	3.63	69.32			0.9243	0.0232
1.18	2.94	66.38				0.0167
0.600	3.56	62.82	Pretreatment			0.0091
0.425	3.47	59.35	Preatreated with:			0.0048
0.300	3.58	55.77	Initial dry mass of sample:	$m_o$ g	134.2	0.0035
0.212	3.56	52.21	Dry mass:	$m_p$ g	132.1	0.0025
0.150	3.69	48.52	Preatreatment loss:		2.1	0.0002
0.063	3.03	45.49				



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
Jessica Farrugia Manager	Chris Magro Manager
Quality	Laboratory

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Registration No.: C32227  
Directors: Alfred Xerri  
Filename: J2094\_Soil\_TCR267\_SED009.xlsx

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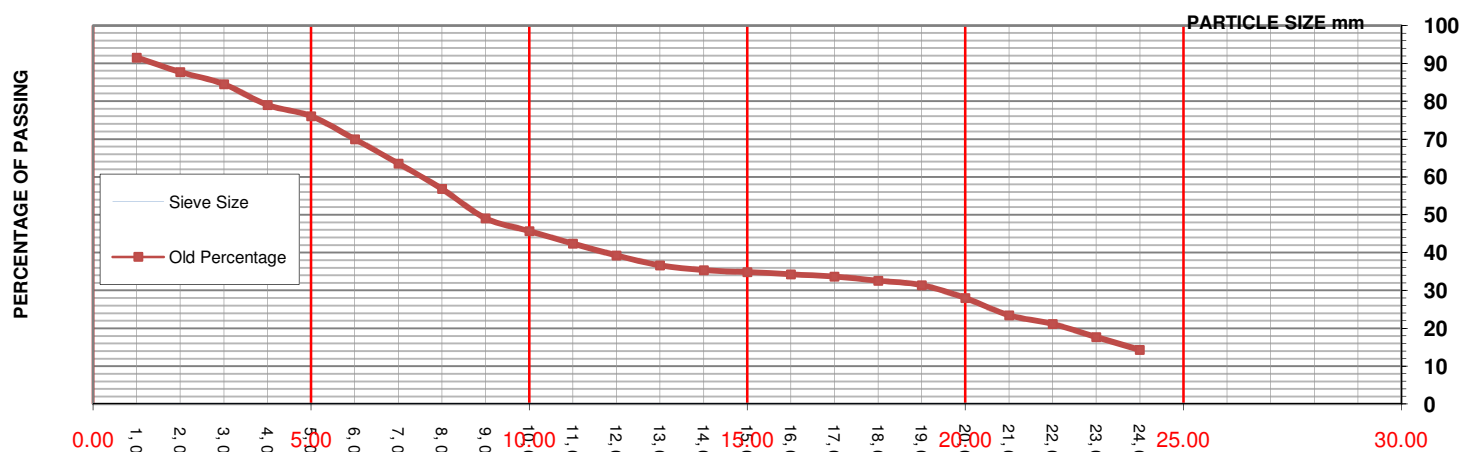
## Laboratory Test Certificate

### Determination of Combined Particle Size distribution and Sedimentation according to BS 7755-5.4: 1998 and ISO 11277: 1998

Client name:	J&P AVAX S.A.	Date of test:	22/10/2014	Certificate no:	TCR268
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	28/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	SED010
				Tested by:	LS

Sample Information:		Test Information:	
Sample ref N°:	141001 - BH G2	Initial mass of sample as received:	635.6 g
Sampling location:	BH G2	Mass of dry sample before washing:	513.2 g
Sample description:	Sample 12	Mass of dry sample after washing:	331.4 g
Date of sampling:	01/10/2014	Moisture content:	23.85 %
		Silt content:	35.35 %
		Mass of sample for grading:	513.2 g

Particle size distribution			Particle size distribution sedimentation by hydrometer			
Sieve size mm	Retained %	Passing %	Hydrometer No:			
20.00	8.53	91.47	Meniscus correction:	$z_m$	0.3	
14.00	3.73	87.73	Reading in despersant:	$d_o'$	1.5	
10.00	3.27	84.46	Dry mass of sample:	$m_t$ g	145	
6.30	5.49	78.97	Particle density:	$\rho_s$ Mg/m <sup>3</sup>	2.522	0.0532
5.00	2.96	76.02	Viscosity of water:	$\eta$ mPa s	0.9021	0.0432
3.35	6.08	69.94			0.9132	0.0309
2.00	6.46	63.48			0.9243	0.0222
1.18	6.67	56.82				0.0160
0.600	7.71	49.10	Pretreatment			0.0087
0.425	3.40	45.71	Preatreated with:			0.0046
0.300	3.35	42.35	Initial dry mass of sample:	$m_o$ g	146	0.0034
0.212	3.06	39.29	Dry mass:	$m_p$ g	143.2	0.0025
0.150	2.66	36.63	Preatreatment loss:		2.8	0.0002
0.063	1.28	35.35				



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
 Jessica Farrugia Manager	 Chris Magro Manager

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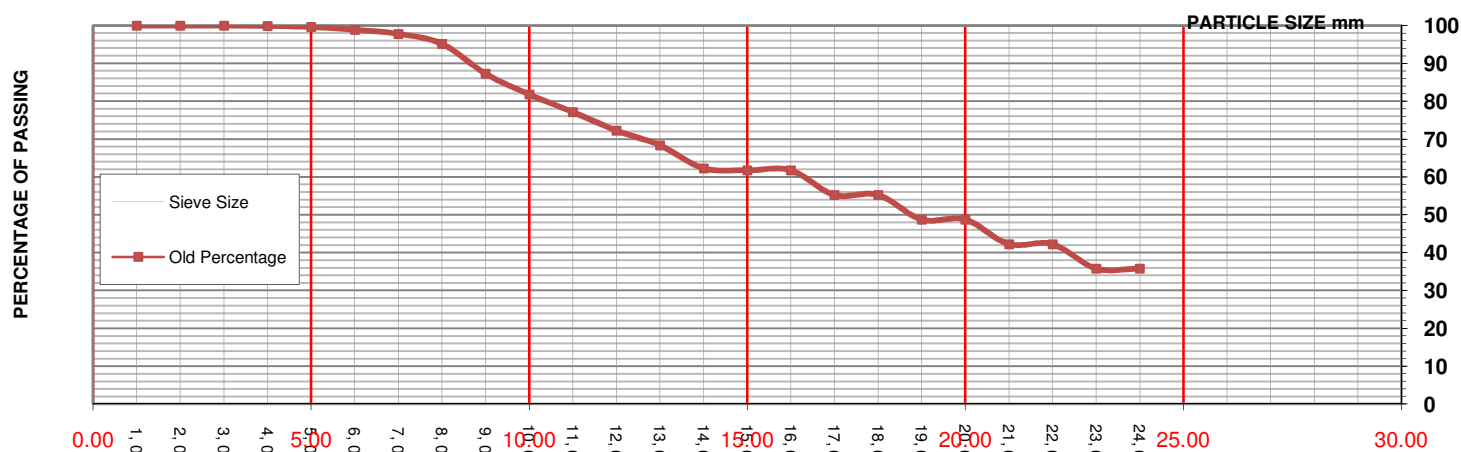
## Laboratory Test Certificate

### Determination of Combined Particle Size distribution and Sedimentation according to BS 7755-5.4: 1998 and ISO 11277: 1998

Client name:	J&P AVAX S.A.	Date of test:	22/10/2014	Certificate no:	TCR269
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	28/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	SED011
				Tested by:	LS

Sample Information:		Test Information:	
Sample ref N°:	141004 - BH G3	Initial mass of sample as received:	625 g
Sampling location:	BH G3	Mass of dry sample before washing:	387.9 g
Sample description:	Sample 4	Mass of dry sample after washing:	295.3 g
Date of sampling:	04/10/2014	Moisture content:	61.12 %
		Silt content:	62.25 %
		Mass of sample for grading:	387.9 g

Particle size distribution			Particle size distribution sedimentation by hydrometer					
Sieve size mm	Retained %	Passing %	Hydrometer No:				Particle diameter d <sub>p</sub> mm	Percentage (P) by Mass from Sample %
			Meniscus correction:	z <sub>m</sub>	0.3			
20.00	0.00	100.00	Reading in dispersant:	d <sub>0</sub> '	1.5			
14.00	0.00	100.00	Dry mass of sample:	m <sub>t</sub> g	24.79			
10.00	0.00	100.00	Particle density:	ρ <sub>s</sub> Mg/m <sup>3</sup>	2.636		0.0659	61.75
6.30	0.13	99.87	Viscosity of water:	η mPa s	0.9021		0.0559	61.75
5.00	0.23	99.64			0.9132		0.0399	55.25
3.35	0.77	98.87			0.9243		0.0282	55.25
2.00	1.09	97.77					0.0202	48.75
1.18	2.61	95.17					0.0104	48.75
0.600	7.92	87.24	Pretreatment				0.0053	42.25
0.425	5.47	81.77	Pretreated with:				0.0037	42.25
0.300	4.61	77.15	Initial dry mass of sample:	m <sub>0</sub> g	84.47		0.0027	35.75
0.212	4.89	72.27	Dry mass:	m <sub>p</sub> g	81.93		0.0002	35.75
0.150	3.90	68.37	Preatreatment loss:		g	2.54		
0.063	6.13	62.25						



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
 Jessica Farrugia Manager	 Chris Magro Laboratory Manager

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Filename: J2094\_Soil\_TCR269\_SED011.xlsx



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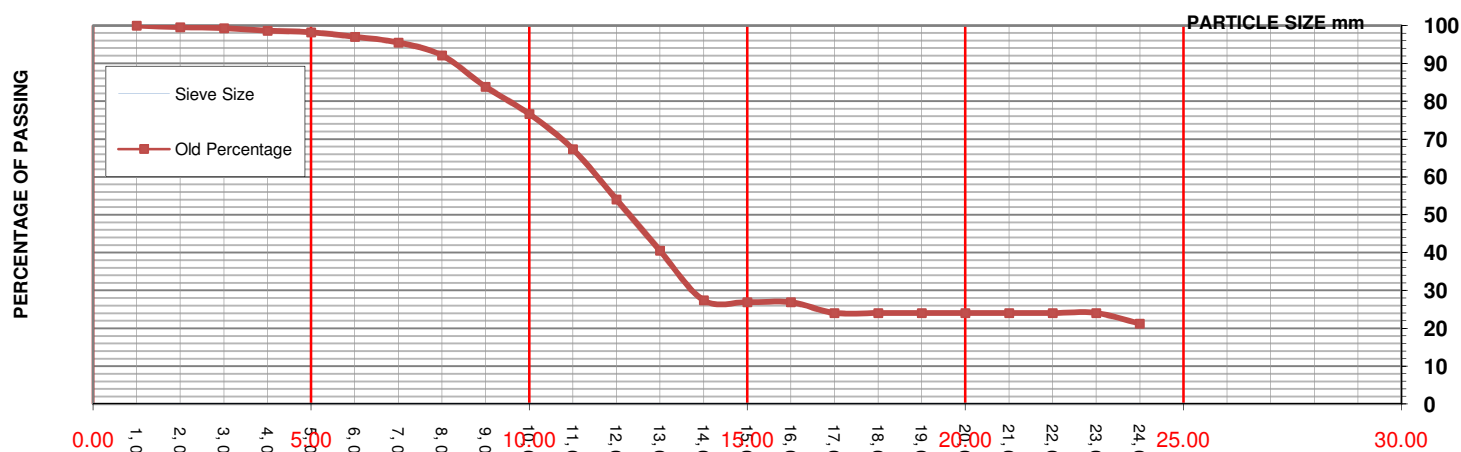
## Laboratory Test Certificate

### Determination of Combined Particle Size distribution and Sedimentation according to BS 7755-5.4: 1998 and ISO 11277: 1998

Client name:	J&P AVAX S.A.	Date of test:	27/10/2014	Certificate no:	TCR339
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	28/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	SED022
				Tested by:	LS

Sample Information:		Test Information:	
Sample ref N°:	141004 - BH G3	Initial mass of sample as received:	599.7 g
Sampling location:	BH G3	Mass of dry sample before washing:	414.8 g
Sample description:	Sample 5	Mass of dry sample after washing:	301.1 g
Date of sampling:	10/04/2014	Moisture content:	44.58 %
		Silt content:	27.39 %
		Mass of sample for grading:	414.8 g

Particle size distribution			Particle size distribution sedimentation by hydrometer				
Sieve size	Retained	Passing	Hydrometer No:		Percentage (P) by		
mm	%	%	Meniscus correction:	$z_m$	<b>0.3</b>	Particle diameter $d_p$	Mass from Sample
20.00	<b>0.00</b>	<b>100.00</b>	Reading in dispersant:	$d_o'$	<b>1.5</b>	mm	%
14.00	<b>0.49</b>	<b>99.51</b>	Dry mass of sample:	$m_t$ g	<b>57</b>		
10.00	<b>0.22</b>	<b>99.29</b>	Particle density:	$\rho_s$ Mg/m <sup>3</sup>	<b>2.630</b>	<b>0.0673</b>	<b>26.89</b>
6.30	<b>0.71</b>	<b>98.58</b>	Viscosity of water:	$\eta$ mPa s	<b>0.9465</b>	<b>0.0573</b>	<b>26.89</b>
5.00	<b>0.44</b>	<b>98.14</b>			<b>0.9354</b>	<b>0.0410</b>	<b>24.06</b>
3.35	<b>1.12</b>	<b>97.02</b>				<b>0.0290</b>	<b>24.06</b>
2.00	<b>1.56</b>	<b>95.46</b>				<b>0.0205</b>	<b>24.06</b>
1.18	<b>3.39</b>	<b>92.07</b>				<b>0.0106</b>	<b>24.06</b>
0.600	<b>8.28</b>	<b>83.79</b>	Pretreatment			<b>0.0043</b>	<b>24.06</b>
0.425	<b>7.20</b>	<b>76.59</b>	Preatreated with:			<b>0.0032</b>	<b>24.06</b>
0.300	<b>9.25</b>	<b>67.33</b>	Initial dry mass of sample:	$m_o$ g	<b>88.09</b>	<b>0.0026</b>	<b>24.06</b>
0.212	<b>13.28</b>	<b>54.05</b>	Dry mass:	$m_p$ g	<b>84.44</b>	<b>0.0002</b>	<b>21.23</b>
0.150	<b>13.50</b>	<b>40.55</b>	Preatreatment loss:	g	<b>3.65</b>		
0.063	<b>13.16</b>	<b>27.39</b>					



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
 Jessica Farrugia Manager	 Chris Magro Laboratory Manager

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Filename: J2094\_Soil\_TCR339\_SED022.xlsx

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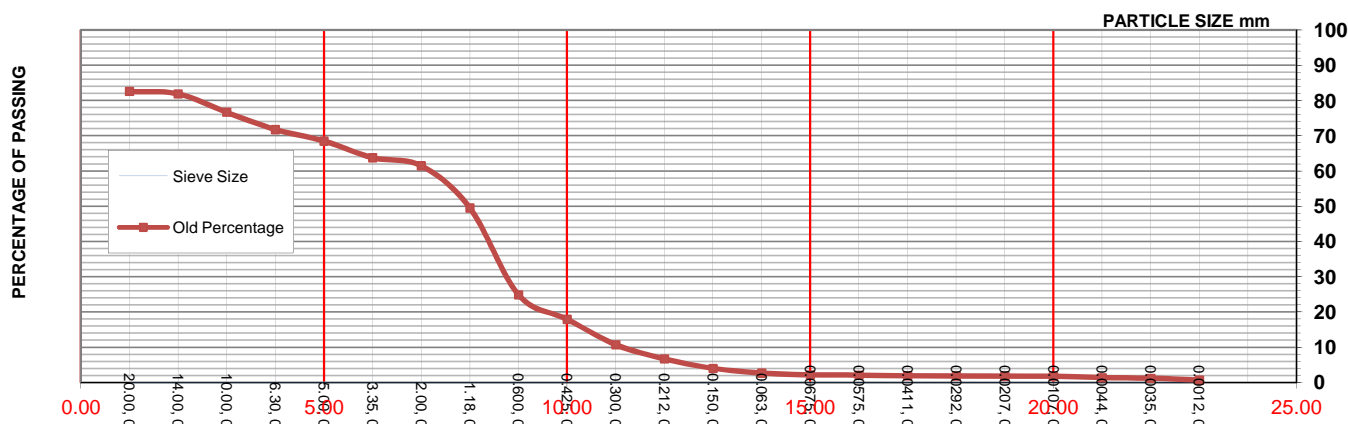
## Laboratory Test Certificate

### Determination of Combined Particle Size distribution and Sedimentation according to BS 7755-5.4: 1998 and ISO 11277: 1998

Client name:	J&P AVAX S.A.	Date of test:	11/10/2014	Certificate no:	TCR270
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	SED012
				Tested by:	LS

Sample Information:		Test Information:	
Sample ref N°:	140929 - BH G4	Initial mass of sample as received:	640.1 g
Sampling location:	BH G4	Mass of dry sample before washing:	524.4 g
Sample description:	Sample 1	Mass of dry sample after washing:	510.1 g
Date of sampling:	29/09/2014	Moisture content:	22.06 %
		Silt content:	2.68 %
		Mass of sample for grading:	524.4 g

Particle size distribution			Particle size distribution sedimentation by hydrometer			
Sieve size mm	Retained %	Passing %	Hydrometer No:			
20.00	17.42	82.58	Meniscus correction:	Z <sub>m</sub>	0.3	
14.00	0.70	81.88	Reading in despersant:	d <sub>0</sub> '	1	
10.00	5.20	76.68	Dry mass of sample:	m <sub>t</sub> g	950	
6.30	4.91	71.77	Particle density:	ρ <sub>s</sub> Mg/m <sup>3</sup>	2.514	
5.00	3.26	68.51	Viscosity of water:	η mPa s	0.9243	
3.35	4.74	63.77			0.9132	
2.00	2.28	61.49			0.9243	
1.18	11.95	49.54				
0.600	24.66	24.88	Pretreatment			
0.425	6.94	17.94	Preatreated with:			
0.300	7.19	10.76	Initial dry mass of sample:	m <sub>0</sub> g	143.16	
0.212	4.04	6.72	Dry mass:	m <sub>p</sub> g	140.05	
0.150	2.71	4.00	Preatreatment loss:	g	3.11	
0.063	1.32	2.68				



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
Jessica Farrugia Manager	Chris Magro Manager
Quality	Laboratory

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Filename: J2094\_Soil\_TCR270\_SED012.xlsx

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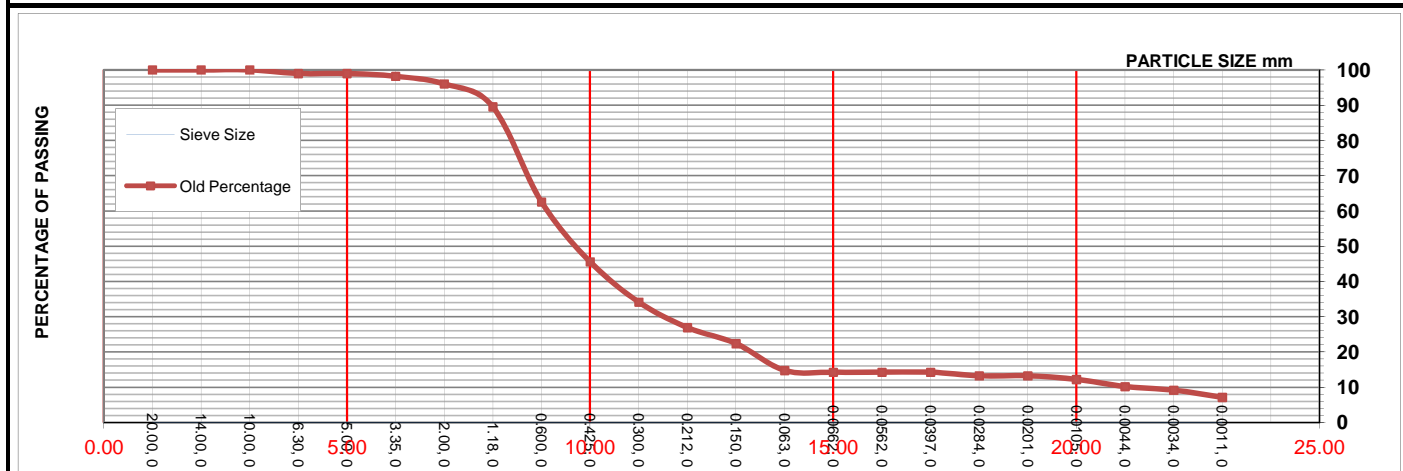
## Laboratory Test Certificate

### Determination of Combined Particle Size distribution and Sedimentation according to BS 7755-5.4: 1998 and ISO 11277: 1998

Client name:	J&P AVAX S.A.	Date of test:	11/10/2014	Certificate no:	TCR271
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	SED013
				Tested by:	LS

Sample Information:		Test Information:	
Sample ref N°:	140929 - BH G4	Initial mass of sample as received:	621.0 g
Sampling location:	BH G4	Mass of dry sample before washing:	428.5 g
Sample description:	Sample 3	Mass of dry sample after washing:	365.2 g
Date of sampling:	29/09/2014	Moisture content:	44.92 %
		Silt content:	14.76 %
		Mass of sample for grading:	428.5 g

Particle size distribution			Particle size distribution sedimentation by hydrometer			
Sieve size mm	Retained %	Passing %	Hydrometer No:			
20.00	0.00	100.00	Meniscus correction:	$Z_m$	0.3	
14.00	0.00	100.00	Reading in despersant:	$d_o'$	1	
10.00	0.00	100.00	Dry mass of sample:	$m_t$ g	163	
6.30	1.01	98.99	Particle density:	$\rho_s$ Mg/m <sup>3</sup>	2.514	
5.00	0.00	98.99	Viscosity of water:	$\eta$ mPa s	0.9243	
3.35	0.80	98.19			0.9132	
2.00	2.14	96.05			0.9243	
1.18	6.52	89.53				
0.600	26.98	62.56	Pretreatment			
0.425	16.96	45.60	Pretreated with:			
0.300	11.43	34.17	Initial dry mass of sample:	$m_o$ g	143.48	
0.212	7.24	26.92	Dry mass:	$m_p$ g	139.35	
0.150	4.54	22.38	Pretreatment loss:	g	4.13	
0.063	7.62	14.76				



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
Jessica Farrugia Manager	Chris Magro Manager
Quality	Laboratory

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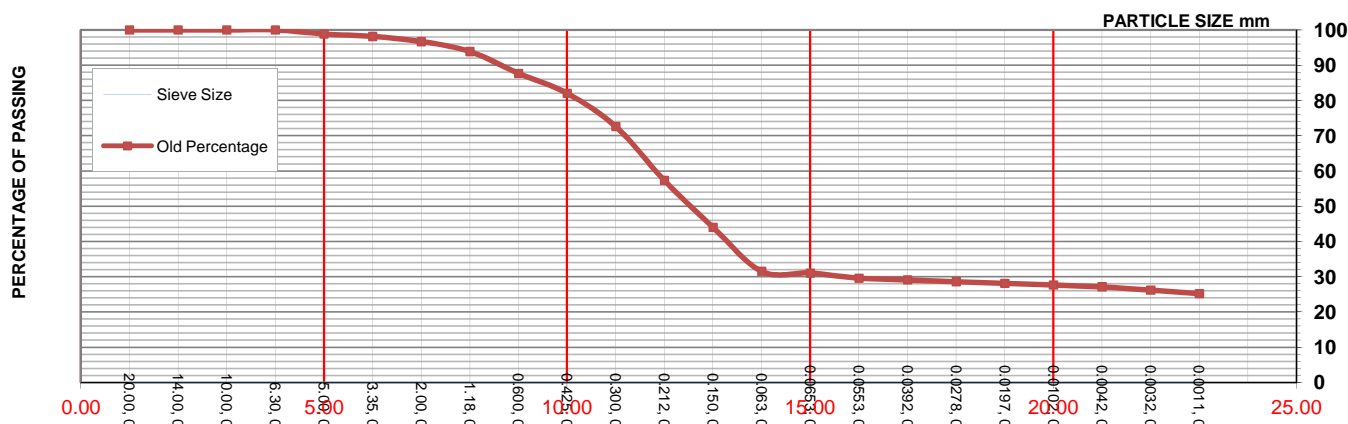
## Laboratory Test Certificate

### Determination of Combined Particle Size distribution and Sedimentation according to BS 7755-5.4: 1998 and ISO 11277: 1998

Client name:	J&P AVAX S.A.	Date of test:	11/10/2014	Certificate no:	TCR272
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	SED014
				Tested by:	LS

Sample Information:		Test Information:	
Sample ref N°:	140929 - BH G4	Initial mass of sample as received:	621.8 g
Sampling location:	BH G4	Mass of dry sample before washing:	429.5 g
Sample description:	Sample 5	Mass of dry sample after washing:	293.9 g
Date of sampling:	29/09/2014	Moisture content:	44.77 %
		Silt content:	31.57 %
		Mass of sample for grading:	429.5 g

Particle size distribution			Particle size distribution sedimentation by hydrometer				
Sieve size	Retained	Passing	Hydrometer No:		Percentage (P) by		
mm	%	%	Meniscus correction:	$z_m$	0.3	Particle diameter $d_p$	Mass from Sample
20.00	0.00	100.00	Reading in despersant:	$d_o'$	1	mm	%
14.00	0.00	100.00	Dry mass of sample:	$m_t$	85.5		
10.00	0.00	100.00	Particle density:	$\rho_s$	Mg/m <sup>3</sup>	0.0653	31.07
6.30	0.00	100.00	Viscosity of water:	$\eta$	mPa s	0.0553	29.62
5.00	1.13	98.87			0.9132	0.0392	29.13
3.35	0.71	98.16			0.9243	0.0278	28.65
2.00	1.46	96.70				0.0197	28.16
1.18	2.80	93.90				0.0102	27.68
0.600	6.19	87.71	Pretreatment			0.0042	27.19
0.425	5.67	82.03	Preatreated with:			0.0032	26.22
0.300	9.40	72.64	Initial dry mass of sample:	$m_o$	g	0.0011	25.25
0.212	15.28	57.36	Dry mass:	$m_p$	g		
0.150	13.30	44.05	Preatreatment loss:		g	5.87	
0.063	12.48	31.57					



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
Jessica Farrugia Manager	Chris Magro Manager
Quality	Laboratory

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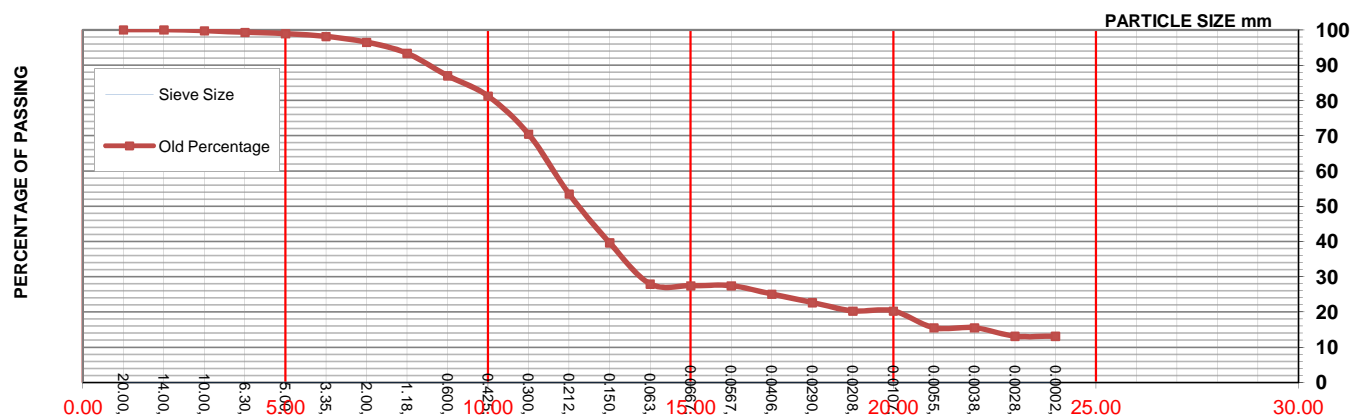
## Laboratory Test Certificate

### Determination of Combined Particle Size distribution and Sedimentation according to BS 7755-5.4: 1998 and ISO 11277: 1998

Client name:	J&P AVAX S.A.	Date of test:	08/10/2014	Certificate no:	TCR273
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	SED015
				Tested by:	LS

Sample Information:		Test Information:	
Sample ref N°:	140929 - BH G4	Initial mass of sample as received:	398.5 g
Sampling location:	BH G4	Mass of dry sample before washing:	289.0 g
Sample description:	Sample 6	Mass of dry sample after washing:	208.3 g
Date of sampling:	29/09/2014	Moisture content:	37.89 %
		Silt content:	27.94 %
		Mass of sample for grading:	289.0 g

Particle size distribution			Particle size distribution sedimentation by hydrometer			
Sieve size mm	Retained %	Passing %	Hydrometer No:			Percentage (P) by Mass from Sample %
20.00	0.00	100.00	Meniscus correction:	Z <sub>m</sub>	0.3	
14.00	0.00	100.00	Reading in despersant:	d <sub>0</sub> '	3.5	
10.00	0.24	99.76	Dry mass of sample:	m <sub>t</sub> g	70.15	
6.30	0.45	99.30	Particle density:	ρ <sub>s</sub> Mg/m <sup>3</sup>	2.484	0.0667
5.00	0.38	98.92	Viscosity of water:	η mPa s	0.9243	0.0567
3.35	0.77	98.15			0.9132	0.0406
2.00	1.68	96.47			0.9243	0.0290
1.18	3.11	93.36				0.0208
0.600	6.36	87.01	Pretreatment			0.0107
0.425	5.76	81.24	Pretreated with:			0.0055
0.300	10.79	70.45	Initial dry mass of sample:	m <sub>0</sub> g	136.5	0.0038
0.212	16.98	53.47	Dry mass:	m <sub>p</sub> g	130.63	0.0028
0.150	13.83	39.64	Pretreatment loss:	g	5.87	0.0002
0.063	11.70	27.94				13.12



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
Jessica Farrugia Manager	Chris Magro Manager
Quality	Laboratory

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Registration No.: C32227  
Directors: Alfred Xerri  
Filename: J2094\_Soil\_TCR273\_SED015.xlsx

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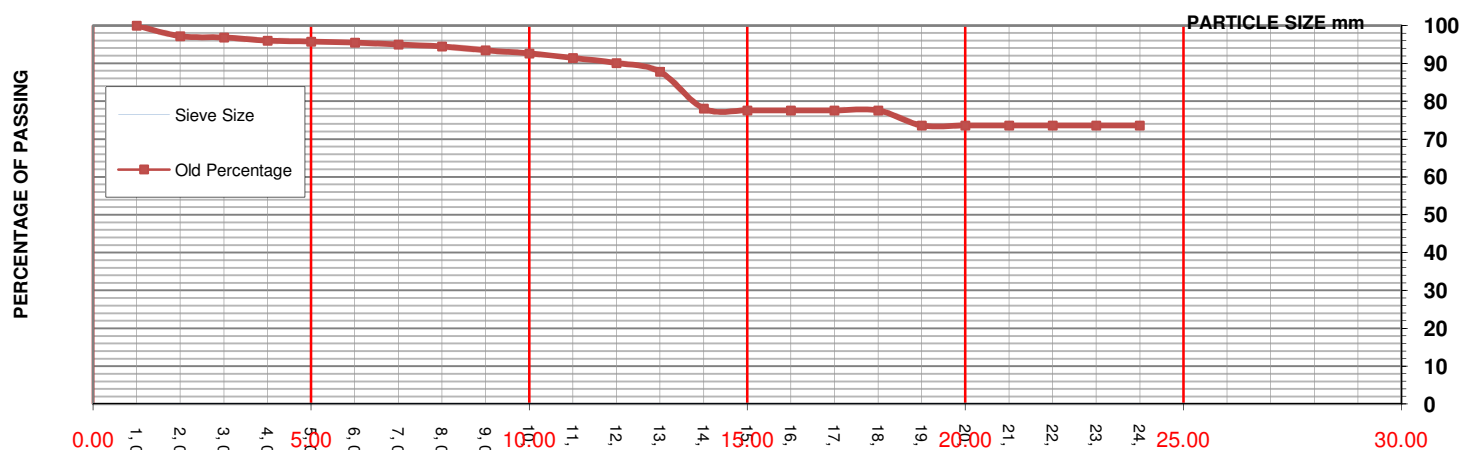
## Laboratory Test Certificate

### Determination of Combined Particle Size distribution and Sedimentation according to BS 7755-5.4: 1998 and ISO 11277: 1998

Client name:	J&P AVAX S.A.	Date of test:	27/10/2014	Certificate no:	TCR340
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	28/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	SED023
				Tested by:	LS

Sample Information:		Test Information:	
Sample ref N°:	141003 - BH G5	Initial mass of sample as received:	654.1 g
Sampling location:	BH G5	Mass of dry sample before washing:	512 g
Sample description:	Sample 4	Mass of dry sample after washing:	112.2 g
Date of sampling:	10/03/2014	Moisture content:	27.75 %
		Silt content:	78.02 %
		Mass of sample for grading:	512 g

Particle size distribution			Particle size distribution sedimentation by hydrometer				
Sieve size	Retained	Passing	Hydrometer No:		Percentage (P) by		
mm	%	%	Meniscus correction:	$z_m$	<b>0.3</b>	Particle diameter $d_p$	Mass from Sample
20.00	<b>0.00</b>	<b>100.00</b>	Reading in dispersant:	$d_o'$	<b>1.5</b>	mm	%
14.00	<b>2.80</b>	<b>97.20</b>	Dry mass of sample:	$m_t$ g	<b>42.55</b>		
10.00	<b>0.37</b>	<b>96.82</b>	Particle density:	$\rho_s$ Mg/m <sup>3</sup>	<b>2.446</b>	<b>0.0642</b>	<b>77.52</b>
6.30	<b>0.80</b>	<b>96.02</b>	Viscosity of water:	$\eta$ mPa s	<b>0.9576</b>	<b>0.0542</b>	<b>77.52</b>
5.00	<b>0.25</b>	<b>95.77</b>			<b>0.9465</b>	<b>0.0383</b>	<b>77.52</b>
3.35	<b>0.33</b>	<b>95.44</b>				<b>0.0271</b>	<b>77.52</b>
2.00	<b>0.47</b>	<b>94.97</b>				<b>0.0194</b>	<b>73.55</b>
1.18	<b>0.52</b>	<b>94.45</b>				<b>0.0081</b>	<b>73.55</b>
0.600	<b>1.03</b>	<b>93.42</b>	Pretreatment			<b>0.0041</b>	<b>73.55</b>
0.425	<b>0.80</b>	<b>92.62</b>	Preatreated with:			<b>0.0032</b>	<b>73.55</b>
0.300	<b>1.18</b>	<b>91.44</b>	Initial dry mass of sample:	$m_o$ g	<b>72.72</b>	<b>0.0025</b>	<b>73.55</b>
0.212	<b>1.38</b>	<b>90.06</b>	Dry mass:	$m_p$ g	<b>67.8</b>	<b>0.0002</b>	<b>73.55</b>
0.150	<b>2.27</b>	<b>87.79</b>	Preatreatment loss:	g	<b>4.92</b>		
0.063	<b>9.77</b>	<b>78.02</b>					



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
 Jessica Farrugia Manager	 Chris Magro Manager
Quality	Laboratory

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Filename: J2094\_Soil\_TCR340\_SED023.xlsx



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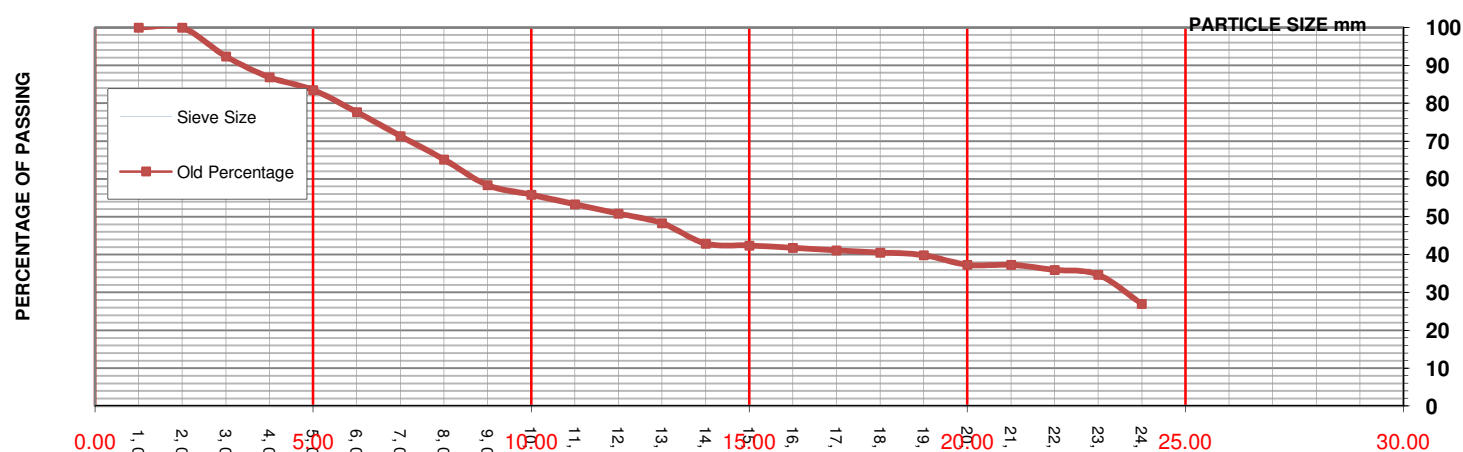
## Laboratory Test Certificate

### Determination of Combined Particle Size distribution and Sedimentation according to BS 7755-5.4: 1998 and ISO 11277: 1998



Client name:	J&P AVAX S.A.	Date of test:	27/10/2014	Certificate no:	TCR341
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	28/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	SED024
				Tested by:	LS

Sample Information:		Test Information:	
Sample ref N°:	141003 - BH G5	Initial mass of sample as received:	703.8 g
Sampling location:	BH G5	Mass of dry sample before washing:	570.5 g
Sample description:	Sample 5	Mass of dry sample after washing:	325.7 g
Date of sampling:	10/03/2014	Moisture content:	23.37 %
		Silt content:	42.91 %
		Mass of sample for grading:	570.5 g

Particle size distribution			Particle size distribution sedimentation by hydrometer				
Sieve size mm	Retained %	Passing %	Hydrometer No: Meniscus correction: Reading in dispersant: Dry mass of sample: Particle density: Viscosity of water:	$z_m$ $d_o'$ $m_t$ g $\rho_s$ Mg/m <sup>3</sup> $\eta$ mPa s	<b>0.3</b> <b>1.5</b> <b>64</b> <b>2.550</b> <b>0.9576</b> <b>0.9465</b>	Particle diameter $d_p$ mm	Percentage (P) by Mass from Sample %
20.00	<b>0.00</b>	<b>100.00</b>					
14.00	<b>0.00</b>	<b>100.00</b>					
10.00	<b>7.68</b>	<b>92.32</b>				<b>0.0646</b>	<b>42.41</b>
6.30	<b>5.48</b>	<b>86.84</b>				<b>0.0546</b>	<b>41.77</b>
5.00	<b>3.33</b>	<b>83.51</b>				<b>0.0388</b>	<b>41.13</b>
3.35	<b>5.87</b>	<b>77.64</b>				<b>0.0275</b>	<b>40.49</b>
2.00	<b>6.36</b>	<b>71.28</b>				<b>0.0195</b>	<b>39.84</b>
1.18	<b>6.18</b>	<b>65.10</b>				<b>0.0091</b>	<b>37.27</b>
0.600	<b>6.71</b>	<b>58.38</b>	Pretreatment			<b>0.0046</b>	<b>37.27</b>
0.425	<b>2.57</b>	<b>55.81</b>	Preatreated with:			<b>0.0032</b>	<b>35.99</b>
0.300	<b>2.52</b>	<b>53.29</b>	Initial dry mass of sample:	$m_o$ g	<b>72.72</b>	<b>0.0026</b>	<b>34.70</b>
0.212	<b>2.41</b>	<b>50.88</b>	Dry mass:	$m_p$ g	<b>67.8</b>	<b>0.0002</b>	<b>26.99</b>
0.150	<b>2.61</b>	<b>48.27</b>	Preatreatment loss:	g	<b>4.92</b>		
0.063	<b>5.36</b>	<b>42.91</b>					



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
	
Jessica Farrugia Manager	Chris Magro Laboratory Manager

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Registration No.: C32227  
Directors: Alfred Xerri  
Filename: J2094\_Soil\_TCR341\_SED024.xlsx



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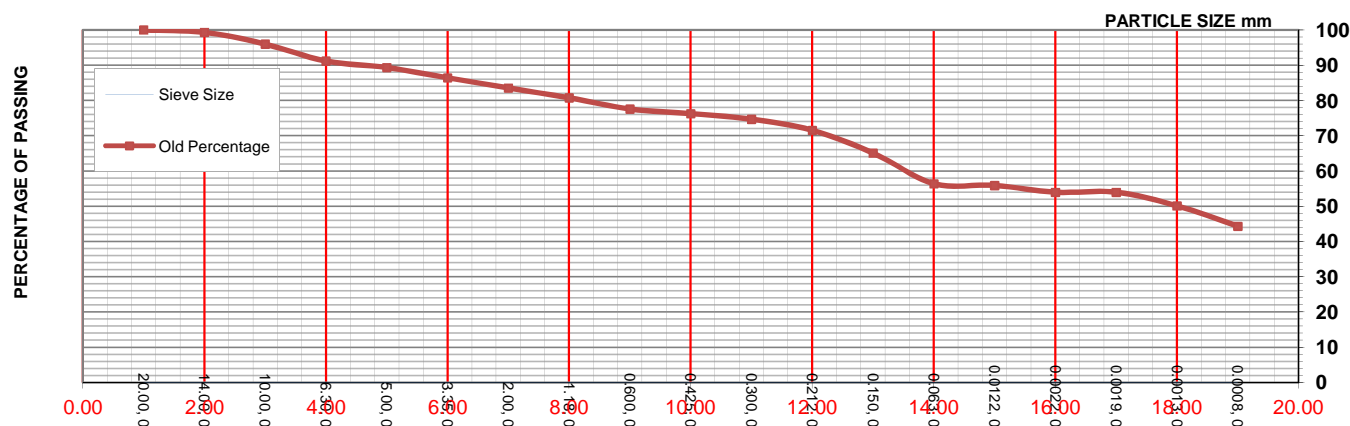
## Laboratory Test Certificate

### Determination of Combined Particle Size distribution and Sedimentation according to BS 7755-5.4: 1998 and ISO 11277: 1998



Client name:	J&P AVAX S.A.	Date of test:	10/10/2014	Certificate no:	TCR274
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	SED016
				Tested by:	LS

Sample Information:		Test Information:	
Sample ref N°:	140927 - BH G6	Initial mass of sample as received:	723.3 g
Sampling location:	BH G6	Mass of dry sample before washing:	569.8 g
Sample description:	Sample 5	Mass of dry sample after washing:	249.0 g
Date of sampling:	27/09/2014	Moisture content:	26.94 %
		Silt content:	56.37 %
		Mass of sample for grading:	569.8 g

Particle size distribution			Particle size distribution sedimentation by hydrometer			
Sieve size mm	Retained %	Passing %	Hydrometer No:			
20.00	0.00	100.00	Meniscus correction:	Z <sub>m</sub>	0.3	
14.00	0.68	99.32	Reading in despersant:	d <sub>0</sub> '	1	
10.00	3.34	95.98	Dry mass of sample:	m <sub>t</sub> g	89.3	
6.30	4.82	91.16	Particle density:	ρ <sub>s</sub> Mg/m <sup>3</sup>	2.388	0.0122
5.00	1.82	89.34	Viscosity of water:	η mPa s	0.9132	0.0022
3.35	2.93	86.42				0.0019
2.00	2.89	83.52				0.0013
1.18	2.78	80.74				0.0008
0.600	3.18	77.56	Pretreatment			
0.425	1.30	76.26	Pretreated with:			
0.300	1.59	74.67	Initial dry mass of sample:	m <sub>0</sub> g	157.09	
0.212	3.14	71.53	Dry mass:	m <sub>p</sub> g	129.76	
0.150	6.46	65.07	Pretreatment loss:	g	27.33	
0.063	8.69	56.37				



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
	
Jessica Farrugia Manager	Chris Magro Manager
Quality	Laboratory

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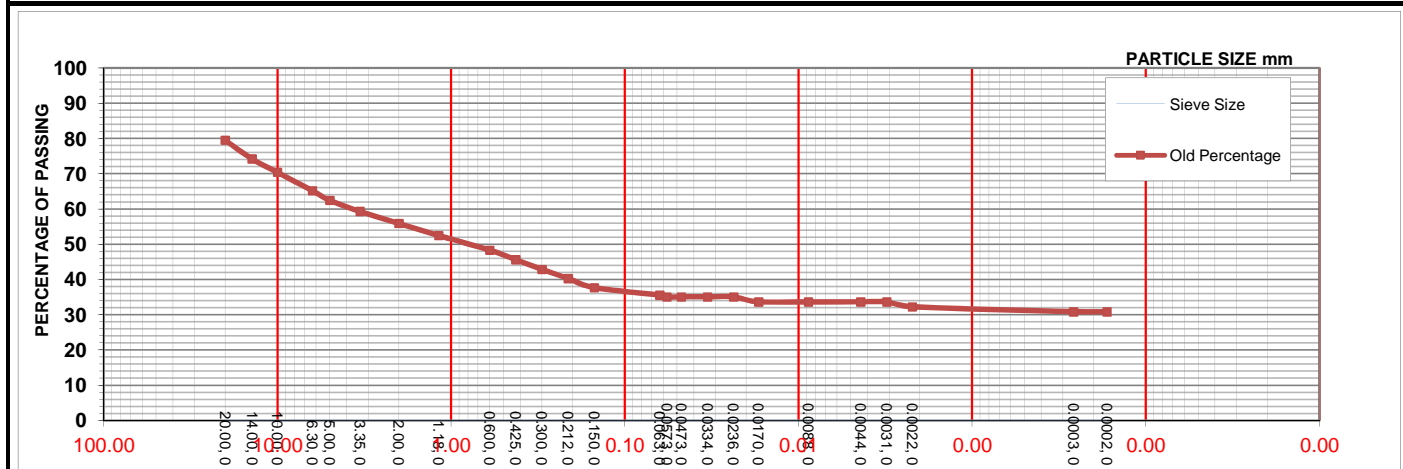
## Laboratory Test Certificate

### Determination of Combined Particle Size distribution and Sedimentation according to BS 7755-5.4: 1998 and ISO 11277: 1998

Client name:	J&P AVAX S.A.	Date of test:	10/10/2014	Certificate no:	TCR275
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	SED017
				Tested by:	LS

Sample Information:		Test Information:	
Sample ref N°:	140927 - BH G6	Initial mass of sample as received:	623.3 g
Sampling location:	BH G6	Mass of dry sample before washing:	564.4 g
Sample description:	Sample 14/29m	Mass of dry sample after washing:	363.3 g
Date of sampling:	27/09/2014	Moisture content:	10.44 %
		Silt content:	35.54 %
		Mass of sample for grading:	564.4 g

Particle size distribution			Particle size distribution sedimentation by hydrometer			
Sieve size mm	Retained %	Passing %	Hydrometer No:			
20.00	20.49	79.51	Meniscus correction:	Z <sub>m</sub>	0.3	
14.00	5.30	74.21	Reading in despersant:	d <sub>0</sub> '	1	
10.00	3.79	70.42	Dry mass of sample:	m <sub>t</sub> g	116.5	
6.30	5.22	65.20	Particle density:	ρ <sub>s</sub> Mg/m <sup>3</sup>	2.580	
5.00	2.75	62.45	Viscosity of water:	η mPa s	0.9243	
3.35	3.12	59.33			0.9132	
2.00	3.43	55.90			0.9132	
1.18	3.42	52.48				
0.600	4.16	48.32	Pretreatment			
0.425	2.71	45.61	Pretreated with:			
0.300	2.75	42.87	Initial dry mass of sample:	m <sub>0</sub> g	145.44	
0.212	2.59	40.27	Dry mass:	m <sub>p</sub> g	120	
0.150	2.59	37.68	Pretreatment loss:	g	25.44	
0.063	2.14	35.54				



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
Jessica Farrugia Manager	Chris Magro Manager
Quality	Laboratory

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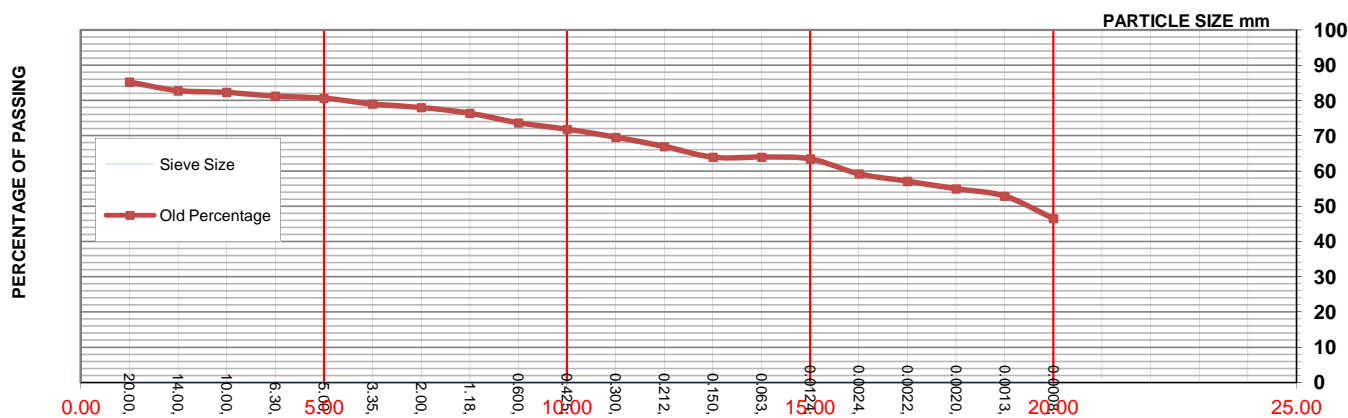
## Laboratory Test Certificate

### Determination of Combined Particle Size distribution and Sedimentation according to BS 7755-5.4: 1998 and ISO 11277: 1998

Client name:	J&P AVAX S.A.	Date of test:	10/10/2014	Certificate no:	TCR276
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	SED018
				Tested by:	LS

Sample Information:		Test Information:	
Sample ref N°:	140927 - BH G6	Initial mass of sample as received:	403.7 g
Sampling location:	BH G6	Mass of dry sample before washing:	316.1 g
Sample description:	Sample 8/23m	Mass of dry sample after washing:	114.0 g
Date of sampling:	27/09/2014	Moisture content:	27.71 %
		Silt content:	63.90 %
		Mass of sample for grading:	316.1 g

Particle size distribution			Particle size distribution sedimentation by hydrometer			
Sieve size mm	Retained %	Passing %	Hydrometer No:			
20.00	14.82	85.18	Meniscus correction:	Z <sub>m</sub>	0.3	
14.00	2.42	82.76	Reading in despersant:	d <sub>0</sub> '	1	
10.00	0.48	82.27	Dry mass of sample:	m <sub>t</sub> g	81	
6.30	1.06	81.21	Particle density:	ρ <sub>s</sub> Mg/m <sup>3</sup>	2.405	0.0124
5.00	0.61	80.59	Viscosity of water:	η mPa s	0.9132	0.0024
3.35	1.65	78.95			0.9243	0.0022
2.00	0.97	77.98			0.9132	0.0020
1.18	1.65	76.34				0.0013
0.600	2.71	73.63				0.0008
0.425	1.81	71.82	Pretreatment			
0.300	2.29	69.53	Pretreated with:			
0.212	2.61	66.91	Initial dry mass of sample:	m <sub>0</sub> g	134.76	
0.150	3.03	63.88	Dry mass:	m <sub>p</sub> g	108.85	
0.063	-0.02	63.90	Pretreatment loss:	g	25.91	



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
Jessica Farrugia Manager	Chris Magro Manager
Quality	Laboratory

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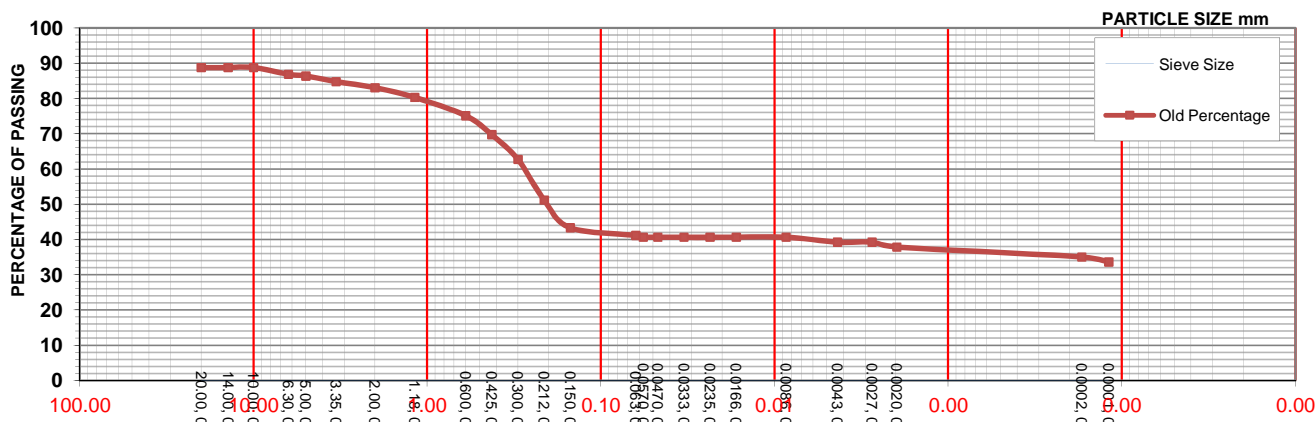
## Laboratory Test Certificate

### Determination of Combined Particle Size distribution and Sedimentation according to BS 7755-5.4: 1998 and ISO 11277: 1998

Client name:	J&P AVAX S.A.	Date of test:	10/10/2014	Certificate no:	TCR277
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	SED019
				Tested by:	LS

Sample Information:		Test Information:	
Sample ref N°:	140926 - BH G7	Initial mass of sample as received:	521.5 g
Sampling location:	BH G7	Mass of dry sample before washing:	375.0 g
Sample description:	Sample 11/24.4m	Mass of dry sample after washing:	220.5 g
Date of sampling:	26/09/2014	Moisture content:	39.07 %
		Silt content:	41.17 %
		Mass of sample for grading:	375.0 g

Particle size distribution			Particle size distribution sedimentation by hydrometer			
Sieve size mm	Retained %	Passing %	Hydrometer No:			Percentage (P) by Mass from Sample %
20.00	11.21	88.79	Meniscus correction:	Z <sub>m</sub>	0.3	
14.00	0.00	88.79	Reading in despersant:	d <sub>0</sub> '	1	
10.00	0.00	88.79	Dry mass of sample:	m <sub>t</sub> g	122.5	
6.30	1.92	86.87	Particle density:	ρ <sub>s</sub> Mg/m <sup>3</sup>	2.393	0.0570
5.00	0.49	86.38	Viscosity of water:	η mPa s	0.9243	0.0470
3.35	1.59	84.79			0.9132	0.0333
2.00	1.73	83.07			0.9021	0.0235
1.18	2.75	80.31				0.0166
0.600	5.18	75.13	Pretreatment			0.0086
0.425	5.37	69.76	Pretreated with:			0.0043
0.300	7.04	62.72	Initial dry mass of sample:	m <sub>0</sub> g	161.21	0.0027
0.212	11.52	51.19	Dry mass:	m <sub>p</sub> g	156.49	0.0020
0.150	7.85	43.34	Pretreatment loss:	g	4.72	0.0002
0.063	2.17	41.17				0.0001



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
Jessica Farrugia Manager	Chris Magro Manager
Quality	Laboratory

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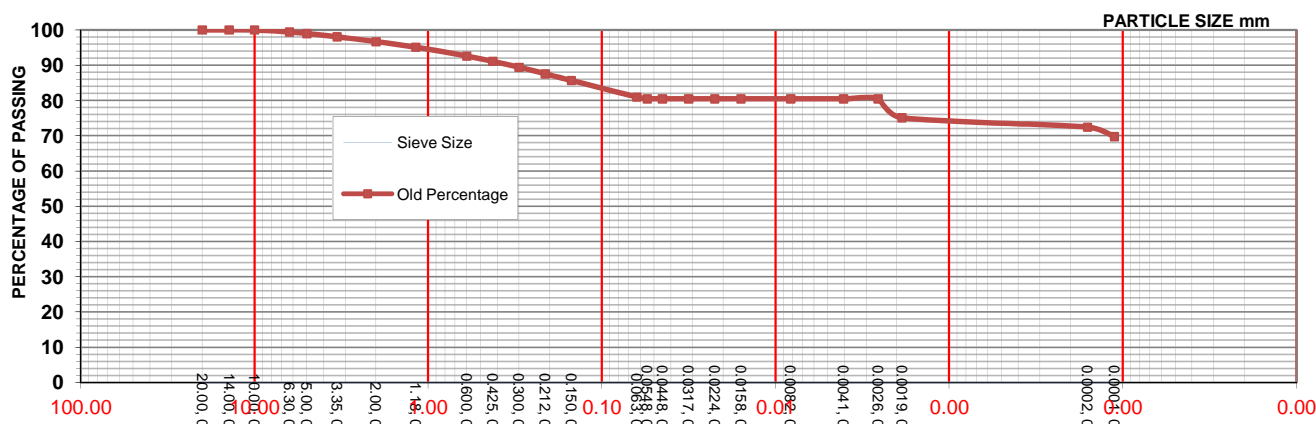
## Laboratory Test Certificate

### Determination of Combined Particle Size distribution and Sedimentation according to BS 7755-5.4: 1998 and ISO 11277: 1998

Client name:	J&P AVAX S.A.	Date of test:	10/10/2014	Certificate no:	TCR278
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	SED020
				Tested by:	LS

Sample Information:		Test Information:	
Sample ref N°:	140926 - BH G7	Initial mass of sample as received:	409.9 g
Sampling location:	BH G7	Mass of dry sample before washing:	307.4 g
Sample description:	Sample 10/23.4m	Mass of dry sample after washing:	58.6 g
Date of sampling:	26/09/2014	Moisture content:	33.34 %
		Silt content:	80.98 %
		Mass of sample for grading:	307.4 g

Particle size distribution			Particle size distribution sedimentation by hydrometer			
Sieve size mm	Retained %	Passing %	Hydrometer No:			Percentage (P) by Mass from Sample %
20.00	0.00	100.00	Meniscus correction:	Z <sub>m</sub>	0.3	
14.00	0.00	100.00	Reading in despersant:	d <sub>0</sub> '	1	
10.00	0.00	100.00	Dry mass of sample:	m <sub>t</sub> g	62.5	
6.30	0.56	99.44	Particle density:	ρ <sub>s</sub> Mg/m <sup>3</sup>	2.478	0.0548
5.00	0.46	98.98	Viscosity of water:	η mPa s	0.9243	0.0448
3.35	0.92	98.07			0.9132	0.0317
2.00	1.38	96.69			0.9021	0.0224
1.18	1.57	95.12				0.0158
0.600	2.52	92.60	Pretreatment			0.0082
0.425	1.47	91.13	Pretreated with:			0.0041
0.300	1.70	89.42	Initial dry mass of sample:	m <sub>0</sub> g	144.35	0.0026
0.212	1.87	87.56	Dry mass:	m <sub>p</sub> g	122.13	0.0019
0.150	1.87	85.69	Pretreatment loss:	g	22.22	0.0002
0.063	4.71	80.98				0.0001



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
Jessica Farrugia Manager	Chris Magro Manager
Quality	Laboratory

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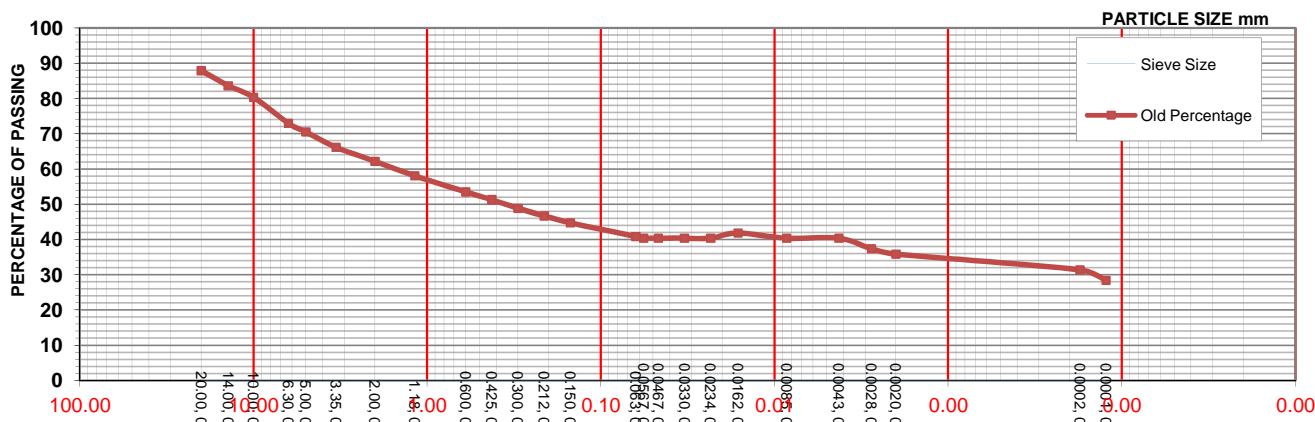
## Laboratory Test Certificate

### Determination of Combined Particle Size distribution and Sedimentation according to BS 7755-5.4: 1998 and ISO 11277: 1998

Client name:	J&P AVAX S.A.	Date of test:	10/10/2014	Certificate no:	TCR279
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	SED021
				Tested by:	LS

Sample Information:		Test Information:	
Sample ref N°:	140926 - BH G7	Initial mass of sample as received:	726.1 g
Sampling location:	BH G7	Mass of dry sample before washing:	603.3 g
Sample description:	Sample 17/30.4m	Mass of dry sample after washing:	357.1 g
Date of sampling:	26/09/2014	Moisture content:	20.35 %
		Silt content:	40.88 %
		Mass of sample for grading:	603.3 g

Particle size distribution			Particle size distribution sedimentation by hydrometer			
Sieve size mm	Retained %	Passing %	Hydrometer No:			
20.00	12.10	87.90	Meniscus correction:	$Z_m$	0.3	
14.00	4.27	83.62	Reading in despersant:	$d_o'$	1	
10.00	3.27	80.35	Dry mass of sample:	$m_t$ g	111.5	
6.30	7.40	72.96	Particle density:	$\rho_s$ Mg/m <sup>3</sup>	2.498	
5.00	2.44	70.52	Viscosity of water:	$\eta$ mPa s	0.9132	
3.35	4.36	66.16			0.9021	
2.00	3.97	62.19			0.9132	
1.18	4.11	58.08				
0.600	4.56	53.52	Pretreatment			
0.425	2.20	51.32	Pretreated with:			
0.300	2.48	48.84	Initial dry mass of sample:	$m_o$ g	167.51	
0.212	2.14	46.71	Dry mass:	$m_p$ g	155.07	
0.150	1.97	44.73	Pretreatment loss:	g	12.44	
0.063	3.85	40.88				



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
Jessica Farrugia Manager	Chris Magro Manager
Quality	Laboratory

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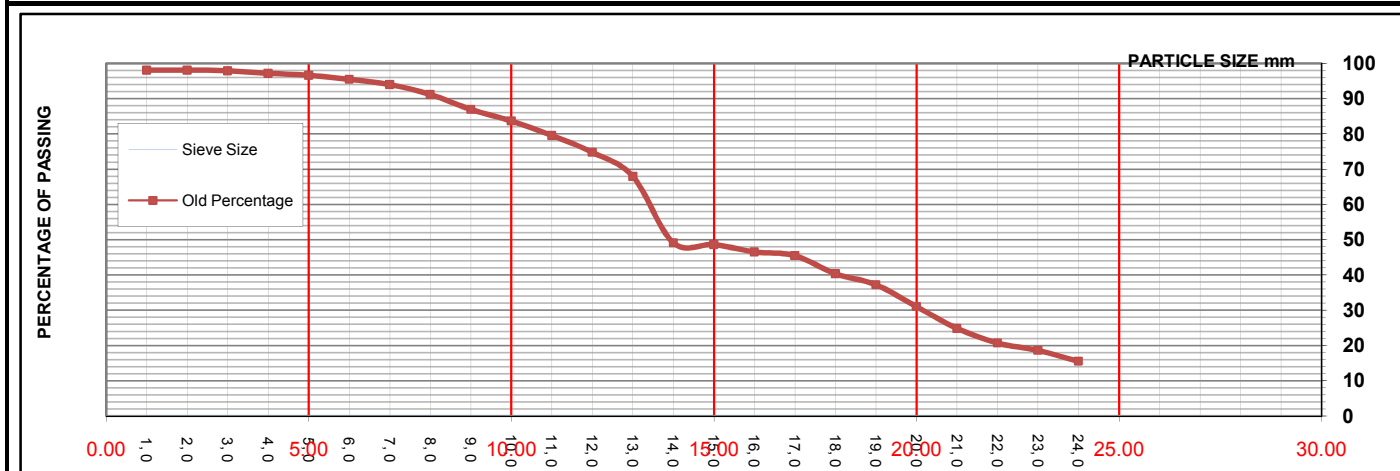
## Laboratory Test Certificate

### Determination of Combined Particle Size distribution and Sedimentation according to BS 7755-5.4: 1998 and ISO 11277: 1998

Client name:	J&P AVAX S.A.	Date of test:	10/8/2014	Certificate no:	TCR112
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	10/9/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	SED001
				Tested by:	LS

Sample Information:		Test Information:	
Sample ref N°:	140916 - BH G8	Initial mass of sample as received:	896.4 g
Sampling location:	BH G8	Mass of dry sample before washing:	585.4 g
Sample description:	8.9 - 9.9m	Mass of dry sample after washing:	295.3 g
Date of sampling:	9/16/2014	Moisture content:	53.13 %
		Silt content:	49.08 %
		Mass of sample for grading:	585.4 g

Particle size distribution			Particle size distribution sedimentation by hydrometer		
Sieve size mm	Retained %	Passing %	Hydrometer No:		
20.00	1.95	98.05	Meniscus correction:	$Z_m$	0.3
14.00	0.00	98.05	Reading in despersant:	$d_{0'}$	3.5
10.00	0.15	97.90	Dry mass of sample:	$m_t$ g	79.32
6.30	0.75	97.15	Particle density:	$\rho_s$ Mg/m <sup>3</sup>	2.563
5.00	0.55	96.60	Viscosity of water:	$\eta$ mPa s	0.9243
3.35	1.10	95.50			0.9354
2.00	1.51	93.99			0.9132
1.18	2.85	91.15			
0.600	4.22	86.93	Pretreatment		
0.425	3.23	83.70	Pretreated with:		
0.300	4.15	79.55	Initial dry mass of sample:	$m_0$ g	116.7
0.212	4.77	74.78	Dry mass:	$m_p$ g	79.32
0.150	6.85	67.93	Pretreatment loss:	g	37.38
0.063	18.85	49.08			



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
Jessica Farrugia Manager	Chris Magro Manager
Quality	Laboratory

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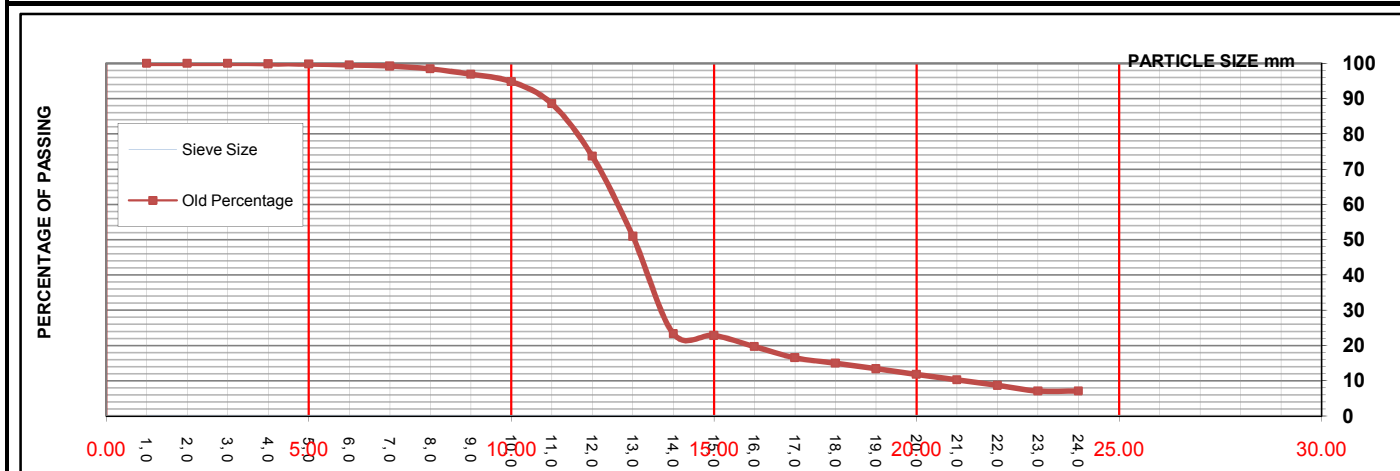
## Laboratory Test Certificate

### Determination of Combined Particle Size distribution and Sedimentation according to BS 7755-5.4: 1998 and ISO 11277: 1998



Client name:	J&P AVAX S.A.	Date of test:	10/7/2014	Certificate no:	TCR113
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	10/9/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	SED002
				Tested by:	LS

Sample Information:		Test Information:	
Sample ref N°:	140916 - BH G8	Initial mass of sample as received:	826.5 g
Sampling location:	BH G8	Mass of dry sample before washing:	595.9 g
Sample description:	10.9 - 11.5m	Mass of dry sample after washing:	453.4 g
Date of sampling:	9/16/2014	Moisture content:	38.70 %
		Silt content:	23.32 %
		Mass of sample for grading:	595.9 g

Particle size distribution			Particle size distribution sedimentation by hydrometer		
Sieve size mm	Retained %	Passing %	Hydrometer No:	Z <sub>m</sub>	0.3
			Meniscus correction:	d <sub>0'</sub>	3.5
20.00	0.00	100.00	Reading in despersant:	m <sub>t</sub> g	102.59
14.00	0.00	100.00	Dry mass of sample:	ρ <sub>s</sub> Mg/m <sup>3</sup>	2.627
10.00	0.00	100.00	Particle density:	η mPa s	0.9243
6.30	0.14	99.86	Viscosity of water:		0.9132
5.00	0.03	99.83			
3.35	0.28	99.55			
2.00	0.33	99.22			
1.18	0.76	98.46			
0.600	1.55	96.91	Pretreatment		
0.425	2.09	94.82	Pretreated with:		
0.300	6.23	88.59	Initial dry mass of sample:	m <sub>0</sub> g	127.61
0.212	14.91	73.68	Dry mass:	m <sub>p</sub> g	102.59
0.150	22.70	50.98	Pretreatment loss:	g	25.02
0.063	27.65	23.32			



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
	
Jessica Farrugia Manager	Chris Magro Manager
Quality	Laboratory

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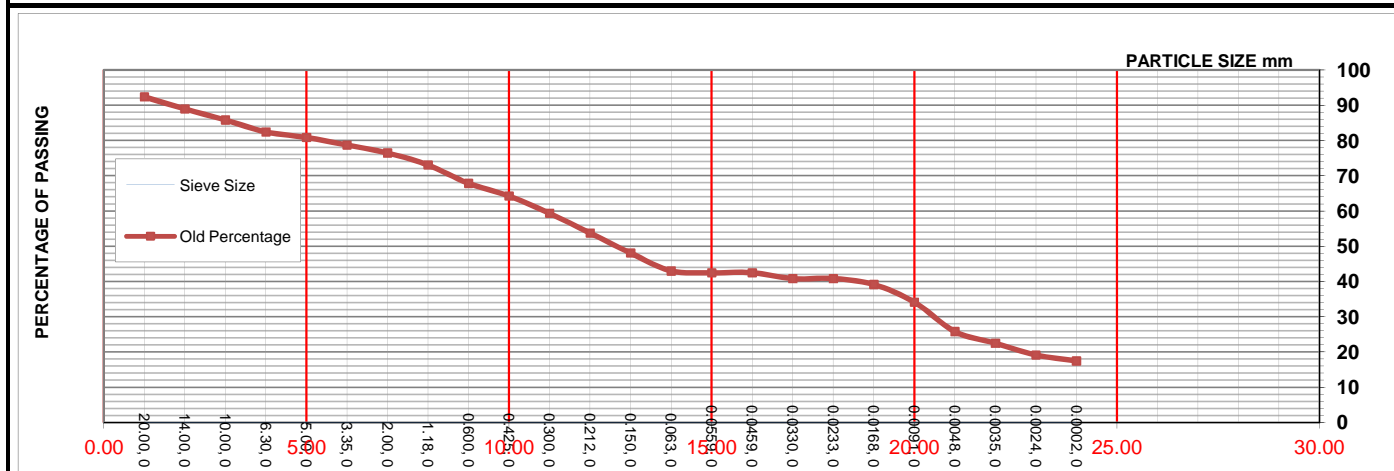
## Laboratory Test Certificate

### Determination of Combined Particle Size distribution and Sedimentation according to BS 7755-5.4: 1998 and ISO 11277: 1998

Client name:	J&P AVAX S.A.	Date of test:	07/10/2014	Certificate no:	TCR114
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	09/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	SED003
				Tested by:	LS

Sample Information:		Test Information:	
Sample ref N°:	140915 - BH G9	Initial mass of sample as received:	504.7 g
Sampling location:	BH G9	Mass of dry sample before washing:	385.7 g
Sample description:	8.65 - 9.1m	Mass of dry sample after washing:	219.8 g
Date of sampling:	15/09/2014	Moisture content:	30.85 %
		Silt content:	43.00 %
		Mass of sample for grading:	385.7 g

Particle size distribution			Particle size distribution sedimentation by hydrometer			
Sieve size mm	Retained %	Passing %	Hydrometer No:			
20.00	7.61	92.39	Meniscus correction:	Z <sub>m</sub>	0.3	
14.00	3.42	88.97	Reading in despersant:	d <sub>0</sub> '	3.5	
10.00	3.13	85.83	Dry mass of sample:	m <sub>t</sub> g	99.5	
6.30	3.40	82.44	Particle density:	ρ <sub>s</sub> Mg/m <sup>3</sup>	2.519	
5.00	1.57	80.87	Viscosity of water:	η mPa s	0.9243	
3.35	2.15	78.72			0.9132	
2.00	2.26	76.46				
1.18	3.40	73.06				
0.600	5.20	67.86	Pretreatment			
0.425	3.58	64.28	Preatreated with:			
0.300	4.91	59.36	Initial dry mass of sample:	m <sub>0</sub> g	103.78	
0.212	5.60	53.76	Dry mass:	m <sub>p</sub> g	80.34	
0.150	5.65	48.11	Preatreatment loss:	g	23.44	
0.063	5.11	43.00				



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
Jessica Farrugia Manager	Chris Magro Manager
Quality	Laboratory

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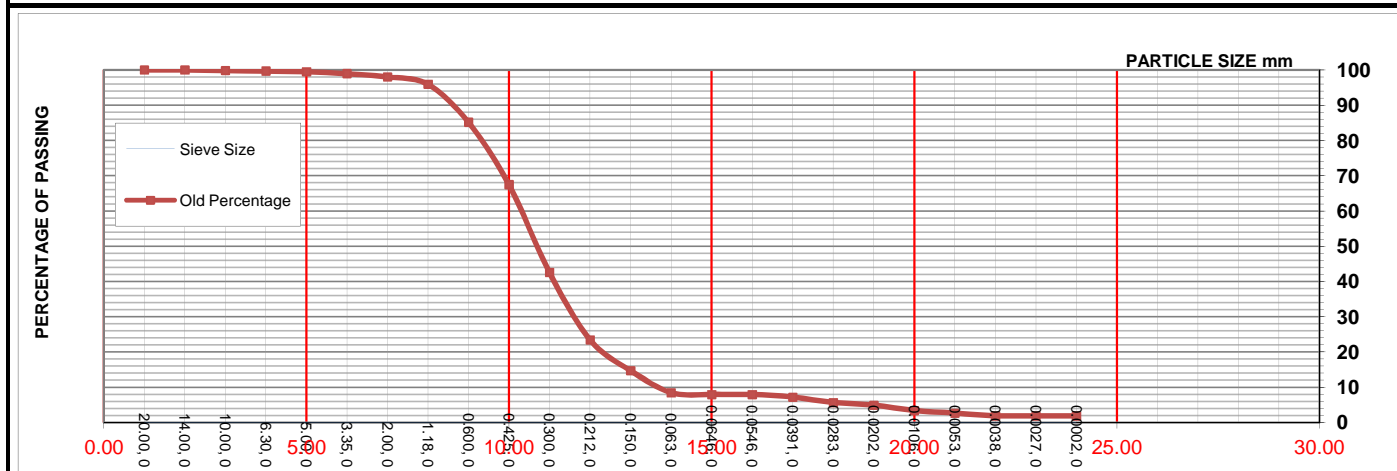
## Laboratory Test Certificate

### Determination of Combined Particle Size distribution and Sedimentation according to BS 7755-5.4: 1998 and ISO 11277: 1998

Client name:	J&P AVAX S.A.	Date of test:	07/10/2014	Certificate no:	TCR115
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	09/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	SED004
				Tested by:	LS

Sample Information:		Test Information:	
Sample ref N°:	140915 - BH G9	Initial mass of sample as received:	602.1 g
Sampling location:	BH G9	Mass of dry sample before washing:	440.6 g
Sample description:	3 - 4m	Mass of dry sample after washing:	403.5 g
Date of sampling:	15/09/2014	Moisture content:	36.65 %
		Silt content:	8.44 %
		Mass of sample for grading:	440.6 g

Particle size distribution			Particle size distribution sedimentation by hydrometer			
Sieve size mm	Retained %	Passing %	Hydrometer No:			
20.00	0.00	100.00	Meniscus correction:	Z <sub>m</sub>	0.3	
14.00	0.00	100.00	Reading in despersant:	d <sub>0</sub> '	3.5	
10.00	0.16	99.84	Dry mass of sample:	m <sub>t</sub> g	213	
6.30	0.14	99.70	Particle density:	ρ <sub>s</sub> Mg/m <sup>3</sup>	2.638	
5.00	0.21	99.50	Viscosity of water:	η mPa s	0.9243	
3.35	0.53	98.97			0.9132	
2.00	0.94	98.04				
1.18	2.08	95.96				
0.600	10.77	85.18	Pretreatment			
0.425	17.69	67.49	Pretreated with:			
0.300	24.93	42.57	Initial dry mass of sample:	m <sub>0</sub> g	106.23	
0.212	19.11	23.46	Dry mass:	m <sub>p</sub> g	85.5	
0.150	8.74	14.72	Pretreatment loss:	g	20.73	
0.063	6.28	8.44				



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
Jessica Farrugia Manager	Chris Magro Manager
Quality	Laboratory

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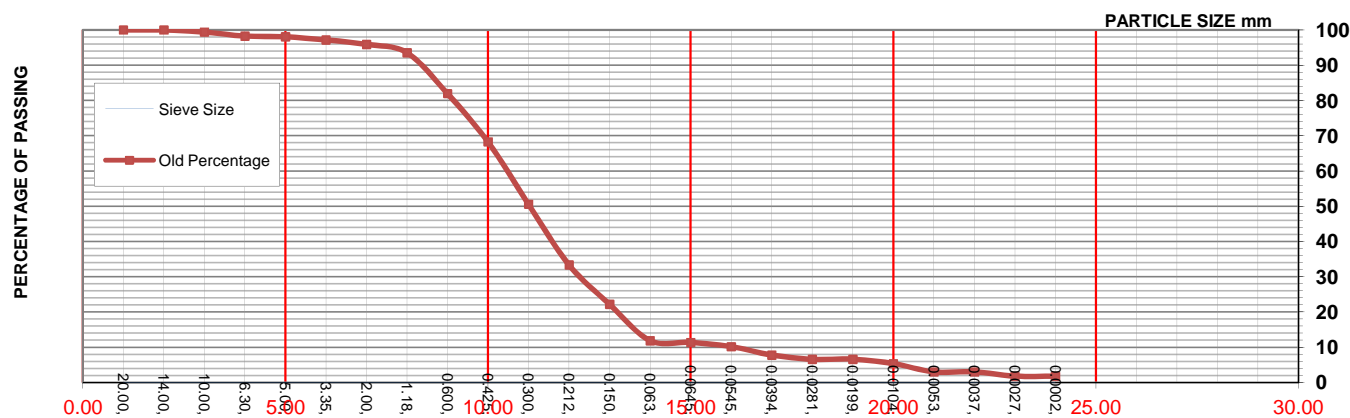
## Laboratory Test Certificate

### Determination of Combined Particle Size distribution and Sedimentation according to BS 7755-5.4: 1998 and ISO 11277: 1998

Client name:	J&P AVAX S.A.	Date of test:	08/10/2014	Certificate no:	TCR116
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Project:	Onshore & Offshore Geotechnical Investigation	Date of certificate:	09/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Job no:	J2094
Client Tel No:	306972019434			Test reference no:	SED005
				Tested by:	LS

Sample Information:		Test Information:	
Sample ref N°:	140912 - BH G10	Initial mass of sample as received:	612.2 g
Sampling location:	BH G10	Mass of dry sample before washing:	450.8 g
Sample description:	3 - 4m	Mass of dry sample after washing:	397.2 g
Date of sampling:	12/09/2014	Moisture content:	35.80 %
		Silt content:	11.88 %
		Mass of sample for grading:	450.8 g

Particle size distribution			Particle size distribution sedimentation by hydrometer			
Sieve size mm	Retained %	Passing %	Hydrometer No:			Percentage (P) by Mass from Sample %
20.00	0.00	100.00	Meniscus correction:	Z <sub>m</sub>	0.3	
14.00	0.00	100.00	Reading in despersant:	d <sub>0</sub> '	3.5	
10.00	0.58	99.42	Dry mass of sample:	m <sub>t</sub> g	132	
6.30	1.15	98.27	Particle density:	ρ <sub>s</sub> Mg/m <sup>3</sup>	2.722	0.0645
5.00	0.20	98.07	Viscosity of water:	η mPa s	0.9243	0.0545
3.35	0.90	97.17			0.9354	0.0394
2.00	1.26	95.91			0.9243	0.0281
1.18	2.36	93.55				0.0199
0.600	11.57	81.98	Pretreatment			0.0104
0.425	13.69	68.29	Pretreated with:			0.0053
0.300	17.71	50.58	Initial dry mass of sample:	m <sub>0</sub> g	111.56	0.0037
0.212	17.22	33.36	Dry mass:	m <sub>p</sub> g	88.5	0.0027
0.150	11.17	22.19	Pretreatment loss:	g	23.06	0.0002
0.063	10.32	11.88				1.80



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
Jessica Farrugia Manager	Chris Magro Manager
Quality	Laboratory

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## Laboratory Test Certificate

### Determination of the Mass loss on ignition according to BS 1377-3

Client Name:	J&P AVAX S.A.	Date of sampling:	29/09/2014	Certificate no:	TCR144
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Date of testing:	10/10/2014	Date of certificate:	13-Oct-2014
Attn:	Giorgos Rousopoulos	Project:	Onshore and Offshore Geotechnical Investigation	Tested by:	MH
Client Tel No:	306972019434	Location/Town:	Delimara	Job no:	J2094
				Test reference no:	LOI004

#### Sample Details

Sampling Location: BH G4 Sample 2

Sampling report No: n/a

Type of material: Soil

#### Test details

	1	2
Weight of Sample (M <sub>1</sub> )	197.6	197.6
Passing 2mm (M <sub>2</sub> )	155.1	155.1
Weight of crucible (M <sub>C</sub> )	111.785	88.851
Weight of crucible and sample before ignition (M <sub>3</sub> )	116.856	94.346
Weight of crucible and sample after ignition (M <sub>4</sub> )	116.714	94.194
Weight of sample after ignition	4.929	5.343
Weight of sample lost during ignition	192.671	192.257
LOI (%)	2.8	2.77
LOI Average	2.79	
Comments:		
Nil		
Deviation/s from standard:		
Nil		

Prepared By:

Approved By:



Jessica Farrugia  
Quality Manager



Chris Magro  
Laboratory Manager

## TEST CERTIFICATE

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## Laboratory Test Certificate

### Determination of the Mass loss on ignition according to BS 1377-3

Client Name:	J&P AVAX S.A.	Date of sampling:	27/09/2014	Certificate no:	TCR145
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Date of testing:	10/10/2014	Date of certificate:	13-Oct-2014
Attn:	Giorgos Rousopoulos	Project:	Onshore and Offshore Geotechnical Investigation	Tested by:	MH
Client Tel No:	306972019434	Location/Town:	Delimara	Job no:	J2094
				Test reference no:	LOI005

#### Sample Details

Sampling Location: BH G6 Sample 1

Sampling report No: n/a

Type of material: Soil

#### Test details

	1	2
Weight of Sample ( $M_1$ )	25.8	25.8
Passing 2mm ( $M_2$ )	24.2	24.2
Weight of crucible ( $M_C$ )	64.593	140.842
Weight of crucible and sample before ignition ( $M_3$ )	70.161	146.553
Weight of crucible and sample after ignition ( $M_4$ )	69.213	145.582
Weight of sample after ignition	4.62	4.74
Weight of sample lost during ignition	21.18	21.06
LOI (%)	17.03	17.00
LOI Average	17.02	
Comments:	Nil	
Deviation/s from standard:	Nil	

Prepared By:

Approved By:



Jessica Farrugia  
Quality Manager



Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of the Mass loss on ignition according to BS 1377-3

Client Name: J&P AVAX S.A.	Date of sampling: 26/09/2014	Certificate no: TCR146
Client address: 29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Date of testing: 10/10/2014	Date of certificate: 13-Oct-2014
Attn: Giorgos Rousopoulos	Project: Onshore and Offshore Geotechnical Investigation	Tested by: MH
Client Tel No: 306972019434	Location/Town: Delimara	Job no: J2094
		Test reference no: LOI006

#### Sample Details

Sampling Location: BH G7 Sample 2

Sampling report No: n/a

Type of material: Soil

#### Test details

	1	2
Weight of Sample (M <sub>1</sub> )	61.5	61.5
Passing 2mm (M <sub>2</sub> )	55	55
Weight of crucible (M <sub>C</sub> )	111.784	88.85
Weight of crucible and sample before ignition (M <sub>3</sub> )	118.027	96.023
Weight of crucible and sample after ignition (M <sub>4</sub> )	117.398	95.293
Weight of sample after ignition	5.614	6.443
Weight of sample lost during ignition	55.886	55.057
LOI (%)	10.08	10.18
LOI Average	10.13	
Comments:		
Nil		
Deviation/s from standard:		
Nil		

Prepared By:

Approved By:



Jessica Farrugia  
Quality Manager



Chris Magro  
Laboratory Manager

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**Laboratory Test Certificate**  
**Determination of the Mass loss on ignition according to BS 1377-3**

Client Name: J&P AVAX S.A.	Date of sampling: 9/16/2014	Certificate no: TCR141
Client address: 29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Date of testing: 10/8/2014	Date of certificate: 10-Oct-2014
Attn: Giorgos Rousopoulos	Project: Onshore and Offshore Geotechnical Investigation	Tested by: MH
Client Tel No: 306972019434	Location/Town: Delimara	Job no: J2094
		Test reference no: LOI001

Sample Details

Sampling Location: BH G8 Depth 10.7 - 10.9m

Sampling report No: n/a

Type of material: Soil

Test details

	1	2
Weight of Sample (M <sub>1</sub> )	146.5	146.5
Passing 2mm (M <sub>2</sub> )	133.6	133.6
Weight of crucible (M <sub>C</sub> )	118.549	140.849
Weight of crucible and sample before ignition (M <sub>3</sub> )	123.828	146.308
Weight of crucible and sample after ignition (M <sub>4</sub> )	123.37	145.85
Weight of sample after ignition	4.821	5.001
Weight of sample lost during ignition	141.679	141.499
LOI (%)	8.68	8.39
LOI Average	8.54	
Comments:		
Deviation/s from standard:		
Nil		

Prepared By:

Approved By:



**Jessica Farrugia**  
Quality Manager



**Chris Magro**  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of the Mass loss on ignition according to BS 1377-3

Client Name: J&P AVAX S.A.	Date of sampling:	Certificate no: TCR142
Client address: 29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Date of testing: 08/10/2014	Date of certificate: 10-Oct-2014
Attn: Giorgos Rousopoulos	Project: Onshore and Offshore Geotechnical Investigation	Tested by: MH
Client Tel No: 306972019434	Location/Town: Delimara	Job no: J2094
		Test reference no: LOI002

#### Sample Details

Sampling Location: BH G9 Depth 1m

Sampling report No: n/a

Type of material: Soil

#### Test details

	1	2
Weight of Sample (M <sub>1</sub> )	70.1	70.1
Passing 2mm (M <sub>2</sub> )	68	68
Weight of crucible (M <sub>C</sub> )	111.783	93.893
Weight of crucible and sample before ignition (M <sub>3</sub> )	118.345	100.191
Weight of crucible and sample after ignition (M <sub>4</sub> )	117.857	99.713
Weight of sample after ignition	6.074	5.82
Weight of sample lost during ignition	64.026	64.28
LOI (%)	7.44	7.59
LOI Average	7.52	
Comments:		
Deviation/s from standard:		
Nil		

Prepared By:

Approved By:

  
Jessica Farrugia  
Quality Manager

  
Chris Magro  
Laboratory Manager

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### Determination of the Mass loss on ignition according to BS 1377-3

Client Name: J&P AVAX S.A.	Date of sampling:	Certificate no: TCR143
Client address: 29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Date of testing: 08/10/2014	Date of certificate: 10-Oct-2014
Attn: Giorgos Rousopoulos	Project: Onshore and Offshore Geotechnical Investigation	Tested by: MH
Client Tel No: 306972019434	Location/Town: Delimara	Job no: J2094
		Test reference no: LOI003

#### Sample Details

Sampling Location: BH G10 Depth 8.7 - 9.1m

Sampling report No: n/a

Type of material: Soil


#### Test details

	1	2
Weight of Sample (M <sub>1</sub> )	156	156
Passing 2mm (M <sub>2</sub> )	97.2	97.2
Weight of crucible (M <sub>C</sub> )	64.595	140.844
Weight of crucible and sample before ignition (M <sub>3</sub> )	70.954	147.362
Weight of crucible and sample after ignition (M <sub>4</sub> )	70.621	147.022
Weight of sample after ignition	6.026	6.178
Weight of sample lost during ignition	149.974	149.822
LOI (%)	5.24	5.22
LOI Average	5.23	
Comments:		
Deviation/s from standard:		
Nil		

Prepared By:

Approved By:

  
Jessica Farrugia  
Quality Manager

  
Chris Magro  
Laboratory Manager

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**Laboratory Test Certificate**  
**Determination of Moisture Content of soil to BS1377 Part 2:1990**

Client name: J&P AVAX S.A.	Project: Onshore & Offshore	Certificate Nº: TCR161
Client address: 29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Geotechnical Investigation	Date of certificate: 13/10/2014
Attn: Giorgos Rousopoulos	Location/Town: Delimara	Client/Job Nº: J2094
Client Tel Nº: 306972019434		Test Reference No: MC018
		Tested by: MH, LS
		Date of test: 10/13/2014

<b>Sample Information:</b>						
Sample ref Nº:	140930 - BH G1					
Sampling location:	BH G1					
Sample depth:	Various					
Date of sampling:	30/09/2014					
Type of material:	Soil					

<b>Test Details</b>						
Test No:		1	2	3	4	5
		BH G1 - Sample 3	BH G1 - Sample 4	BH G1 - Sample 6	BH G1 - Sample 7	BH G1 - Sample 11
Mass of Wet Soil + Container (m <sub>2</sub> )	g	572.8	509.1	556.0	574.6	521.5
Mass of Dry Soil + Container (m <sub>3</sub> )	g	457.3	390.4	455.8	469.0	441.0
Mass of Container (m <sub>1</sub> )	g	0	0	0	0	0
Mass of Moisture (m <sub>2</sub> -m <sub>3</sub> )	g	115.5	118.7	100.2	105.6	80.5
Mass of Dry Soil (m <sub>3</sub> -m <sub>1</sub> )	g	457.3	390.4	455.8	469.0	441.0
Moisture content:	%	25.26	30.40	21.98	22.52	18.25
Average moisture content:	%	23.68				

<b>Comments:</b>	
Nil	

<b>Deviation from Standard:</b>	<b>Remarks:</b>
Nil	Nil

**Prepared By:**



Jessica Farrugia  
Quality Manager

**Approved By:**



Chris Magro  
Laboratory Manager

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**Laboratory Test Certificate**  
**Determination of Moisture Content of soil to BS1377 Part 2:1990**

Client name: J&P AVAX S.A.	Project: Onshore & Offshore	Certificate Nº: TCR295
Client address: 29, Maroussiou	Geotechnical	Date of certificate: 20/10/2014
Holandriou Street	Investigation	Client/Job Nº: J2094
151-25 Maroussi Greece	Location/Town: Delimara	Test Reference No: MC023
Attn: Giorgos Rousopoulos		Tested by: MH, LS
Client Tel Nº: 306972019434		Date of test: 20/10/2014

**Sample Information:**  
 Sample ref Nº: 140930 - BH G1  
 Sampling location: BH G1  
 Sample depth: Various  
 Date of sampling: 30/09/2014  
 Type of material: Soil

**Test Details**

Test No:		1 BH G1 - Sample 8	2 BH G1 - Sample 15
Mass of Wet Soil + Container (m <sub>2</sub> )	g	609.8	474.1
Mass of Dry Soil + Container (m <sub>3</sub> )	g	480.0	387.6
Mass of Container (m <sub>1</sub> )	g	0	0
Mass of Moisture (m <sub>2</sub> -m <sub>3</sub> )	g	129.8	86.5
Mass of Dry Soil (m <sub>3</sub> -m <sub>1</sub> )	g	480.0	387.6
Moisture content:	%	27.04	22.32
Average moisture content:	%	24.68	

**Comments:**  

Nil

<b>Deviation from Standard:</b> <p style="text-align: center;">Nil</p>	<b>Remarks:</b> <p style="text-align: center;">Nil</p>
---	---

Prepared By:

Approved By:



Jessica Farrugia  
Quality Manager



Chris Magro  
Laboratory Manager

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### Determination of Moisture Content of soil to BS1377 Part 2:1990

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR168
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	13/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	MC019
				Tested by:	MH, LS
				Date of test:	13/10/2014

**Sample Information:**  
 Sample ref Nº: 141001 - BH G2  
 Sampling location: BH G2  
 Sample depth: Various  
 Date of sampling: 01/10/2014  
 Type of material: Soil

**Test Details**

Test No:		1 BH G2 - Sample 6	2 BH G2 - Sample 7	3 BH G2 - Sample 9	4 BH G2 - Sample 12
Mass of Wet Soil + Container (m <sub>2</sub> )	g	568.7	631.5	704.4	635.6
Mass of Dry Soil + Container (m <sub>3</sub> )	g	336.4	519.7	571.8	513.2
Mass of Container (m <sub>1</sub> )	g	0	0	0	0
Mass of Moisture (m <sub>2</sub> -m <sub>3</sub> )	g	232.3	111.8	132.6	122.4
Mass of Dry Soil (m <sub>3</sub> -m <sub>1</sub> )	g	336.4	519.7	571.8	513.2
Moisture content:	%	69.05	21.51	23.19	23.85
Average moisture content:	%			34.40	

**Comments:**  

Nil

<b>Deviation from Standard:</b> <div style="text-align: center; height: 40px;">Nil</div>	<b>Remarks:</b> <div style="text-align: center; height: 40px;">Nil</div>
---	---

Prepared By:

Approved By:



Jessica Farrugia  
Quality Manager



Chris Magro  
Laboratory Manager

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**Laboratory Test Certificate**  
**Determination of Moisture Content of soil to BS1377 Part 2:1990**

Client name: J&P AVAX S.A.	Project: Onshore & Offshore	Certificate Nº: TCR236
Client address: 29, Maroussiou	Geotechnical	Date of certificate: 17/10/2014
Holandriou Street	Investigation	Client/Job Nº: J2094
151-25 Maroussi Greece	Location/Town: Delimara	Test Reference No: MC021
Attn: Giorgos Rousopoulos		Tested by: MH, LS
Client Tel Nº: 306972019434		Date of test: 17/10/2014

**Sample Information:**  
 Sample ref Nº: 141001 - BH G2  
 Sampling location: BH G2  
 Sample depth: Various  
 Date of sampling: 01/10/2014  
 Type of material: Soil

**Test Details**

Test No:		1 BH G2 - Sample 2	2 BH G2 - Sample 4
Mass of Wet Soil + Container (m <sub>2</sub> )	g	462.8	532.9
Mass of Dry Soil + Container (m <sub>3</sub> )	g	413.1	300.2
Mass of Container (m <sub>1</sub> )	g	0	0
Mass of Moisture (m <sub>2</sub> -m <sub>3</sub> )	g	49.7	305.5
Mass of Dry Soil (m <sub>3</sub> -m <sub>1</sub> )	g	413.1	300.2
Moisture content:	%	12.03	77.51
Average moisture content:	%	44.77	

**Comments:**  

Nil

<b>Deviation from Standard:</b> <p style="text-align: center;">Nil</p>	<b>Remarks:</b> <p style="text-align: center;">Nil</p>
---	---

Prepared By:

Approved By:



Jessica Farrugia  
Quality Manager



Chris Magro  
Laboratory Manager

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**Laboratory Test Certificate**  
**Determination of Moisture Content of soil to BS1377 Part 2:1990**

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR233
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	17/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	MC020
				Tested by:	MH, LS
				Date of test:	17/10/2014

**Sample Information:**  
 Sample ref Nº: 141004 - BH G3  
 Sampling location: BH G3  
 Sample depth: Various  
 Date of sampling: 04/10/2014  
 Type of material: Soil

**Test Details**

Test No:		1 BH G3 - Sample 2	2 BH G3 - Sample 3	3 BH G3 - Sample 4	4 BH G3 - Sample 5
Mass of Wet Soil + Container (m <sub>2</sub> )	g	735.4	868.2	625.0	599.7
Mass of Dry Soil + Container (m <sub>3</sub> )	g	556.6	562.7	387.9	414.8
Mass of Container (m <sub>1</sub> )	g	0	0	0	0
Mass of Moisture (m <sub>2</sub> -m <sub>3</sub> )	g	178.8	305.5	237.1	184.9
Mass of Dry Soil (m <sub>3</sub> -m <sub>1</sub> )	g	556.6	562.7	387.9	414.8
Moisture content:	%	32.12	54.29	61.12	44.58
Average moisture content:	%			48.03	

**Comments:**  

Nil

<b>Deviation from Standard:</b> <div style="text-align: center; height: 40px;">Nil</div>	<b>Remarks:</b> <div style="text-align: center; height: 40px;">Nil</div>
---	---

Prepared By:

Approved By:



Jessica Farrugia  
Quality Manager



Chris Magro  
Laboratory Manager

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**Laboratory Test Certificate**  
**Determination of Moisture Content of soil to BS1377 Part 2:1990**

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR125
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	09/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	MC015
				Tested by:	MH, LS
				Date of test:	09/10/2014

<b>Sample Information:</b>					
Sample ref Nº:	140929 - BH G4				
Sampling location:	BH G4				
Sample depth:	Various				
Date of sampling:	29/09/2014				
Type of material:	Soil				

<b>Test Details</b>					
Test No:		1	2	3	4
		BH G4 - Sample 1	BH G4 - Sample 3	BH G4 - Sample 5	BH G4 - Sample 6
Mass of Wet Soil + Container (m <sub>2</sub> )	g	640.1	621.0	621.8	398.5
Mass of Dry Soil + Container (m <sub>3</sub> )	g	524.4	428.5	429.5	289.0
Mass of Container (m <sub>1</sub> )	g	0	0	0	0
Mass of Moisture (m <sub>2</sub> -m <sub>3</sub> )	g	115.7	192.5	192.3	109.5
Mass of Dry Soil (m <sub>3</sub> -m <sub>1</sub> )	g	524.4	428.5	429.5	289.0
Moisture content:	%	22.06	44.92	44.77	37.89
Average moisture content:	%			37.41	

<b>Comments:</b>	
Nil	

<b>Deviation from Standard:</b>	<b>Remarks:</b>
Nil	Nil

**Prepared By:**



Jessica Farrugia  
Quality Manager

**Approved By:**



Chris Magro  
Laboratory Manager

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**Laboratory Test Certificate**  
**Determination of Moisture Content of soil to BS1377 Part 2:1990**

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR294
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	MC022
				Tested by:	MH, LS
				Date of test:	20/10/2014

**Sample Information:**  
 Sample ref Nº: 141003 - BH G5  
 Sampling location: BH G5  
 Sample depth: Various  
 Date of sampling: 03/10/2014  
 Type of material: Soil

Test No:		1	2	3	4	5
		BH G5 - Sample 2	BH G5 - Sample 4	BH G5 - Sample 5	BH G5 - Sample 11	BH G5 - Sample 13
Mass of Wet Soil + Container (m <sub>2</sub> )	g	796.7	654.1	703.8	666.4	661.3
Mass of Dry Soil + Container (m <sub>3</sub> )	g	604.9	512.0	570.5	569.0	564.2
Mass of Container (m <sub>1</sub> )	g	0	0	0	0	0
Mass of Moisture (m <sub>2</sub> -m <sub>3</sub> )	g	191.8	142.0	133.3	97.4	97.1
Mass of Dry Soil (m <sub>3</sub> -m <sub>1</sub> )	g	604.9	512	570.5	569	564.2
Moisture content:	%	31.71	27.75	23.37	17.12	17.21
Average moisture content:	%	23.43				

**Comments:**  

Nil

<b>Deviation from Standard:</b> <p style="text-align: center;">Nil</p>	<b>Remarks:</b> <p style="text-align: center;">Nil</p>
---	---

Prepared By:

Approved By:



Jessica Farrugia  
Quality Manager



Chris Magro  
Laboratory Manager

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**Laboratory Test Certificate**  
**Determination of Moisture Content of soil to BS1377 Part 2:1990**

Client name: J&P AVAX S.A.	Project: Onshore & Offshore	Certificate Nº: TCR065
Client address: 29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Geotechnical Investigation	Date of certificate: 03/10/2014
Attn: Giorgos Rousopoulos	Location/Town: Delimara	Client/Job Nº: J2094
Client Tel Nº: 306972019434		Test Reference No: MC009
		Tested by: MH, LS
		Date of test: 03/10/2014

<b>Sample Information:</b>					
Sample ref Nº:	140927 - BH G6				
Sampling location:	BH G6				
Sample depth:	Various				
Date of sampling:	27/09/2014				
Type of material:	Soil				

<b>Test Details</b>					
Test No:		1	2	3	4
		BH G6 - 1m	BH G6 - 3m	BH G6 - 5m	BH G6 - 8m
Mass of Wet Soil + Container (m <sub>2</sub> )	g	235.4	359	723.3	403.7
Mass of Dry Soil + Container (m <sub>3</sub> )	g	154.9	292.9	569.8	316.1
Mass of Container (m <sub>1</sub> )	g	0	0	0	0
Mass of Moisture (m <sub>2</sub> -m <sub>3</sub> )	g	80.5	66.1	153.5	87.6
Mass of Dry Soil (m <sub>3</sub> -m <sub>1</sub> )	g	154.9	292.9	569.8	316.1
Moisture content:	%	51.97	22.57	26.94	27.71
Average moisture content:	%	32.30			

<b>Comments:</b>	
Nil	

<b>Deviation from Standard:</b>	<b>Remarks:</b>
Nil	Nil

**Prepared By:**



Jessica Farrugia  
Quality Manager

**Approved By:**



Chris Magro  
Laboratory Manager

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**Laboratory Test Certificate**  
**Determination of Moisture Content of soil to BS1377 Part 2:1990**

Client name: J&P AVAX S.A.	Project: Onshore & Offshore	Certificate Nº: TCR066
Client address: 29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Geotechnical Investigation	Date of certificate: 03/10/2014
Attn: Giorgos Rousopoulos	Location/Town: Delimara	Client/Job Nº: J2094
Client Tel Nº: 306972019434		Test Reference No: MC010
		Tested by: MH, LS
		Date of test: 03/10/2014

<b>Sample Information:</b>					
Sample ref Nº:	140927 - BH G6				
Sampling location:	BH G6				
Sample depth:	Various				
Date of sampling:	27/09/2014				
Type of material:	Soil				

<b>Test Details</b>					
Test No:	1	2	3	4	
	BH G6 - 9m	BH G6 - 12m	BH G6 - 13m	BH G6 - 14m	
Mass of Wet Soil + Container (m <sub>2</sub> )	g	410.5	592.0	595.8	623.3
Mass of Dry Soil + Container (m <sub>3</sub> )	g	347.6	483.1	488.3	564.4
Mass of Container (m <sub>1</sub> )	g	0	0	0	0
Mass of Moisture (m <sub>2</sub> -m <sub>3</sub> )	g	62.9	108.9	107.5	58.9
Mass of Dry Soil (m <sub>3</sub> -m <sub>1</sub> )	g	347.6	483.1	488.3	564.4
Moisture content:	%	18.10	22.54	22.02	10.44
Average moisture content:	%	18.27			

<b>Comments:</b>	
Nil	

<b>Deviation from Standard:</b>	<b>Remarks:</b>
Nil	Nil

**Prepared By:**



Jessica Farrugia  
Quality Manager

**Approved By:**



Chris Magro  
Laboratory Manager

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**Laboratory Test Certificate**  
**Determination of Moisture Content of soil to BS1377 Part 2:1990**

Client name: J&P AVAX S.A.	Project: Onshore & Offshore	Certificate Nº: TCR127
Client address: 29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Geotechnical Investigation	Date of certificate: 09/10/2014
Attn: Giorgos Rousopoulos	Location/Town: Delimara	Client/Job Nº: J2094
Client Tel Nº: 306972019434		Test Reference No: MC016
		Tested by: MH, LS
		Date of test: 09/10/2014

**Sample Information:**  
 Sample ref Nº: 140927 - BH G6  
 Sampling location: BH G6  
 Sample depth: Sample 2  
 Date of sampling: 27/09/2014  
 Type of material: Soil

**Test Details**  
  

Test No:	1	
	BH G6 - Sample 2	

Mass of Wet Soil + Container (m <sub>2</sub> )	g	371.8
Mass of Dry Soil + Container (m <sub>3</sub> )	g	209.2
Mass of Container (m <sub>1</sub> )	g	0
Mass of Moisture (m <sub>2</sub> -m <sub>3</sub> )	g	162.6
Mass of Dry Soil (m <sub>3</sub> -m <sub>1</sub> )	g	209.2

Moisture content:	%	77.72
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Average moisture content:	%	77.72
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**Comments:**  
  

Nil

<b>Deviation from Standard:</b>  <p style="text-align: center;">Nil</p>	<b>Remarks:</b>  <p style="text-align: center;">Nil</p>
---	---

**Prepared By:**



Jessica Farrugia  
Quality Manager

**Approved By:**



Chris Magro  
Laboratory Manager

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**Laboratory Test Certificate**  
**Determination of Moisture Content of soil to BS1377 Part 2:1990**

Client name: J&P AVAX S.A.	Project: Onshore & Offshore	Certificate Nº: TCR073
Client address: 29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Geotechnical Investigation	Date of certificate: 06/10/2014
Attn: Giorgos Rousopoulos	Location/Town: Delimara	Client/Job Nº: J2094
Client Tel Nº: 306972019434		Test Reference No: MC011
		Tested by: MH, LS
		Date of test: 04/10/2014

**Sample Information:**  
 Sample ref Nº: 140926 - BH G7  
 Sampling location: BH G7  
 Sample depth: Various  
 Date of sampling: 26/09/2014  
 Type of material: Soil

**Test Details**

Test No:		1 BH G7 - 2m	2 BH G7 - 5m	3 BH G7 - 7m	4 BH G7 - 10m
Mass of Wet Soil + Container (m <sub>2</sub> )	g	515.5	563.5	388.5	409.9
Mass of Dry Soil + Container (m <sub>3</sub> )	g	314.8	333.3	279.6	307.4
Mass of Container (m <sub>1</sub> )	g	0	0	0	0
Mass of Moisture (m <sub>2</sub> -m <sub>3</sub> )	g	200.7	230.2	108.9	102.5
Mass of Dry Soil (m <sub>3</sub> -m <sub>1</sub> )	g	314.8	333.3	279.6	307.4
Moisture content:	%	63.75	69.07	38.95	33.34
Average moisture content:	%	51.28			

**Comments:**  

Nil

<b>Deviation from Standard:</b> <p style="text-align: center;">Nil</p>	<b>Remarks:</b> <p style="text-align: center;">Nil</p>
---	---

**Prepared By:**



Jessica Farrugia  
Quality Manager

**Approved By:**



Chris Magro  
Laboratory Manager

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**Laboratory Test Certificate**  
**Determination of Moisture Content of soil to BS1377 Part 2:1990**

Client name: J&P AVAX S.A.	Project: Onshore & Offshore	Certificate Nº: TCR074
Client address: 29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Geotechnical Investigation	Date of certificate: 06/10/2014
Attn: Giorgos Rousopoulos	Location/Town: Delimara	Client/Job Nº: J2094
Client Tel Nº: 306972019434		Test Reference No: MC012
		Tested by: MH, LS
		Date of test: 04/10/2014

**Sample Information:**  
 Sample ref Nº: 140926 - BH G7  
 Sampling location: BH G7  
 Sample depth: Various  
 Date of sampling: 26/09/2014  
 Type of material: Soil

**Test Details**

		1	2
Test No:		BH G7 - 14m	BH G7 - 17m
Mass of Wet Soil + Container ( $m_2$ )	g	705.4	726.1
Mass of Dry Soil + Container ( $m_3$ )	g	559.5	603.3
Mass of Container ( $m_1$ )	g	0	0
Mass of Moisture ( $m_2 - m_3$ )	g	145.9	122.8
Mass of Dry Soil ( $m_3 - m_1$ )	g	559.5	603.3
Moisture content:	%	26.08	20.35
Average moisture content:	%	23.22	

**Comments:**  

Nil

<b>Deviation from Standard:</b> <p style="text-align: center;">Nil</p>	<b>Remarks:</b> <p style="text-align: center;">Nil</p>
---	---

**Prepared By:**



Jessica Farrugia  
Quality Manager

**Approved By:**



Chris Magro  
Laboratory Manager

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**Determination of Moisture Content of soil to BS1377 Part 2:1990**

Client name: J&P AVAX S.A.	Project: Onshore & Offshore	Certificate Nº: TCR131
Client address: 29, Maroussiou	Geotechnical	Date of certificate: 10/10/2014
Holandriou Street	Investigation	Client/Job Nº: J2094
151-25 Maroussi Greece	Location/Town: Delimara	Test Reference No: MC017
Attn: Giorgos Rousopoulos		Tested by: MH, LS
Client Tel Nº: 306972019434		Date of test: 09/10/2014

**Sample Information:**  
 Sample ref Nº: 140926 - BH G7  
 Sampling location: BH G7  
 Sample depth: Various  
 Date of sampling: 26/09/2014  
 Type of material: Soil

**Test Details**

		1	2	3
Test No:		BH G7 - Sample 9	BH G7 - Sample 11	BH G7 - Sample 12
Mass of Wet Soil + Container (m <sub>2</sub> )	g	571.9	521.5	685.6
Mass of Dry Soil + Container (m <sub>3</sub> )	g	439.4	375.0	494.7
Mass of Container (m <sub>1</sub> )	g	0	0	0
Mass of Moisture (m <sub>2</sub> -m <sub>3</sub> )	g	132.5	146.5	190.9
Mass of Dry Soil (m <sub>3</sub> -m <sub>1</sub> )	g	439.4	375.0	494.7
Moisture content:	%	30.15	39.07	38.59
Average moisture content:	%			35.94

**Comments:**  

Nil

<b>Deviation from Standard:</b> <p style="text-align: center;">Nil</p>	<b>Remarks:</b> <p style="text-align: center;">Nil</p>
---	---

**Prepared By:**



Jessica Farrugia  
Quality Manager

**Approved By:**



Chris Magro  
Laboratory Manager

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**Laboratory Test Certificate**  
**Determination of Moisture Content of soil to BS1377 Part 2:1990**

Client name: J&P AVAX S.A.	Project: Onshore & Offshore	Certificate Nº: TCR054
Client address: 29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Geotechnical Investigation	Date of certificate: 02/10/2014
Attn: Giorgos Rousopoulos	Location/Town: Delimara	Client/Job Nº: J2094
Client Tel Nº: 306972019434		Test Reference No: MC006
		Tested by: MH
		Date of test: 10/2/2014

**Sample Information:**  
 Sample ref Nº: 140916 - BH G8  
 Sampling location: BH G8  
 Sample depth: Various  
 Date of sampling: 16/09/2014  
 Type of material: Soil

**Test Details**

Test No:		1	2	3	4
		BH G8 - 2 - 3m	BH G8 - 5.45 - 6.45m	BH G8 - 8.9 - 9.9m	BH G8 - 10.9 - 11.5m
Mass of Wet Soil + Container (m <sub>2</sub> )	g	503.5	513.3	896.4	826.5
Mass of Dry Soil + Container (m <sub>3</sub> )	g	304.3	306.7	585.4	595.9
Mass of Container (m <sub>1</sub> )	g	0	0	0	0
Mass of Moisture (m <sub>2</sub> -m <sub>3</sub> )	g	199.2	206.6	311.0	230.6
Mass of Dry Soil (m <sub>3</sub> -m <sub>1</sub> )	g	304.3	306.7	585.4	595.9
Moisture content:	%	65.46	67.36	53.13	38.70
Average moisture content:	%	56.16			

**Comments:**  

Nil

<b>Deviation from Standard:</b> <p style="text-align: center;">Nil</p>	<b>Remarks:</b> <p style="text-align: center;">Nil</p>
---	---

**Prepared By:**



Jessica Farrugia  
Quality Manager

**Approved By:**



Chris Magro  
Laboratory Manager

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**Laboratory Test Certificate**  
**Determination of Moisture Content of soil to BS1377 Part 2:1990**

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR001
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	18/09/2014
Attn:	Sfakianakis Costantinos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	MC001
				Tested by:	LS
				Date of test:	

**Sample Information:**  
 Sample ref Nº:  
 Sampling location:  
 Sample depth:  
 Date of sampling:  
 Type of material:

**Test Details**

Test No:		1 Sample 1 G9 R1 9m	2 Sample 2 G9 S2 13.3m	3 Sample 3 G10 R2 12.95 - 15.4m	4 Sample 4 G10 S1 5.7m - 6.35m	5 Sample 5 C10 S3 12.4 - 12.95m
Mass of Wet Soil + Container (m <sub>2</sub> )	g	651.53	799.22	687.31	948.09	851.41
Mass of Dry Soil + Container (m <sub>3</sub> )	g	420.29	497.38	457.29	781.54	613.02
Mass of Container (m <sub>1</sub> )	g	11.78	11.78	11.76	11.8	11.79
Mass of Moisture (m <sub>2</sub> -m <sub>3</sub> )	g	231.24	301.84	230.02	166.55	238.39
Mass of Dry Soil (m <sub>3</sub> -m <sub>1</sub> )	g	408.51	485.6	445.53	769.74	601.23
Moisture content:	%	56.61	62.16	51.63	21.64	39.65
Average moisture content:	%	46.34				

**Comments:**  

Nil

<b>Deviation from Standard:</b> <div style="text-align: center; height: 40px;">Nil</div>	<b>Remarks:</b> <div style="text-align: center; height: 40px;">Nil</div>
---	---

**Prepared By:**



Jessica Farrugia  
Quality Manager

**Approved By:**



Chris Magro  
Laboratory Manager

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**Determination of Moisture Content of soil to BS1377 Part 2:1990**

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR055
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	02/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	MC007
				Tested by:	MH
				Date of test:	02/10/2014

<b>Sample Information:</b>					
Sample ref Nº:	140915 - BH G9				
Sampling location:	BH G9				
Sample depth:	Various				
Date of sampling:	15/09/2014				
Type of material:	Soil				

<b>Test Details</b>					
Test No:		1	2	3	4
		BH G9 - 1m	BH G9 - 3 - 4m	BH G9 - 5.3 - 5.5m	BH G9 - 8.65 - 9.1m
Mass of Wet Soil + Container (m <sub>2</sub> )	g	306.1	602.1	318.7	504.7
Mass of Dry Soil + Container (m <sub>3</sub> )	g	186.9	440.6	204.2	385.7
Mass of Container (m <sub>1</sub> )	g	0	0	0	0
Mass of Moisture (m <sub>2</sub> -m <sub>3</sub> )	g	119.2	161.5	114.5	119.0
Mass of Dry Soil (m <sub>3</sub> -m <sub>1</sub> )	g	186.9	440.6	204.2	385.7
Moisture content:	%	63.78	36.65	56.07	30.85
Average moisture content:	%	46.84			

<b>Comments:</b>	
Nil	

<b>Deviation from Standard:</b>	<b>Remarks:</b>
Nil	Nil

**Prepared By:**



Jessica Farrugia  
Quality Manager

**Approved By:**



Chris Magro  
Laboratory Manager

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**Laboratory Test Certificate**  
**Determination of Moisture Content of soil to BS1377 Part 2:1990**

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR056
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	02/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	MC008
				Tested by:	MH
				Date of test:	02/10/2014

<b>Sample Information:</b>					
Sample ref Nº:	140912 - BH G10				
Sampling location:	BH G10				
Sample depth:	Various				
Date of sampling:	12/09/2014				
Type of material:	Soil				

<b>Test Details</b>					
Test No:		1	2	3	4
		BH G10 - 2.3 - 2.7m	BH G10 - 3.3 - 4.3m	BH G10 - 6.5 - 6.7m	BH G10 - 8.7 - 9.1m
Mass of Wet Soil + Container (m <sub>2</sub> )	g	494.4	612.2	666.5	750.7
Mass of Dry Soil + Container (m <sub>3</sub> )	g	390.4	450.8	465.3	506.4
Mass of Container (m <sub>1</sub> )	g	0	0	0	0
Mass of Moisture (m <sub>2</sub> -m <sub>3</sub> )	g	104	161.4	201.2	244.3
Mass of Dry Soil (m <sub>3</sub> -m <sub>1</sub> )	g	390.4	450.8	465.3	506.4
Moisture content:	%	26.64	35.80	43.24	48.24
Average moisture content:	%	38.48			

<b>Comments:</b>	
Nil	

<b>Deviation from Standard:</b>	<b>Remarks:</b>
Nil	Nil

**Prepared By:**



Jessica Farrugia  
Quality Manager

**Approved By:**



Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

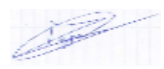
### Determination of Point load strength ISRM Suggested Methods

Client Name: J&P AVAX S.A.	Date of sampling: 30/09/2014	Certificate no: 15
Client address: 29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test: 08/10/2014	Date of certificate: 10-Oct-2014
Attn: Sfakianakis Constantinou	Project: Onshore & Offshore Geotechnical Investigation	Job no: J2094
Client Tel No: 306972019434	Location/Town: Delimara	Test reference no: PointLoad015
		Tested by: C.M

Sampling Location / Borehole Reference: G1	Calibration data of equipment: 17/06/2014	Grinding machine No: 135
Type of Drilling equipment used: Mobile Drill	Tested in Laboratory/In Situ Laboratory	Cutting machine No: 132
Type of Corebarrel used: T2-86		Sample selected by: LS

Test Details									
Sample No:	PLT	1	PLT	2	PLT	3	PLT	4	PLT
Storage condition of sample:	Air Sealed		Air Sealed		Air Sealed		Air Sealed		
Water content of specimen:	21.43		21.15		16.32		16.55		
Specimen In situ orientation:	Perpendicular		Perpendicular		Perpendicular		Perpendicular		
Depth:	26.2m		27.6m		31.5m		33.2m		
Run No:	n/a		n/a		n/a		n/a		

Test Details					
Date of Test:	08/10/2014	08/10/2014	08/10/2014	08/10/2014	
Diameter: (mm)	70.6	58.16	58.72	58.6	
Length: W (mm)	46.91	40.81	31.67	37.41	
Area $D_e$	65	55	49	53	
Length / diameter ratio:	2:1	2:1	2:1	2:1	
Specimen condition before test:	As Received	As Received	As Received	As Received	
Distance $D$	45	40	31	37	
Test Duration:	22	21	24	26	
Failure Load: $P$ kN	0.18	0.51	1.45	1.87	
Point load strength $I_s$	0.2	0.5	1.0	1.5	
Size correction Factor $F$	1.12	1.04	0.99	1.03	
Corrected point load strength $I_s$ (50)	0.2	0.5	1.0	1.6	
Specimen position	Perpendicular	Perpendicular	Perpendicular	Perpendicular	
Failure mode:	Satisfactory	Satisfactory	Satisfactory	Satisfactory	
Sample description:	Samples tested Axial				
Remarks/Deviations from Suggested method:	Nil				

  
Chris Magro  
Laboratory Manager

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Registration No.: C32227  
Directors: Alfred Xerri  
Filename: J2094\_Rock\_Pointload\_Report015.xls



## Laboratory Test Certificate

### Determination of Point load strength ISRM Suggested Methods

Client Name: J&P AVAX S.A.	Date of sampling: 30/09/2014	Certificate no: 16
Client address: 29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test: 08/10/2014	Date of certificate: 10-Oct-2014
Attn: Sfakianakis Constantinou	Project: Onshore & Offshore Geotechnical Investigation	Job no: J2094
Client Tel No: 306972019434	Location/Town: Delimara	Test reference no: PointLoad016
		Tested by: LS, MH

Sampling Location / Borehole Reference: G1	Calibration data of equipment: 17/06/2014	Grinding machine No: 135
Type of Drilling equipment used: Mobile Drill	Tested in Laboratory/In Situ Laboratory	Cutting machine No: 132
Type of Corebarrel used: T2-86		Sample selected by: LS

Test Details										
Sample No:	PLT	5	PLT	6	PLT	7	PLT	8	PLT	
Storage condition of sample:	Air Sealed		Air Sealed		Air Sealed		Air Sealed			
Water content of specimen:	25.16		21.66		16.5		16.49			
Specimen In situ orientation:	Perpendicular		Perpendicular		Perpendicular		Perpendicular			
Depth:	26.2m		27.6m		31.5m		33.2m			
Run No:	n/a		n/a		n/a		n/a			

Test Details					
Date of Test:	08/10/2014	08/10/2014	08/10/2014	08/10/2014	
Diameter: (mm)	71.31	58.06	58.89	58.69	
Length: W (mm)	50.69	34.78	31.66	32.77	
Area $D_e$	68	51	49	49	
Length / diameter ratio:	1:0	1:0	1:0	1:0	
Specimen condition before test:	As Received	As Received	As Received	As Received	
Distance $D$	69	57	58	58	
Test Duration:	21	22	24	26	
Failure Load: $P$ kN	0.16	0.29	0.74	0.61	
Point load strength $I_s$	0.1	0.2	0.5	0.4	
Size correction Factor $F$	1.15	1.01	0.99	1.00	
Corrected point load strength $I_s$ (50)	0.2	0.2	0.5	0.4	
Specimen position	Parallel	Parallel	Parallel	Parallel	
Failure mode:	Satisfactory	Satisfactory	Satisfactory	Satisfactory	
Sample description:	Samples tested Diametral				
Remarks/Deviations from Suggested method:	Nil				

  
Chris Magro  
Laboratory Manager

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Registration No.: C32227  
Directors: Alfred Xerri  
Filename: J2094\_Rock\_Pointload\_Report016.xls

## Laboratory Test Certificate

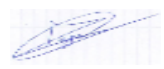
### Determination of Point load strength ISRM Suggested Methods

Client Name: J&P AVAX S.A.	Date of sampling: 01/10/2014	Certificate no: 17
Client address: 29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test: 08/10/2014	Date of certificate: 10-Oct-2014
Attn: Sfakianakis Constantinou	Project: Onshore & Offshore Geotechnical Investigation	Job no: J2094
Client Tel No: 306972019434	Location/Town: Delimara	Test reference no: PointLoad017
		Tested by: C.M

Sampling Location / Borehole Reference: G2	Calibration data of equipment: 17/06/2014	Grinding machine No: 135
Type of Drilling equipment used: Mobile Drill	Tested in Laboratory/In Situ Laboratory	Cutting machine No: 132
Type of Corebarrel used: T2-86		Sample selected by: LS

Test Details										
Sample No:	PLT	1	PLT	2	PLT	3	PLT	4	PLT	
Storage condition of sample:	Air Sealed		Air Sealed		Air Sealed		Air Sealed			
Water content of specimen:	13.67		14.52		13.99		2.64			
Specimen In situ orientation:	Perpendicular		Perpendicular		Perpendicular		Perpendicular			
Depth:	30.9m		33.5m		33.8m		26.2m			
Run No:	n/a		n/a		n/a		n/a			

Test Details					
Date of Test:	08/10/2014	08/10/2014	08/10/2014	08/10/2014	
Diameter: (mm)	58.34	58.22	58.26	66.08	
Length: W (mm)	40.9	38.76	37.63	43.7	
Area $D_e$	55	54	53	61	
Length / diameter ratio:	2:1	2:1	2:1	2:1	
Specimen condition before test:	As Received	As Received	As Received	As Received	
Distance $D$	42	40	37	43	
Test Duration:	22	20	21	24	
Failure Load: $P$ kN	2.04	2.47	1.74	11.59	
Point load strength $I_s$	1.8	2.1	1.4	9.8	
Size correction Factor $F$	1.04	1.03	1.03	1.09	
Corrected point load strength $I_s$ (50)	1.9	2.2	1.5	10.6	
Specimen position	Perpendicular	Perpendicular	Perpendicular	Perpendicular	
Failure mode:	Satisfactory	Satisfactory	Satisfactory	Satisfactory	
Sample description:	Samples tested Axial				
Remarks/Deviations from Suggested method:	Nil				

  
Chris Magro  
Laboratory Manager

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Registration No.: C32227  
Directors: Alfred Xerri  
Filename: J2094\_Rock\_Pointload\_Report017.xls

## Laboratory Test Certificate

### Determination of Point load strength ISRM Suggested Methods

Client Name: J&P AVAX S.A.	Date of sampling: 01/10/2014	Certificate no: 18
Client address: 29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test: 08/10/2014	Date of certificate: 10-Oct-2014
Attn: Sfakianakis Constantinou	Project: Onshore & Offshore Geotechnical Investigation	Job no: J2094
Client Tel No: 306972019434	Location/Town: Delimara	Test reference no: PointLoad018
		Tested by: LS, MH

Sampling Location / Borehole Reference: G2	Calibration data of equipment: 17/06/2014	Grinding machine No: 135
Type of Drilling equipment used: Mobile Drill	Tested in Laboratory/In Situ Laboratory	Cutting machine No: 132
Type of Corebarrel used: T2-86		Sample selected by: LS

Test Details										
Sample No:	PLT	5	PLT	6	PLT	7	PLT	8	PLT	
Storage condition of sample:	Air Sealed		Air Sealed		Air Sealed		Air Sealed			
Water content of specimen:	13.83		14.59		14.32		2.88			
Specimen In situ orientation:	Perpendicular		Perpendicular		Perpendicular		Perpendicular			
Depth:	30.9m		33.5m		33.8m					
Run No:	n/a		n/a		n/a		n/a			

Test Details					
Date of Test:	08/10/2014	08/10/2014	08/10/2014	08/10/2014	
Diameter: (mm)	58.37	58.24	58.19	66.35	
Length: W (mm)	38.07	39.87	38.96	43.52	
Area $D_e$	53	54	54	61	
Length / diameter ratio:	1:0	1:0	1:0	1:0	
Specimen condition before test:	As Received	As Received	As Received	As Received	
Distance $D$	58	57	58	66	
Test Duration:	27	26	25	25	
Failure Load: $P$ kN	1.35	1.15	1.05	8.15	
Point load strength $I_s$	1.1	1.0	0.9	6.8	
Size correction Factor $F$	1.03	1.04	1.03	1.09	
Corrected point load strength $I_s$ (50)	1.2	1.0	0.9	7.4	
Specimen position	Parallel	Parallel	Parallel	Parallel	
Failure mode:	Satisfactory	Satisfactory	Satisfactory	Satisfactory	
Sample description:	Samples tested Diametral				
Remarks/Deviations from Suggested method:	Nil				

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Registration No.: C32227  
Directors: Alfred Xerri  
Filename: J2094\_Rock\_Pointload\_Report018.xls

## Laboratory Test Certificate

### Determination of Point load strength ISRM Suggested Methods

Client Name: J&P AVAX S.A.	Date of sampling: 04/10/2014	Certificate no: 19
Client address: 29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test: 08/10/2014	Date of certificate: 10-Oct-2014
Attn: Sfakianakis Constantinou	Project: Onshore & Offshore Geotechnical Investigation	Job no: J2094
Client Tel No: 306972019434	Location/Town: Delimara	Test reference no: PointLoad019
		Tested by: C.M

Sampling Location / Borehole Reference: G3	Calibration data of equipment: 17/06/2014	Grinding machine No: 135
Type of Drilling equipment used: Mobile Drill	Tested in Laboratory/In Situ Laboratory	Cutting machine No: 132
Type of Corebarrel used: T2-86		Sample selected by: LS

Test Details										
Sample No:	PLT	1	PLT	2	PLT	3	PLT	4	PLT	5
Storage condition of sample:	Air Sealed		Air Sealed		Air Sealed		Air Sealed		Air Sealed	
Water content of specimen:	20.45		20.57		16.9		17.96		15.89	
Specimen In situ orientation:	Perpendicular		Perpendicular		Perpendicular		Perpendicular		Perpendicular	
Depth:	13.75m		16.35m		20.35m		23.75m		25.70m	
Run No:	n/a		n/a		n/a		n/a		n/a	

Test Details					
Date of Test:	08/10/2014	08/10/2014	08/10/2014	08/10/2014	41920
Diameter: (mm)	58.24	58.45	63.74	58.55	58.54
Length: W (mm)	34.2	40.96	37.97	30.56	27.08
Area $D_e$	50	55	56	48	45
Length / diameter ratio:	2:1	2:1	2:1	2:1	2:1
Specimen condition before test:	As Received	As Received	As Received	As Received	As Received
Distance $D$	33	40	37	30	26
Test Duration:	25	27	28	29	25
Failure Load: $P$ kN	0.14	0.27	1.08	0.66	1.25
Point load strength $I_s$	0.1	0.2	0.8	0.4	0.7
Size correction Factor $F$	1.00	1.05	1.05	0.98	0.95
Corrected point load strength $I_s$ (50)	0.1	0.3	0.9	0.4	0.7
Specimen position	Perpendicular	Perpendicular	Perpendicular	Perpendicular	Perpendicular
Failure mode:	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory
Sample description:	Samples tested Axial				
Remarks/Deviations from Suggested method:	Nil				

  
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Laboratory Manager

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## Laboratory Test Certificate

### Determination of Point load strength ISRM Suggested Methods

Client Name: J&P AVAX S.A.	Date of sampling: 04/10/2014	Certificate no: 20
Client address: 29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test: 08/10/2014	Date of certificate: 10-Oct-2014
Attn: Sfakianakis Constantinou	Project: Onshore & Offshore Geotechnical Investigation	Job no: J2094
Client Tel No: 306972019434	Location/Town: Delimara	Test reference no: PointLoad020
		Tested by: C.M

Sampling Location / Borehole Reference: G3	Calibration data of equipment: 17/06/2014	Grinding machine No: 135
Type of Drilling equipment used: Mobile Drill	Tested in Laboratory/In Situ Laboratory	Cutting machine No: 132
Type of Corebarrel used: T2-86		Sample selected by: LS

Test Details										
Sample No:	PLT	6	PLT	7	PLT	8	PLT	9	PLT	10
Storage condition of sample:	Air Sealed		Air Sealed		Air Sealed		Air Sealed		Air Sealed	
Water content of specimen:	21.90		20.77		17.19		17.94		16.27	
Specimen In situ orientation:	Perpendicular		Perpendicular		Perpendicular		Perpendicular		Perpendicular	
Depth:	13.75m		16.35m		20.35m		23.75m		25.70m	
Run No:	n/a		n/a		n/a		n/a		n/a	

Test Details					
Date of Test:	08/10/2014	08/10/2014	08/10/2014	08/10/2014	41920
Diameter: (mm)	58.24	58.49	63.68	58.52	58.58
Length: W (mm)	37.73	36.12	34.07	34.8	25.4
Area $D_e$	53	52	53	51	44
Length / diameter ratio:	1:0	1:0	1:0	1:0	1:0
Specimen condition before test:	As Received	As Received	As Received	As Received	As Received
Distance $D$	57	58	63	58	58
Test Duration:	22	21	20	21	22
Failure Load: $P$ kN	0.13	0.36	0.47	0.21	0.63
Point load strength $I_s$	0.1	0.3	0.3	0.2	0.3
Size correction Factor $F$	1.03	1.02	1.02	1.01	0.94
Corrected point load strength $I_s$ (50)	0.1	0.3	0.3	0.2	0.3
Specimen position	Parallel	Parallel	Parallel	Parallel	Parallel
Failure mode:	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory
Sample description:	Samples tested Diametrical				
Remarks/Deviations from Suggested method:	Nil				

  
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Laboratory Manager

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Directors: Alfred Xerri  
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## Laboratory Test Certificate

### Determination of Point load strength ISRM Suggested Methods

Client Name: J&P AVAX S.A.	Date of sampling: 29/09/2014	Certificate no: 9
Client address: 29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test: 02/10/2014	Date of certificate: 3-Oct-2014
Attn: Sfakianakis Costantinos	Project: Onshore & Offshore Geotechnical Investigation	Job no: J2094
Client Tel No: 306972019434	Location/Town: Delimara	Test reference no: PointLoad009
		Tested by: LS, MH

Sampling Location / Borehole Reference: G4	Calibration data of equipment: 17/06/2014	Grinding machine No: 135
Type of Drilling equipment used: Mobile Drill	Tested in Laboratory/In Situ Laboratory	Cutting machine No: 132
Type of Corebarrel used: T2-86		Sample selected by: LS

Test Details									
Sample No:	PLT	1	PLT	2	PLT	5	PLT	6	PLT
Storage condition of sample:	Air Sealed		Air Sealed		Air Sealed		Air Sealed		
Water content of specimen:	17.79		14.93						
Specimen In situ orientation:	Perpendicular		Perpendicular		Perpendicular		Perpendicular		
Depth:	8.4 - 9m		11.4 - 11.9m		15.4m		22m		
Run No:	n/a		n/a		n/a		n/a		

Test Details					
Date of Test:	02/10/2014	02/10/2014	03/10/2014	03/10/2014	
Diameter: (mm)	66.74	66.87	67.56	66.86	
Length: W (mm)	38.79	40.06	39.54	50.66	
Area $D_e$	57	58	58	66	
Length / diameter ratio:	2:1	2:1	2:1	2:1	
Specimen condition before test:	As Received	As Received	As Received	As Received	
Distance $D$	39	40	39	50	
Test Duration:	21	22	27	31	
Failure Load: $P$ kN	0.32	1.22	1.11	1.64	
Point load strength $I_s$	0.2	0.9	0.8	1.6	
Size correction Factor $F$	1.06	1.07	1.07	1.13	
Corrected point load strength $I_s$ (50)	0.3	1.0	0.9	1.8	
Specimen position	Perpendicular	Perpendicular	Perpendicular	Perpendicular	
Failure mode:	Satisfactory	Satisfactory	Satisfactory	Satisfactory	
Sample description:	Samples tested Axial				
Remarks/Deviations from Suggested method:	Nil				

  
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Laboratory Manager

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## Laboratory Test Certificate

### Determination of Point load strength ISRM Suggested Methods

Client Name: J&P AVAX S.A.	Date of sampling: 29/09/2014	Certificate no: 10
Client address: 29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test: 02/10/2014	Date of certificate: 3-Oct-2014
Attn: Sfakianakis Constantinou	Project: Onshore & Offshore Geotechnical Investigation	Job no: J2094
Client Tel No: 306972019434	Location/Town: Delimara	Test reference no: PointLoad010
		Tested by: LS, MH

Sampling Location / Borehole Reference: G4	Calibration data of equipment: 17/06/2014	Grinding machine No: 135
Type of Drilling equipment used: Mobile Drill	Tested in Laboratory/In Situ Laboratory	Cutting machine No: 132
Type of Corebarrel used: T2-86		Sample selected by: LS

#### Test Details

Sample No:	PLT	3	PLT	4	PLT	7	PLT	8	PLT	
Storage condition of sample:	Air Sealed		Air Sealed		Air Sealed		Air Sealed			
Water content of specimen:	18.44		14.65							
Specimen In situ orientation:	Perpendicular		Perpendicular		Perpendicular		Perpendicular			
Depth:	8.4 - 9m		11.4 - 11.9m		15.4m		22m			
Run No:	n/a		n/a		n/a		n/a			

#### Test Details

Date of Test:	02/10/2014	02/10/2014	03/10/2014	03/10/2014	
Diameter: (mm)	66.74	66.79	68.1	66.88	
Length: W (mm)	37.58	38.85	38.97	49.57	
Area $D_e$	57	57	58	65	
Length / diameter ratio:	1:0	1:0	1:0	1:0	
Specimen condition before test:	As Received	As Received	As Received	As Received	
Distance $D$	67	66	67	66	
Test Duration:	18	21	13	16	
Failure Load: $P$ kN	0.23	0.85	1.09	0.69	
Point load strength $I_s$	0.2	0.6	0.8	0.7	
Size correction Factor $F$	1.06	1.06	1.07	1.13	
Corrected point load strength $I_s$ (50)	0.2	0.7	0.8	0.7	
Specimen position	Parallel	Parallel	Parallel	Parallel	
Failure mode:	Satisfactory	Satisfactory	Satisfactory	Satisfactory	

Sample description:	Samples tested Diametral
Remarks/Deviations from Suggested method:	Nil



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Laboratory Manager

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Directors: Alfred Xerri

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## Laboratory Test Certificate Determination of Point load strength ISRM Suggested Methods

Client Name: J&P AVAX S.A.	Date of sampling: 03/10/2014	Certificate no: 21
Client address: 29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test: 08/10/2014	Date of certificate: 10-Oct-2014
Attn: Sfakianakis Constantinou	Project: Onshore & Offshore Geotechnical Investigation	Job no: J2094
Client Tel No: 306972019434	Location/Town: Delimara	Test reference no: PointLoad021
		Tested by: C.M

Sampling Location / Borehole Reference: G5	Calibration data of equipment: 17/06/2014	Grinding machine No: 135
Type of Drilling equipment used: Mobile Drill	Tested in Laboratory/In Situ Laboratory	Cutting machine No: 132
Type of Corebarrel used: T2-86		Sample selected by: LS

Test Details									
Sample No:	PLT	1	PLT	2	PLT	3	PLT		PLT
Storage condition of sample:	Air Sealed		Air Sealed		Air Sealed				
Water content of specimen:	16.92		14.7		13.87				
Specimen In situ orientation:	Perpendicular		Perpendicular		Perpendicular				
Depth:	29.0m		35.1m		36.2m				
Run No:	n/a		n/a		n/a				

Test Details					
Date of Test:	08/10/2014	08/10/2014	08/10/2014		
Diameter: (mm)	58.44	63.69	58.32		
Length: W (mm)	32.31	24.64	40.18		
Area $D_e$	49	45	55		
Length / diameter ratio:	2:1	2:1	2:1		
Specimen condition before test:	As Received	As Received	As Received		
Distance $D$	32	24	40		
Test Duration:	25	28	26		
Failure Load: $P$ kN	1.48	1.36	2.45		
Point load strength $I_s$	1.0	0.7	2.1		
Size correction Factor $F$	0.99	0.95	1.04		
Corrected point load strength $I_s$ (50)	1.0	0.6	2.2		
Specimen position	Perpendicular	Perpendicular	Perpendicular		
Failure mode:	Satisfactory	Satisfactory	Satisfactory		
Sample description:	Samples tested Axial				
Remarks/Deviations from Suggested method:	Nil				

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## Laboratory Test Certificate

### Determination of Point load strength ISRM Suggested Methods

Client Name: J&P AVAX S.A.	Date of sampling: 03/10/2014	Certificate no: 22
Client address: 29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test: 08/10/2014	Date of certificate: 10-Oct-2014
Attn: Sfakianakis Costantinos	Project: Onshore & Offshore Geotechnical Investigation	Job no: J2094
Client Tel No: 306972019434	Location/Town: Delimara	Test reference no: PointLoad022
		Tested by: C.M

Sampling Location / Borehole Reference: G5	Calibration data of equipment: 17/06/2014	Grinding machine No: 135
Type of Drilling equipment used: Mobile Drill	Tested in Laboratory/In Situ Laboratory	Cutting machine No: 132
Type of Corebarrel used: T2-86		Sample selected by: LS

Test Details									
Sample No:	PLT	4	PLT	5	PLT	6	PLT		PLT
Storage condition of sample:	Air Sealed		Air Sealed		Air Sealed				
Water content of specimen:	16.66		14.2		13.97				
Specimen In situ orientation:	Perpendicular		Perpendicular		Perpendicular				
Depth:	29.0m		35.1m		36.2m				
Run No:	n/a		n/a		n/a				

Test Details					
Date of Test:	08/10/2014	08/10/2014	08/10/2014		
Diameter: (mm)	58.49	63.86	58.3		
Length: W (mm)	34.86	29.14	36.5		
Area $D_e$	51	49	52		
Length / diameter ratio:	1:0	1:0	1:0		
Specimen condition before test:	As Received	As Received	As Received		
Distance $D$	57	63	58		
Test Duration:	26	28	27		
Failure Load: $P$ kN	0.75	0.86	1.1		
Point load strength $I_s$	0.6	0.5	0.9		
Size correction Factor $F$	1.01	0.99	1.02		
Corrected point load strength $I_s$ (50)	0.6	0.5	0.9		
Specimen position	Parallel	Parallel	Parallel		
Failure mode:	Satisfactory	Satisfactory	Satisfactory		
Sample description:	Samples tested Diametrical				
Remarks/Deviations from Suggested method:	Nil				

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## Laboratory Test Certificate

### Determination of Point load strength ISRM Suggested Methods

Client Name: J&P AVAX S.A.	Date of sampling: 28/09/2014	Certificate no: 11
Client address: 29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test: 02/10/2014	Date of certificate: 3-Oct-2014
Attn: Sfakianakis Constantinos	Project: Onshore & Offshore Geotechnical Investigation	Job no: J2094
Client Tel No: 306972019434	Location/Town: Delimara	Test reference no: PointLoad011
		Tested by: LS, MH

Sampling Location / Borehole Reference: G6	Calibration data of equipment: 17/06/2014	Grinding machine No: 135
Type of Drilling equipment used: Mobile Drill	Tested in Laboratory/In Situ Laboratory	Cutting machine No: 132
Type of Corebarrel used: T2-86		Sample selected by: LS

Test Details									
Sample No:	PLT	1	PLT	2	PLT	3	PLT		PLT
Storage condition of sample:	Air Sealed		Air Sealed		Air Sealed				
Water content of specimen:	15.69		14.58		15.12				
Specimen In situ orientation:	Perpendicular		Perpendicular		Perpendicular				
Depth:	23 - 23.8m		25 - 25.5m		29 - 29.6m				
Run No:	n/a		n/a		n/a				

Test Details					
Date of Test:	02/10/2014	02/10/2014	02/10/2014		
Diameter: (mm)	61.67	64.63	66.77		
Length: W (mm)	38.17	38.83	41.13		
Area $D_e$	55	57	59		
Length / diameter ratio:	2:1	2:1	2:1		
Specimen condition before test:	As Received	As Received	As Received		
Distance $D$	38	38	42		
Test Duration:	13	15	18		
Failure Load: $P$ kN	1.59	1.5	1.67		
Point load strength $I_s$	1.3	1.1	1.3		
Size correction Factor $F$	1.04	1.06	1.08		
Corrected point load strength $I_s$ (50)	1.3	1.2	1.4		
Specimen position	Perpendicular	Perpendicular	Perpendicular		
Failure mode:	Satisfactory	Satisfactory	Satisfactory		
Sample description:	Samples tested Axial				
Remarks/Deviations from Suggested method:	Nil				



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Registration No.: C32227  
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Filename: J2094\_Rock\_Pointload\_Report011.xls

## Laboratory Test Certificate

### Determination of Point load strength ISRM Suggested Methods

Client Name: J&P AVAX S.A.	Date of sampling: 28/09/2014	Certificate no: 12
Client address: 29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test: 02/10/2014	Date of certificate: 3-Oct-2014
Attn: Sfakianakis Costantinos	Project: Onshore & Offshore Geotechnical Investigation	Job no: J2094
Client Tel No: 306972019434	Location/Town: Delimara	Test reference no: PointLoad012
		Tested by: LS, MH

Sampling Location / Borehole Reference: G6	Calibration data of equipment: 17/06/2014	Grinding machine No: 135
Type of Drilling equipment used: Mobile Drill	Tested in Laboratory/In Situ Laboratory	Cutting machine No: 132
Type of Corebarrel used: T2-86		Sample selected by: LS

Test Details									
Sample No:	PLT	4	PLT	5	PLT	6	PLT		PLT
Storage condition of sample:	Air Sealed		Air Sealed		Air Sealed				
Water content of specimen:	15.65		14.49		15.64				
Specimen In situ orientation:	Perpendicular		Perpendicular		Perpendicular				
Depth:	23 - 23.8m		25 - 25.5m		29 - 29.6m				
Run No:	n/a		n/a		n/a				

Test Details					
Date of Test:	02/10/2014	02/10/2014	02/10/2014		
Diameter: (mm)	61.57	64.68	66.82		
Length: W (mm)	38.18	37.3	38.43		
Area $D_e$	55	55	57		
Length / diameter ratio:	1:0	1:0	1:0		
Specimen condition before test:	As Received	As Received	As Received		
Distance $D$	62	66	66		
Test Duration:	20	18	18		
Failure Load: $P$ kN	0.86	1.05	1.15		
Point load strength $I_s$	0.7	0.8	0.8		
Size correction Factor $F$	1.04	1.05	1.06		
Corrected point load strength $I_s$ (50)	0.7	0.8	0.9		
Specimen position	Parallel	Parallel	Parallel		
Failure mode:	Satisfactory	Satisfactory	Satisfactory		
Sample description:	Samples tested Diametral				
Remarks/Deviations from Suggested method:	Nil				



Chris Magro  
Laboratory Manager

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Registration No.: C32227  
Directors: Alfred Xerri  
Filename: J2094\_Rock\_Pointload\_Report012.xls

## Laboratory Test Certificate

### Determination of Point load strength ISRM Suggested Methods

Client Name: J&P AVAX S.A.	Date of sampling: 28/09/2014	Certificate no: 13
Client address: 29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test: 02/10/2014	Date of certificate: 3-Oct-2014
Attn: Sfakianakis Costantinos	Project: Onshore & Offshore Geotechnical Investigation	Job no: J2094
Client Tel No: 306972019434	Location/Town: Delimara	Test reference no: PointLoad013
		Tested by: LS, MH

Sampling Location / Borehole Reference: G7	Calibration data of equipment: 17/06/2014	Grinding machine No: 135
Type of Drilling equipment used: Mobile Drill	Tested in Laboratory/In Situ Laboratory	Cutting machine No: 132
Type of Corebarrel used: T2-86		Sample selected by: LS

Test Details									
Sample No:	PLT	1	PLT	2	PLT		PLT		PLT
Storage condition of sample:		Air Sealed		Air Sealed					
Water content of specimen:		18.3		14.17					
Specimen In situ orientation:		Perpendicular		Perpendicular					
Depth:		21.8 - 22.8m		24.4 - 25.2m					
Run No:		n/a		n/a					

Test Details				
Date of Test:	02/10/2014	02/10/2014		
Diameter: (mm)	66.49	66.58		
Length: W (mm)	38.01	40.87		
Area $D_e$	57	59		
Length / diameter ratio:	2:1	2:1		
Specimen condition before test:	As Received	As Received		
Distance $D$	37	40		
Test Duration:	22	24		
Failure Load: $P$ kN	0.64	2.13		
Point load strength $I_s$	0.5	1.7		
Size correction Factor $F$	1.06	1.08		
Corrected point load strength $I_s$ (50)	0.5	1.8		
Specimen position	Perpendicular	Perpendicular		
Failure mode:	Satisfactory	Satisfactory		
Sample description:	Samples tested Axial			
Remarks/Deviations from Suggested method:	Nil			

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 Directors: Alfred Xerri  
 Filename: J2094\_Rock\_Pointload\_Report013.xls

## Laboratory Test Certificate

### Determination of Point load strength ISRM Suggested Methods

Client Name: J&P AVAX S.A.	Date of sampling: 28/09/2014	Certificate no: 14
Client address: 29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test: 02/10/2014	Date of certificate: 3-Oct-2014
Attn: Sfakianakis Costantinos	Project: Onshore & Offshore Geotechnical Investigation	Job no: J2094
Client Tel No: 306972019434	Location/Town: Delimara	Test reference no: PointLoad014
		Tested by: LS, MH

Sampling Location / Borehole Reference: G7	Calibration data of equipment: 17/06/2014	Grinding machine No: 135
Type of Drilling equipment used: Mobile Drill	Tested in Laboratory/In Situ Laboratory	Cutting machine No: 132
Type of Corebarrel used: T2-86		Sample selected by: LS

Test Details									
Sample No:	PLT	3	PLT	4	PLT		PLT		PLT
Storage condition of sample:	Air Sealed		Air Sealed						
Water content of specimen:	18.40		13.51						
Specimen In situ orientation:	Perpendicular		Perpendicular						
Depth:	21.8 - 22.8m		24.4 - 25.2m						
Run No:	n/a		n/a						

Test Details				
Date of Test:	02/10/2014	02/10/2014		
Diameter: (mm)	66.87	66.6		
Length: W (mm)	38.26	35.39		
Area $D_e$	57	55		
Length / diameter ratio:	1:0	1:0		
Specimen condition before test:	As Received	As Received		
Distance $D$	67	66		
Test Duration:	26	25		
Failure Load: $P$ kN	0.4	1.04		
Point load strength $I_s$	0.3	0.7		
Size correction Factor $F$	1.06	1.04		
Corrected point load strength $I_s$ (50)	0.3	0.7		
Specimen position	Parallel	Parallel		
Failure mode:	Satisfactory	Satisfactory		
Sample description:	Samples tested Diametral			
Remarks/Deviations from Suggested method:	Nil			

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 Filename: J2094\_Rock\_Pointload\_Report014.xls

## Laboratory Test Certificate

### Determination of Point load strength ISRM Suggested Methods

Client Name: J&P AVAX S.A.	Date of sampling: 16/09/2014	Certificate no: 1
Client address: 29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test: 23/09/2014	Date of certificate: 24-Sep-2014
Attn: Sfakianakis Costantinos	Project: Onshore & Offshore Geotechnical Investigation	Job no: J2094
Client Tel No: 306972019434	Location/Town: Delimara	Test reference no: PointLoad001
		Tested by: LS

Sampling Location / Borehole Reference: G8	Calibration data of equipment: 17/06/2014	Grinding machine No: 135
Type of Drilling equipment used: Mobile Drill	Tested in Laboratory/In Situ Laboratory	Cutting machine No: 132
Type of Corebarrel used: T2-86		Sample selected by: LS

Test Details										
Sample No:	PLT	1	PLT	2	PLT	3	PLT	4	PLT	5
Storage condition of sample:	Sealed until tested		Sealed until tested		Sealed until tested		Sealed until tested		Sealed until tested	
Water content of specimen:	21.03		18.59		17.17		17.03		16.57	
Specimen In situ orientation:	Perpendicular		Perpendicular		Perpendicular		Perpendicular		Perpendicular	
Depth:	16.3m		17.3m		19.3m		24.1m		24.9m	
Run No:	3		3		4		5		6	

Test Details					
Date of Test:	23/09/2014	41905	41905	41905	41905
Diameter: (mm)	69.93	68.94	69.38	69.6	70.2
Length: W (mm)	69.38	69.95	71.04	71	70.44
Area $D_e$	79	78	79	79	79
Length / diameter ratio:	1:1	1:1	1:1	1:1	1:1
Specimen condition before test:	As Received	As Received	As Received	As Received	As Received
Distance $D$	69	68	69	69	69
Test Duration:	19	32	16	14	14
Failure Load: $P$ kN	0.49	0.71	0.92	1.72	1.37
Point load strength $I_s$	0.6	0.9	1.2	2.2	1.8
Size correction Factor $F$	1.23	1.22	1.23	1.23	1.23
Corrected point load strength $I_s$ (50)	0.8	1.1	1.5	2.7	2.2
Specimen position	Parallel	Parallel	Parallel	Parallel	Parallel
Failure mode:	Satisfactory	Satisfactory	Satisfactory	Unsatisfactory	Unsatisfactory
Sample description:	Samples tested diametral				
Remarks/Deviations from Suggested method:	Nil				

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## Laboratory Test Certificate

### Determination of Point load strength ISRM Suggested Methods

Client Name: J&P AVAX S.A.	Date of sampling: 16/09/2014	Certificate no: 2
Client address: 29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test: 23/09/2014	Date of certificate: 24-Sep-2014
Attn: Sfakianakis Costantinos	Project: Onshore & Offshore Geotechnical Investigation	Job no: J2094
Client Tel No: 306972019434	Location/Town: Delimara	Test reference no: PointLoad002
		Tested by: LS


Sampling Location / Borehole Reference: G8	Calibration data of equipment: 17/06/2014	Grinding machine No: 135
Type of Drilling equipment used: Mobile Drill	Tested in Laboratory/In Situ Laboratory	Cutting machine No: 132
Type of Corebarrel used: T2-86		Sample selected by: LS

#### Test Details

Sample No:	PLT	6	PLT		PLT		PLT		PLT	
Storage condition of sample:	Sealed until tested									
Water content of specimen:	18.31									
Specimen In situ orientation:	Perpendicular									
Depth:	22.0m									
Run No:	5									

#### Test Details

Date of Test:	23/09/2014				
Diameter: (mm)	68.9				
Length: W (mm)	68.72				
Area $D_e$	78				
Length / diameter ratio:	1:1				
Specimen condition before test:	As Received				
Distance $D$	68				
Test Duration:	9				
Failure Load: $P$ kN	0.33				
Point load strength $I_s$	0.4				
Size correction Factor $F$	1.22				
Corrected point load strength $I_s$ (50)	0.5				
Specimen position	Parallel				
Failure mode:	Unsatisfactory				
Sample description:	Sample tested diametral				
Remarks/Deviations from Suggested method:	Nil				

  
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Laboratory Manager

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## Laboratory Test Certificate

### Determination of Point load strength ISRM Suggested Methods

Client Name: J&P AVAX S.A.	Date of sampling: 16/09/2014	Certificate no: 3
Client address: 29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test: 23/09/2014	Date of certificate: 24-Sep-2014
Attn: Sfakianakis Costantinos	Project: Onshore & Offshore Geotechnical Investigation	Job no: J2094
Client Tel No: 306972019434	Location/Town: Delimara	Test reference no: PointLoad003
		Tested by: LS

Sampling Location / Borehole Reference: G8	Calibration data of equipment: 17/06/2014	Grinding machine No: 135
Type of Drilling equipment used: Mobile Drill	Tested in Laboratory/In Situ Laboratory	Cutting machine No: 132
Type of Corebarrel used: T2-86		Sample selected by: LS

Test Details										
Sample No:	PLT	1	PLT	2	PLT	3	PLT	4	PLT	5
Storage condition of sample:	Sealed until tested		Sealed until tested		Sealed until tested		Sealed until tested		Sealed until tested	
Water content of specimen:	21.03		18.59		17.17		16.57		18.31	
Specimen In situ orientation:	Perpendicular		Perpendicular		Perpendicular		Perpendicular		Perpendicular	
Depth:	16.3m		17.3m		19.3m		24.9m		22m	
Run No:	3		3		4		6		5	

Test Details					
Date of Test:	23/09/2014	41905	41905	41905	41905
Diameter: (mm)	70.03	69.01	69.5	70.2	69.09
Length: W (mm)	35.56	22.99	34.52	70.44	34.2
Area $D_e$	56	45	55	79	55
Length / diameter ratio:	2:1	2:1	2:1	2:1	2:1
Specimen condition before test:	As Received	As Received	As Received	As Received	As Received
Distance $D$	33	22	30	70	32
Test Duration:	16	11	12	17	24
Failure Load: $P$ kN	0.39	0.38	0.61	2.21	0.47
Point load strength $I_s$	0.3	0.2	0.4	2.8	0.3
Size correction Factor $F$	1.05	0.95	1.05	1.23	1.04
Corrected point load strength $I_s$ (50)	0.3	0.2	0.4	3.5	0.3
Specimen position	Perpendicular	Perpendicular	Perpendicular	Perpendicular	Perpendicular
Failure mode:	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Unsatisfactory
Sample description:	Samples tested Axial				
Remarks/Deviations from Suggested method:	Nil				

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## Laboratory Test Certificate

### Determination of Point load strength ISRM Suggested Methods

Client Name: J&P AVAX S.A.	Date of sampling: 15/09/2014	Certificate no: 6
Client address: 29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test: 23/09/2014	Date of certificate: 24-Sep-2014
Attn: Sfakianakis Constantinos	Project: Onshore & Offshore Geotechnical Investigation	Job no: J2094
Client Tel No: 306972019434	Location/Town: Delimara	Test reference no: PointLoad006
		Tested by: LS

Sampling Location / Borehole Reference: G9	Calibration data of equipment: 17/06/2014	Grinding machine No: 135
Type of Drilling equipment used: Mobile Drill	Tested in Laboratory/In Situ Laboratory	Cutting machine No: 132
Type of Corebarrel used: T2-86		Sample selected by: LS

Test Details										
Sample No:	PLT	8	PLT	9	PLT	10	PLT	11	PLT	12
Storage condition of sample:	Sealed until tested		Sealed until tested		Sealed until tested		Sealed until tested		Sealed until tested	
Water content of specimen:	20.25		17.57		18.99		16.28		16.13	
Specimen In situ orientation:	Perpendicular		Perpendicular		Perpendicular		Perpendicular		Perpendicular	
Depth:	9.8m		15.4m		14.4m		18.3m		21.5m	
Run No:	1		3		3		4		5	

Test Details					
Date of Test:	23/09/2014	23/09/2014	23/09/2014	41905	41905
Diameter: (mm)	61.72	68.49	66.66	71.04	69.74
Length: W (mm)	123.71	69.9	66.38	71.17	71.66
Area $D_e$	99	78	75	80	80
Length / diameter ratio:	1:1	1:1	1:1	1:1	1:1
Specimen condition before test:	As Received	As Received	As Received	As Received	As Received
Distance $D$	60	67	65	70	69
Test Duration:	55	2	8	19	19
Failure Load: $P$ kN	0.43	0.23	0.46	1.93	1.98
Point load strength $I_s$	1.1	0.3	0.6	2.5	2.6
Size correction Factor $F$	1.36	1.22	1.20	1.24	1.23
Corrected point load strength $I_s (50)$	1.5	0.4	0.7	3.0	3.2
Specimen position	Parallel	Parallel	Parallel	Parallel	Parallel
Failure mode:	Satisfactory	Unsatisfactory	Unsatisfactory	Satisfactory	Satisfactory

Sample description:	Samples tested Diametral, Sample Number 8 tested as a lump
Remarks/Deviations from Suggested method:	Nil

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## Laboratory Test Certificate

### Determination of Point load strength ISRM Suggested Methods

Client Name: J&P AVAX S.A.	Date of sampling: 15/09/2014	Certificate no: 7
Client address: 29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test: 23/09/2014	Date of certificate: 24-Sep-2014
Attn: Sfakianakis Costantinos	Project: Onshore & Offshore Geotechnical Investigation	Job no: J2094
Client Tel No: 306972019434	Location/Town: Delimara	Test reference no: PointLoad007
		Tested by: LS

Sampling Location / Borehole Reference: G9	Calibration data of equipment: 17/06/2014	Grinding machine No: 135
Type of Drilling equipment used: Mobile Drill	Tested in Laboratory/In Situ Laboratory	Cutting machine No: 132
Type of Corebarrel used: T2-86		Sample selected by: LS

#### Test Details

Sample No:	PLT	13	PLT		PLT		PLT		PLT	
Storage condition of sample:	Sealed until tested									
Water content of specimen:	17.72									
Specimen In situ orientation:	Perpendicular									
Depth:	24.6m									
Run No:	6									

#### Test Details

Date of Test:	23/09/2014				
Diameter: (mm)	68.8				
Length: W (mm)	71.01				
Area $D_e$	79				
Length / diameter ratio:	1:1				
Specimen condition before test:	As Received				
Distance $D$	68				
Test Duration:	16				
Failure Load: $P$ kN	1.5				
Point load strength $I_s$	2.0				
Size correction Factor $F$	1.23				
Corrected point load strength $I_s$ (50)	2.4				
Specimen position	Parallel				
Failure mode:	Satisfactory				

Sample description:	Sample tested Diametral
Remarks/Deviations from Suggested method:	Nil



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Filename: J2094\_Rock\_Pointload\_Report007.xls

## Laboratory Test Certificate

### Determination of Point load strength ISRM Suggested Methods

Client Name: J&P AVAX S.A.	Date of sampling: 15/09/2014	Certificate no: 8
Client address: 29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test: 23/09/2014	Date of certificate: 24-Sep-2014
Attn: Sfakianakis Constantinou	Project: Onshore & Offshore Geotechnical Investigation	Job no: J2094
Client Tel No: 306972019434	Location/Town: Delimara	Test reference no: PointLoad008
		Tested by: LS

Sampling Location / Borehole Reference: G9	Calibration data of equipment: 17/06/2014	Grinding machine No: 135
Type of Drilling equipment used: Mobile Drill	Tested in Laboratory/In Situ Laboratory	Cutting machine No: 132
Type of Corebarrel used: T2-86		Sample selected by: LS

Test Details										
Sample No:	PLT	9	PLT	10	PLT	11	PLT	12	PLT	13
Storage condition of sample:	Sealed until tested		Sealed until tested		Sealed until tested		Sealed until tested		Sealed until tested	
Water content of specimen:	17.57		18.99		16.28		16.13		17.72	
Specimen In situ orientation:	Perpendicular		Perpendicular		Perpendicular		Perpendicular		Perpendicular	
Depth:	15.4m		14.4m		18.3m		21.5m		24.6m	
Run No:	3		3		4		5		6	

Test Details					
Date of Test:	23/09/2014	23/09/2014	23/09/2014	41905	41905
Diameter: (mm)	68.37	66.66	70.88	69.75	68.72
Length: W (mm)	36.15	66.38	36.33	29.05	32.45
Area $D_e$	56	75	57	51	53
Length / diameter ratio:	2:1	2:1	2:1	2:1	2:1
Specimen condition before test:	As Received	As Received	As Received	As Received	As Received
Distance $D$	35	65	33	28	34
Test Duration:	21	8	12	14	20
Failure Load: $P$ kN	0.78	0.6	1.7	1.51	1.4
Point load strength $I_s$	0.5	0.8	1.1	0.8	0.8
Size correction Factor $F$	1.05	1.20	1.06	1.01	1.03
Corrected point load strength $I_s$ (50)	0.6	0.9	1.2	0.8	0.9
Specimen position	Perpendicular	Perpendicular	Perpendicular	Perpendicular	Perpendicular
Failure mode:	Unsatisfactory	Unsatisfactory	Satisfactory	Satisfactory	Satisfactory
Sample description:	Samples tested Axial				
Remarks/Deviations from Suggested method:	Nil				



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Filename: J2094\_Rock\_Pointload\_Report008.xls

## Laboratory Test Certificate

### Determination of Point load strength ISRM Suggested Methods

Client Name: J&P AVAX S.A.	Date of sampling: 12/09/2014	Certificate no: 4
Client address: 29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test: 23/09/2014	Date of certificate: 24-Sep-2014
Attn: Sfakianakis Costantinos	Project: Onshore & Offshore Geotechnical Investigation	Job no: J2094
Client Tel No: 306972019434	Location/Town: Delimara	Test reference no: PointLoad004
		Tested by: LS

Sampling Location / Borehole Reference: G10	Calibration data of equipment: 17/06/2014	Grinding machine No: 135
Type of Drilling equipment used: Mobile Drill	Tested in Laboratory/In Situ Laboratory	Cutting machine No: 132
Type of Corebarrel used: T2-86		Sample selected by: LS

Test Details									
Sample No:	PLT	1	PLT	2	PLT	3	PLT	5	PLT
Storage condition of sample:	Sealed until tested		Sealed until tested		Sealed until tested		Sealed until tested		
Water content of specimen:	19.9		16.55		15.69		15.41		
Specimen In situ orientation:	Perpendicular		Perpendicular		Perpendicular		Perpendicular		
Depth:	13.9m		14.7m		16.2m		21.5m		
Run No:	3		3		4		5		

Test Details					
Date of Test:	23/09/2014	23/09/2014	23/09/2014	23/09/2014	
Diameter: (mm)	69.1	69.89	69.49	69.46	
Length: W (mm)	70.35	70.43	70.31	70.32	
Area $D_e$	79	79	79	79	
Length / diameter ratio:	1:1	1:1	1:1	1:1	
Specimen condition before test:	As Received	As Received	As Received	As Received	
Distance $D$	68	69	69	69	
Test Duration:	10	20	17	10	
Failure Load: $P$ kN	0.14	1.11	1.3	1.92	
Point load strength $I_s$	0.2	1.4	1.7	2.5	
Size correction Factor $F$	1.23	1.23	1.23	1.23	
Corrected point load strength $I_s$ (50)	0.2	1.8	2.1	3.0	
Specimen position	Parallel	Parallel	Parallel	Parallel	
Failure mode:	Satisfactory	Satisfactory	Satisfactory	Satisfactory	
Sample description:	Samples tested Diametral				
Remarks/Deviations from Suggested method:	Nil				

 <b>Chris Magro</b> Laboratory Manager	<h2 style="margin: 0;">TEST CERTIFICATE</h2> <p style="margin: 0; font-size: small;">This document can only be reproduced in its entirety without revision and with written authorisation from Terracore Ltd</p>
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 Plot 23, New Street in Caper Street, Mosta Industrial Estate, MST4003.  
 T: (+356) 21583241 F: (+356) 21418645  
 E: info@terracoiremalta.com W: www.terracoiremalta.com

Registration No.: C32227  
 Directors: Alfred Xerri  
 Filename: J2094\_Rock\_Pointload\_Report004.xls

## Laboratory Test Certificate

### Determination of Point load strength ISRM Suggested Methods

Client Name: J&P AVAX S.A.	Date of sampling: 12/09/2014	Certificate no: 5
Client address: 29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test: 23/09/2014	Date of certificate: 24-Sep-2014
Attn: Sfakianakis Constantinou	Project: Onshore & Offshore Geotechnical Investigation	Job no: J2094
Client Tel No: 306972019434	Location/Town: Delimara	Test reference no: PointLoad005
		Tested by: LS

Sampling Location / Borehole Reference: G10	Calibration data of equipment: 17/06/2014	Grinding machine No: 135
Type of Drilling equipment used: Mobile Drill	Tested in Laboratory/In Situ Laboratory	Cutting machine No: 132
Type of Corebarrel used: T2-86		Sample selected by: LS

Test Details									
Sample No:	PLT	2	PLT	3	PLT	5	PLT		PLT
Storage condition of sample:	Sealed until tested		Sealed until tested		Sealed until tested				
Water content of specimen:	16.55		15.69		15.41				
Specimen In situ orientation:	Perpendicular		Perpendicular		Perpendicular				
Depth:	14.7m		16.2m		21.5m				
Run No:	3		4		5				

Test Details					
Date of Test:	23/09/2014	23/09/2014	23/09/2014		
Diameter: (mm)	69.92	69.74	69.29		
Length: W (mm)	28.08	36.14	34.1		
Area $D_e$	50	57	55		
Length / diameter ratio:	2:1	2:1	2:1		
Specimen condition before test:	As Received	As Received	As Received		
Distance $D$	27	36	34		
Test Duration:	13	16	19		
Failure Load: $P$ kN	0.98	0.98	1.87		
Point load strength $I_s$	0.5	0.6	1.2		
Size correction Factor $F$	1.00	1.06	1.04		
Corrected point load strength $I_s$ (50)	0.5	0.7	1.2		
Specimen position	Perpendicular	Perpendicular	Perpendicular		
Failure mode:	Satisfactory	Satisfactory	Satisfactory		
Sample description:	Samples tested Axial				
Remarks/Deviations from Suggested method:	Nil				

 <b>Chris Magro</b> Laboratory Manager	<h2 style="color: orange; margin: 0;">TEST CERTIFICATE</h2> <p style="font-size: small; margin: 0;">This document can only be reproduced in its entirety without revision and with written authorisation from Terracore Ltd</p>
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Registration No.: C32227  
 Directors: Alfred Xerri  
 Filename: J2094\_Rock\_Pointload\_Report005.xls



## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

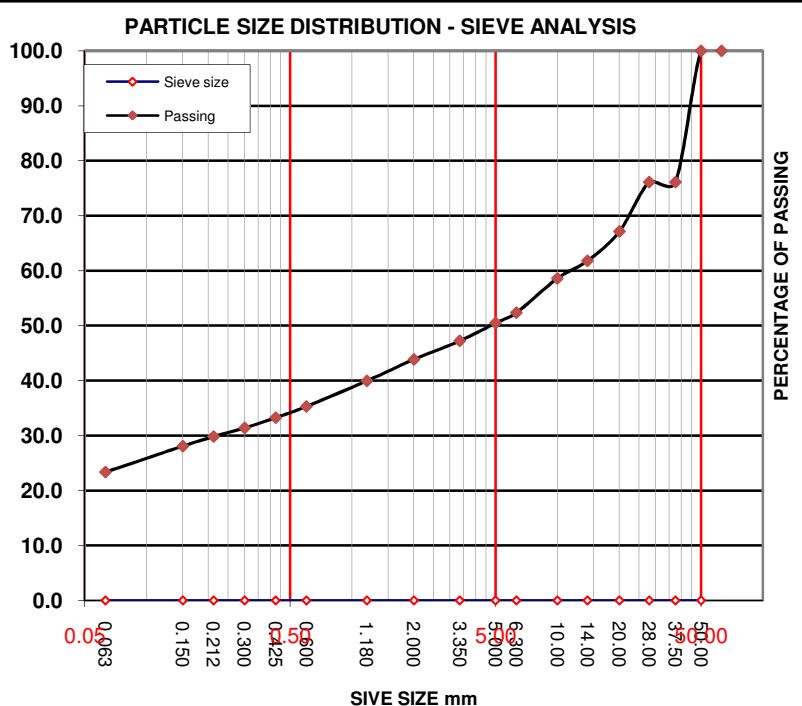
Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR156
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	13/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test reference no:	PSD049
				Tested by:	MH, LS
				Date of test:	13/10/2014

Sample Information:		Test Information:		
Sample ref N°:	140930 - G1	Initial mass of sample as received:	572.8	g
Sampling location:	BH G1 Sample 3	Mass of dry sample before washing:	457.3	g
Sample description:	Soil	Mass of dry sample after washing:	352.2	g
Date of sampling:	30/09/2014	Moisture content:	25.26	%
Type of material:	Soil	Silt content:	23.29	%
		Mass of sample for grading:	457.3	g

### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	109.2	23.9	76.12
28.000	0.0	0.0	76.12
20.000	41.1	9.0	67.13
14.000	24.6	5.4	61.75
10.000	14.5	3.2	58.58
6.300	28.4	6.2	52.37
5.000	8.7	1.9	50.47
3.350	15.0	3.3	47.19
2.000	15.4	3.4	43.82
1.180	17.7	3.9	39.95
0.600	21.3	4.7	35.29
0.425	9.3	2.0	33.26
0.300	8.6	1.9	31.38
0.212	7.3	1.6	29.78
0.150	7.9	1.7	28.06
0.063	21.6	4.7	23.33

Pan 106.5  
Total 457.3



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
 Jessica Farrugia Quality Manager	 Chris Magro Laboratory Manager

## TEST CERTIFICATE

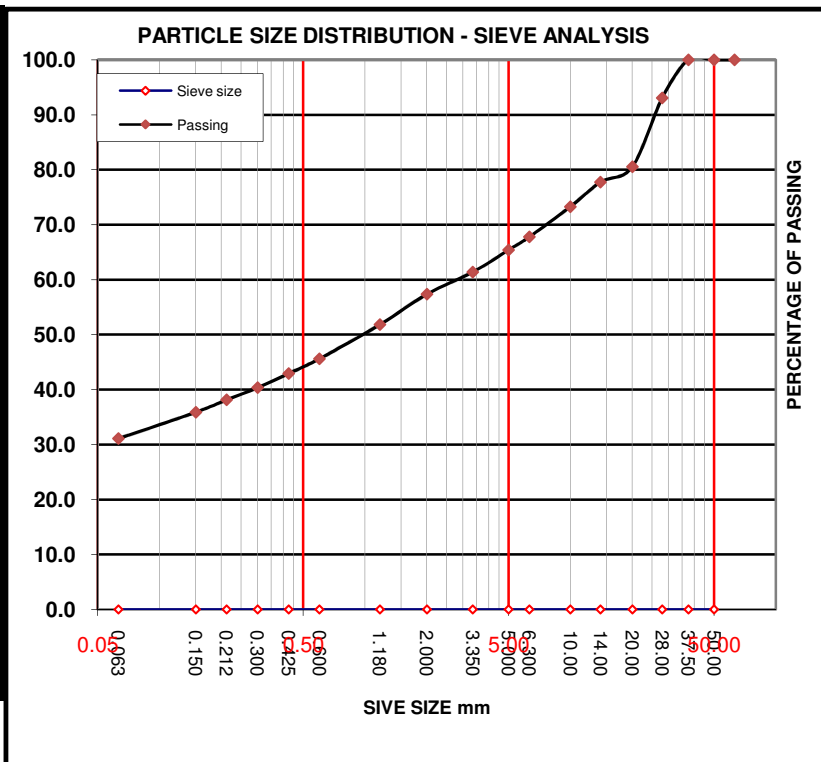
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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR157
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	13/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test reference no:	PSD050
				Tested by:	MH, LS
				Date of test:	13/10/2014

Sample Information:	Test Information:
Sample ref N°:	140930 - G1
Sampling location:	BH G1 Sample 4
Sample description:	Soil
Date of sampling:	30/09/2014
Type of material:	Soil
	Initial mass of sample as received: 509.1 g
	Mass of dry sample before washing: 390.4 g
	Mass of dry sample after washing: 270.3 g
	Moisture content: 30.40 %
	Silt content: 31.07 %
	Mass of sample for grading: 390.4 g

Results:			
Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	27.1	6.9	93.06
20.000	48.9	12.5	80.53
14.000	11.0	2.8	77.72
10.000	17.3	4.4	73.28
6.300	21.5	5.5	67.78
5.000	9.2	2.4	65.42
3.350	15.8	4.0	61.37
2.000	15.7	4.0	57.35
1.180	21.7	5.6	51.79
0.600	24.2	6.2	45.59
0.425	10.4	2.7	42.93
0.300	10.1	2.6	40.34
0.212	8.7	2.2	38.11
0.150	8.7	2.2	35.89
0.063	18.7	4.8	31.10
Pan	121.3		
Total	390.4		



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

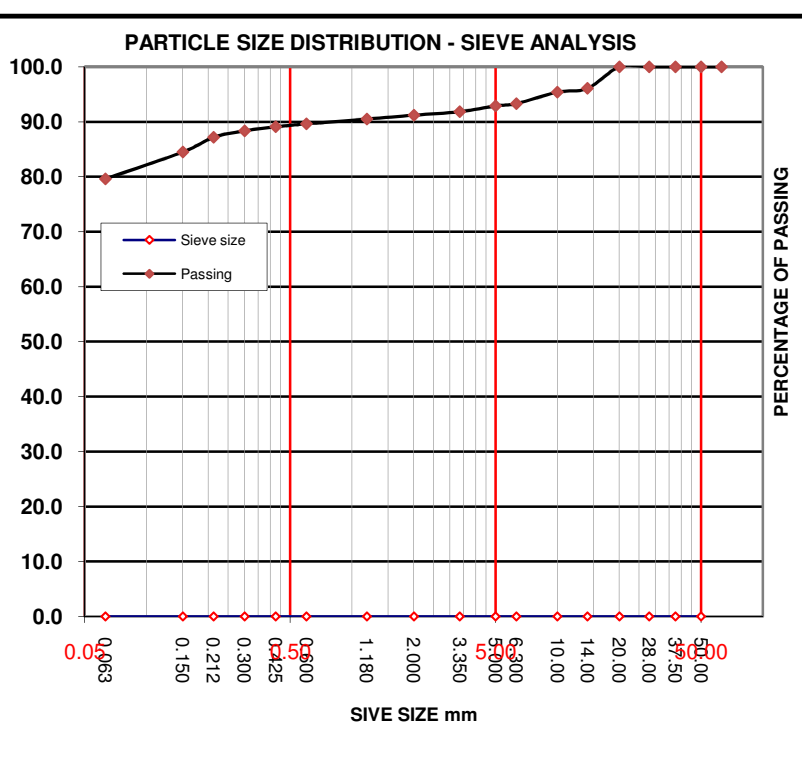
Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR158
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	13/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test reference no:	PSD051
				Tested by:	MH, LS
				Date of test:	13/10/2014

Sample Information:		Test Information:		
Sample ref N°:	140930 - G1	Initial mass of sample as received:	556.0	g
Sampling location:	BH G1 Sample 6	Mass of dry sample before washing:	455.8	g
Sample description:	Soil	Mass of dry sample after washing:	93.9	g
Date of sampling:	30/09/2014	Moisture content:	21.98	%
Type of material:	Soil	Silt content:	79.57	%
		Mass of sample for grading:	455.8	g



### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	17.9	3.9	96.07
10.000	3.1	0.7	95.39
6.300	9.5	2.1	93.31
5.000	1.8	0.4	92.91
3.350	4.9	1.1	91.84
2.000	3.0	0.7	91.18
1.180	3.1	0.7	90.50
0.600	4.1	0.9	89.60
0.425	2.3	0.5	89.10
0.300	3.3	0.7	88.37
0.212	5.4	1.2	87.19
0.150	12.3	2.7	84.49
0.063	22.2	4.9	79.62

Pan 362.7  
Total 455.8



<b>Deviation from Standard:</b>	<b>Remarks:</b>
Nil	Nil

<b>Prepared By:</b>	<b>Approved By:</b>
	
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

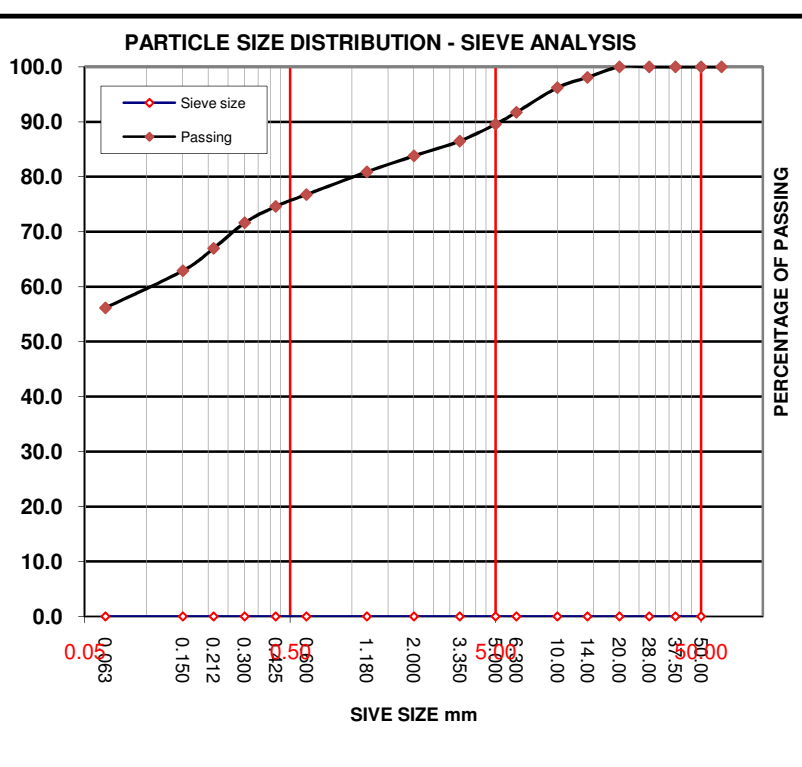
Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR159
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	13/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test reference no:	PSD052
				Tested by:	MH, LS
				Date of test:	13/10/2014

Sample Information:	Test Information:
Sample ref N°:	140930 - G1
Sampling location:	BH G1 Sample 7
Sample description:	Soil
Date of sampling:	30/09/2014
Type of material:	Soil
	Initial mass of sample as received: 574.6 g
	Mass of dry sample before washing: 469.0 g
	Mass of dry sample after washing: 207.5 g
	Moisture content: 22.52 %
	Silt content: 56.10 %
	Mass of sample for grading: 469.0 g

### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	9.1	1.9	98.06
10.000	8.8	1.9	96.18
6.300	20.9	4.5	91.73
5.000	10.2	2.2	89.55
3.350	14.3	3.0	86.50
2.000	12.7	2.7	83.80
1.180	13.6	2.9	80.90
0.600	19.3	4.1	76.78
0.425	10.2	2.2	74.61
0.300	14.1	3.0	71.60
0.212	21.7	4.6	66.97
0.150	19.1	4.1	62.90
0.063	31.8	6.8	56.12

Pan 263.1  
Total 469.0



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
 Jessica Farrugia Quality Manager	 Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

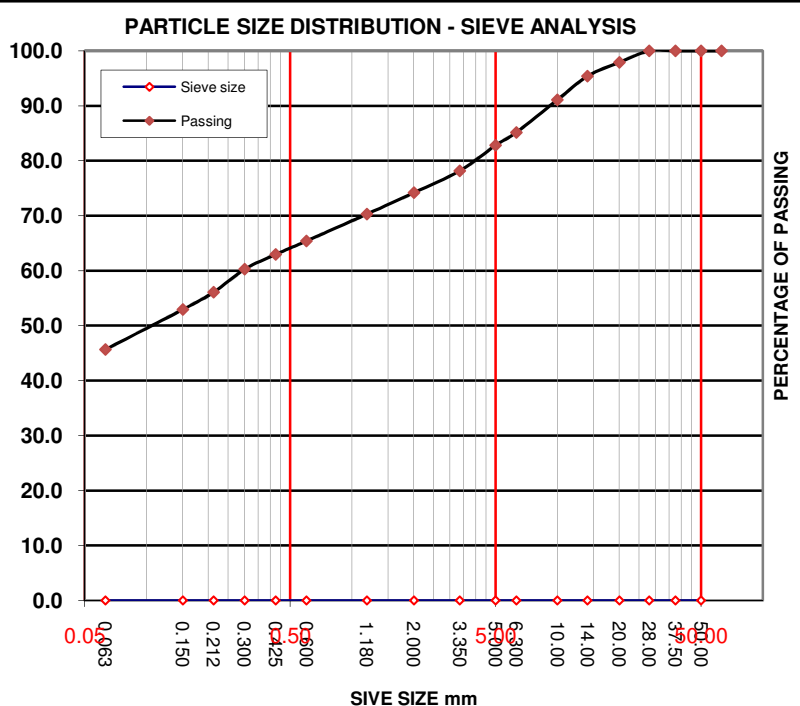
Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR160
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	13/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test reference no:	PSD053
				Tested by:	MH, LS
				Date of test:	13/10/2014

Sample Information:	Test Information:
Sample ref N°:	140930 - G1
Sampling location:	BH G1 Sample 11
Sample description:	Soil
Date of sampling:	30/09/2014
Type of material:	Soil
	Initial mass of sample as received: 521.5 g
	Mass of dry sample before washing: 441.0 g
	Mass of dry sample after washing: 241.2 g
	Moisture content: 18.25 %
	Silt content: 45.53 %
	Mass of sample for grading: 441.0 g

### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	9.2	2.1	97.91
14.000	11.0	2.5	95.42
10.000	19.0	4.3	91.11
6.300	26.2	5.9	85.17
5.000	10.5	2.4	82.79
3.350	20.5	4.6	78.14
2.000	17.4	3.9	74.20
1.180	17.3	3.9	70.27
0.600	21.6	4.9	65.37
0.425	10.8	2.4	62.93
0.300	11.8	2.7	60.25
0.212	18.3	4.1	56.10
0.150	14.0	3.2	52.93
0.063	32.0	7.3	45.67

Pan 200.8  
Total 441.0



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR280
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Geotechnical Investigation		Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test reference no:	PSD070
				Tested by:	LS
				Date of test:	10/20/2014

### Sample Information:

Sample ref Nº: 1410930 - G1  
Sampling location: BH G1 Sample 8  
Sample description: Soil  
Date of sampling: 9/30/2014  
Type of material: Soil

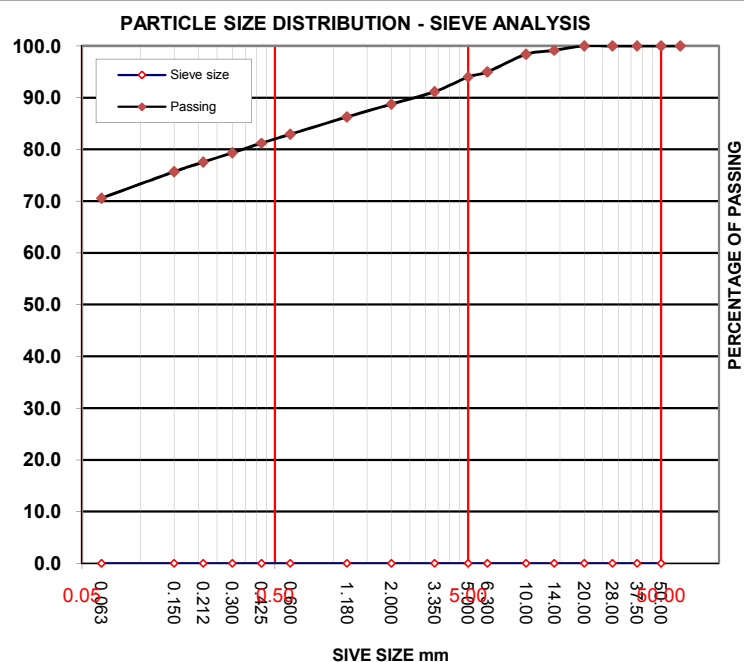
### Test Information:

Initial mass of sample as received: 609.8 g  
Mass of dry sample before washing: 480.0 g  
Mass of dry sample after washing: 144.3 g  
Moisture content: 27.04 %  
Silt content: 70.27 %  
Mass of sample for grading: 480.0 g

### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	4.0	0.8	99.17
10.000	3.8	0.8	98.38
6.300	16.2	3.4	95.00
5.000	4.9	1.0	93.98
3.350	13.5	2.8	91.17
2.000	11.6	2.4	88.75
1.180	12.0	2.5	86.25
0.600	16.0	3.3	82.92
0.425	8.1	1.7	81.23
0.300	9.0	1.9	79.35
0.212	8.6	1.8	77.56
0.150	9.0	1.9	75.69
0.063	24.6	5.1	70.56

Pan 337.3  
Total 480.0



### Deviation from Standard:

Nil

### Remarks:

Nil

### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

### Approved By:

*Chris Magro*

Chris Magro  
Laboratory Manager

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Directors: Alfred Xerri

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR281
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test reference no:	PSD071
				Tested by:	LS
				Date of test:	10/20/2014

### Sample Information:

Sample ref Nº: 1410930 - G1  
Sampling location: BH G1 Sample 15  
Sample description: Soil  
Date of sampling: 9/30/2014  
Type of material: Soil

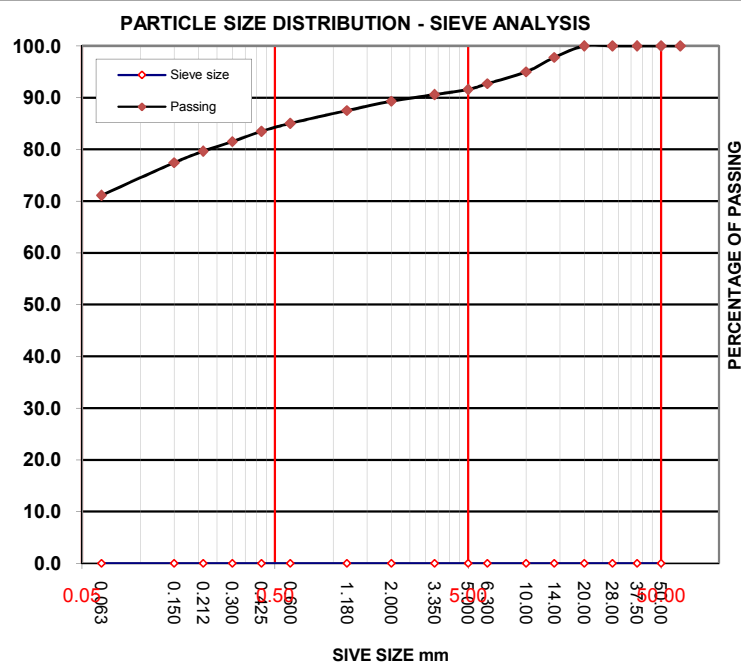
### Test Information:

Initial mass of sample as received: 474.1 g  
Mass of dry sample before washing: 387.6 g  
Mass of dry sample after washing: 114.8 g  
Moisture content: 22.32 %  
Silt content: 70.69 %  
Mass of sample for grading: 387.6 g

### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	8.5	2.2	97.81
10.000	10.8	2.8	95.02
6.300	8.9	2.3	92.72
5.000	4.4	1.1	91.59
3.350	3.8	1.0	90.61
2.000	5.0	1.3	89.32
1.180	6.9	1.8	87.54
0.600	9.7	2.5	85.04
0.425	6.1	1.6	83.46
0.300	7.5	1.9	81.53
0.212	7.3	1.9	79.64
0.150	8.5	2.2	77.45
0.063	24.6	6.3	71.10

Pan 274  
Total 387.6



### Deviation from Standard:

Nil

### Remarks:

Nil

### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

### Approved By:

*Chris Magro*

Chris Magro  
Laboratory Manager

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Registration No.: C32227

Directors: Alfred Xerri

Filename: J2094\_Soil\_TCR281\_PSD071.xls

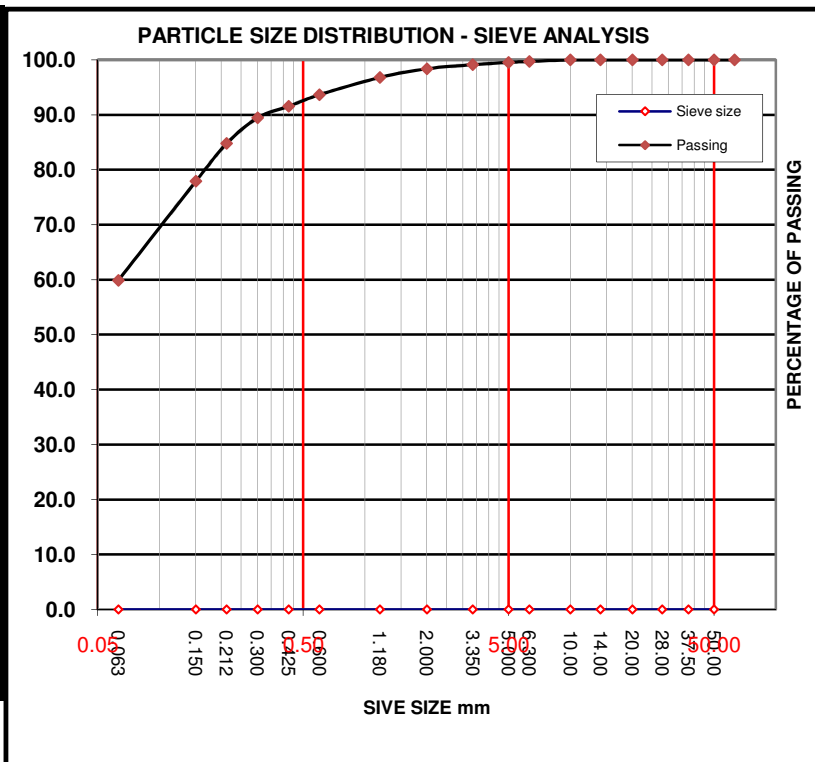


## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2



Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR164
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	13/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test reference no:	PSD054
				Tested by:	MH, LS
				Date of test:	13/10/2014

Sample Information:	Test Information:
Sample ref N°:	141001 - G2
Sampling location:	BH G2 Sample 6
Sample description:	Soil
Date of sampling:	01/10/2014
Type of material:	Soil
	Initial mass of sample as received: 568.7 g
	Mass of dry sample before washing: 336.4 g
	Mass of dry sample after washing: 136.0 g
	Moisture content: 69.05 %
	Silt content: 59.84 %
	Mass of sample for grading: 336.4 g

Results:			
Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	0.0	0.0	100.00
10.000	0.0	0.0	100.00
6.300	1.0	0.3	99.70
5.000	0.5	0.1	99.55
3.350	1.5	0.4	99.11
2.000	2.4	0.7	98.39
1.180	5.4	1.6	96.79
0.600	10.6	3.2	93.64
0.425	7.0	2.1	91.56
0.300	7.0	2.1	89.48
0.212	15.8	4.7	84.78
0.150	23.1	6.9	77.91
0.063	60.8	18.1	59.84
Pan	201.3		
Total	336.4		



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
 Jessica Farrugia Quality Manager	 Chris Magro Laboratory Manager

## TEST CERTIFICATE

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

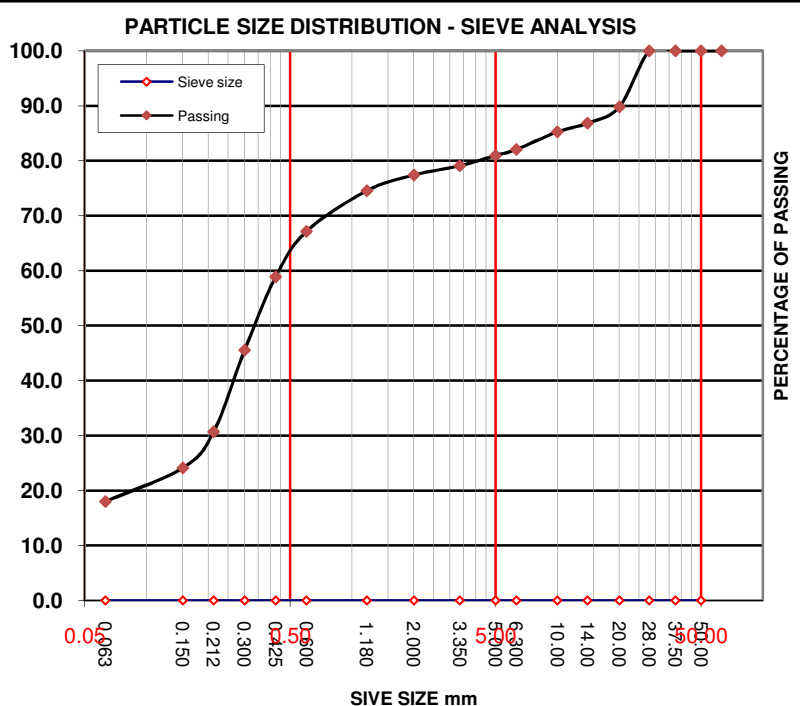
Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR165
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	13/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test reference no:	PSD055
				Tested by:	MH, LS
				Date of test:	13/10/2014

Sample Information:	Test Information:
Sample ref N°:	141001 - G2
Sampling location:	BH G2 Sample 7
Sample description:	Soil
Date of sampling:	01/10/2014
Type of material:	Soil
	Initial mass of sample as received: 631.5 g
	Mass of dry sample before washing: 519.7 g
	Mass of dry sample after washing: 427.1 g
	Moisture content: 21.51 %
	Silt content: 17.91 %
	Mass of sample for grading: 519.7 g

### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	53.1	10.2	89.78
14.000	15.4	3.0	86.82
10.000	8.0	1.5	85.28
6.300	16.9	3.3	82.03
5.000	5.5	1.1	80.97
3.350	9.7	1.9	79.10
2.000	8.8	1.7	77.41
1.180	14.8	2.8	74.56
0.600	38.5	7.4	67.15
0.425	43.1	8.3	58.86
0.300	69.2	13.3	45.55
0.212	77.3	14.9	30.67
0.150	34.1	6.6	24.11
0.063	32.0	6.2	17.95

Pan 93.1  
Total 519.7



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

## TEST CERTIFICATE

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR166
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	13/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test reference no:	PSD056
				Tested by:	MH, LS
				Date of test:	13/10/2014

### Sample Information:

Sample ref N°: 141001 - G2  
Sampling location: BH G2 Sample 9  
Sample description: Soil  
Date of sampling: 01/10/2014  
Type of material: Soil

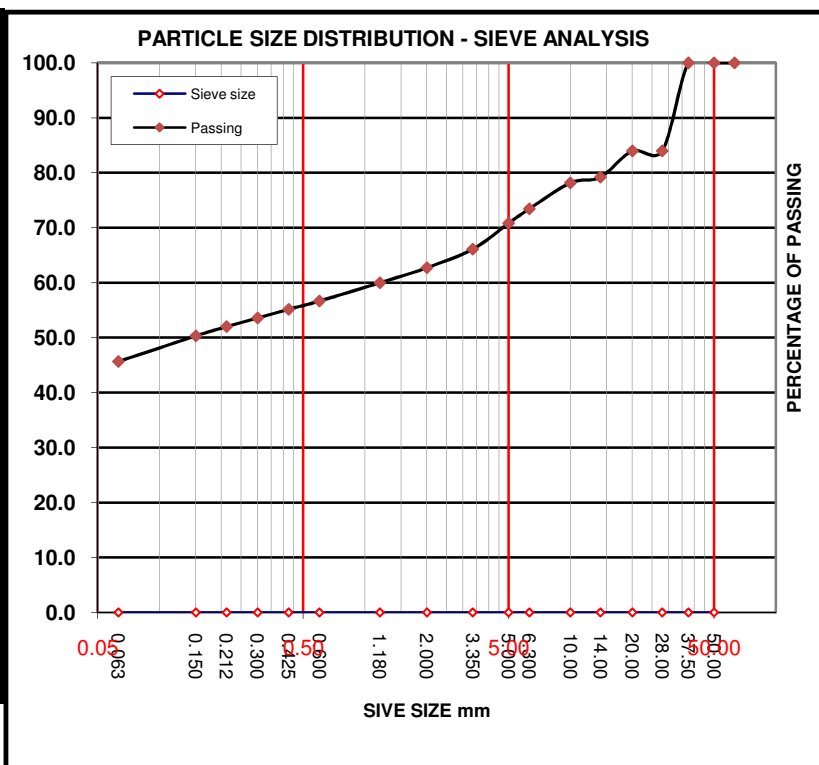
### Test Information:

Initial mass of sample as received: 704.4 g  
Mass of dry sample before washing: 571.8 g  
Mass of dry sample after washing: 312.2 g  
Moisture content: 23.19 %  
Silt content: 45.63 %  
Mass of sample for grading: 571.8 g

### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	91.5	16.0	84.00
20.000	0.0	0.0	84.00
14.000	27.3	4.8	79.22
10.000	6.0	1.0	78.17
6.300	27.1	4.7	73.43
5.000	15.1	2.6	70.79
3.350	26.9	4.7	66.09
2.000	19.4	3.4	62.70
1.180	15.7	2.7	59.95
0.600	19.0	3.3	56.63
0.425	8.5	1.5	55.14
0.300	9.1	1.6	53.55
0.212	9.0	1.6	51.98
0.150	9.7	1.7	50.28
0.063	26.5	4.6	45.65

Pan 260.9  
Total 571.8



### Deviation from Standard:

Nil

### Remarks:

Nil

### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

### Approved By:

*Chris Magro*

Chris Magro  
Laboratory Manager

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Terracore Ltd,

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Registration No.: C32227

Directors: Alfred Xerri

Filename: J2094\_Soil\_TCR166\_PSD056.xls

## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

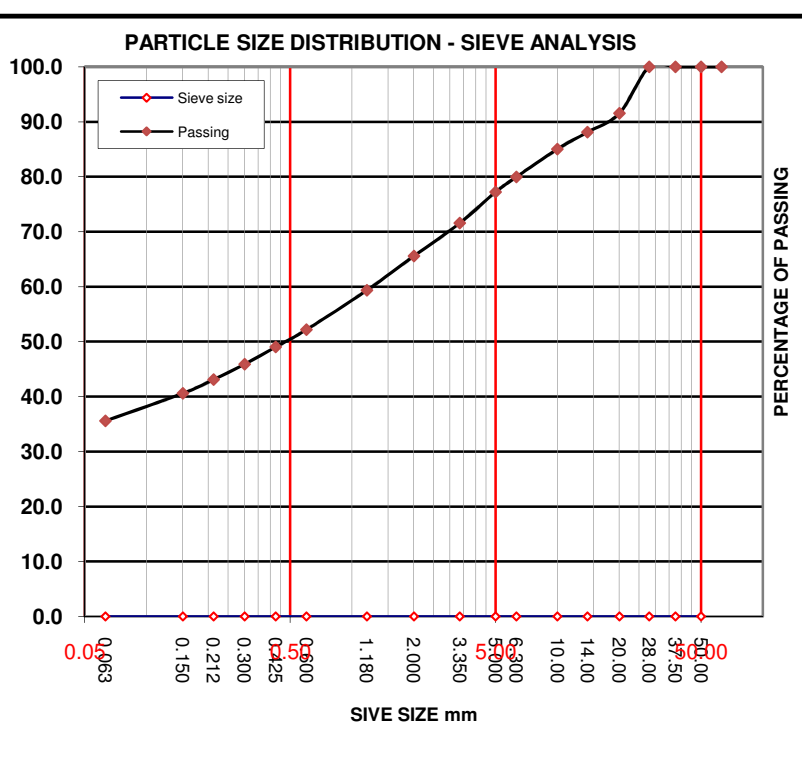
Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR167
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	13/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test reference no:	PSD057
				Tested by:	MH, LS
				Date of test:	13/10/2014

Sample Information:		Test Information:		
Sample ref N°:	141001 - G2	Initial mass of sample as received:	635.6	g
Sampling location:	BH G2 Sample 12	Mass of dry sample before washing:	513.2	g
Sample description:	Soil	Mass of dry sample after washing:	331.4	g
Date of sampling:	01/10/2014	Moisture content:	23.85	%
Type of material:	Soil	Silt content:	35.58	%
		Mass of sample for grading:	513.2	g

### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	43.3	8.4	91.56
14.000	17.8	3.5	88.09
10.000	15.6	3.0	85.05
6.300	26.2	5.1	79.95
5.000	14.1	2.7	77.20
3.350	29.0	5.7	71.55
2.000	30.8	6.0	65.55
1.180	31.8	6.2	59.35
0.600	36.8	7.2	52.18
0.425	16.2	3.2	49.03
0.300	16.0	3.1	45.91
0.212	14.6	2.8	43.06
0.150	12.7	2.5	40.59
0.063	25.7	5.0	35.58

Pan 182.6  
Total 513.2



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

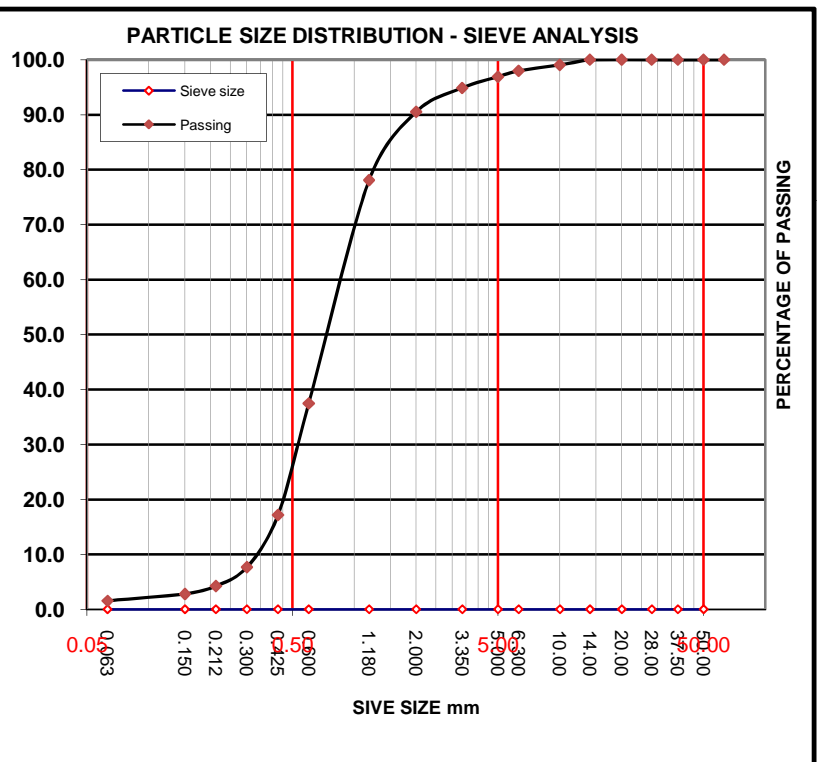
Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR234
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	17/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test reference no:	PSD068
				Tested by:	MH, LS
				Date of test:	17/10/2014

Sample Information:	Test Information:
Sample ref N°:	141001 - G2
Sampling location:	BH G2 Sample 2
Sample description:	Soil
Date of sampling:	01/10/2014
Type of material:	Soil
	Initial mass of sample as received: 462.8 g
	Mass of dry sample before washing: 413.1 g
	Mass of dry sample after washing: 407.6 g
	Moisture content: 12.03 %
	Silt content: 1.40 %
	Mass of sample for grading: 413.1 g

### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	0.0	0.0	100.00
10.000	3.9	0.9	99.06
6.300	4.5	1.1	97.97
5.000	4.4	1.1	96.90
3.350	8.4	2.0	94.87
2.000	18.0	4.4	90.51
1.180	51.3	12.4	78.09
0.600	167.9	40.6	37.45
0.425	83.9	20.3	17.14
0.300	39.2	9.5	7.65
0.212	14.2	3.4	4.21
0.150	5.9	1.4	2.78
0.063	5.2	1.3	1.53

Pan 5.8  
Total 413.1



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

## TEST CERTIFICATE

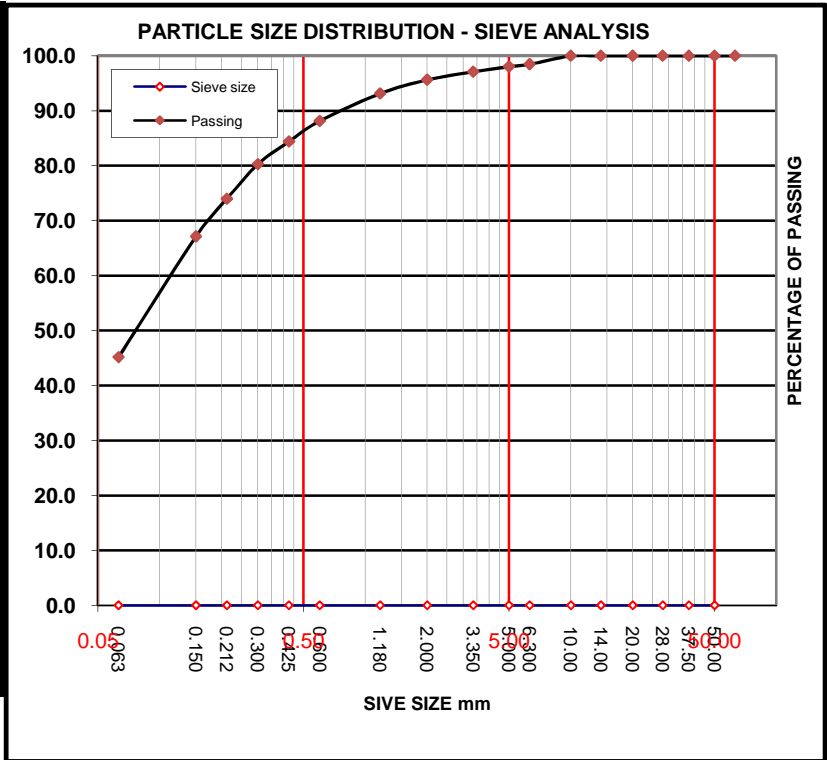
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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR235
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	17/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test reference no:	PSD069
				Tested by:	MH, LS
				Date of test:	17/10/2014

Sample Information:		Test Information:		
Sample ref Nº:	141001 - G2	Initial mass of sample as received:	532.9	g
Sampling location:	BH G2 Sample 4	Mass of dry sample before washing:	300.2	g
Sample description:	Soil	Mass of dry sample after washing:	172.8	g
Date of sampling:	01/10/2014	Moisture content:	77.51	%
Type of material:	Soil	Silt content:	45.10	%
		Mass of sample for grading:	300.2	g

Results:			
Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	0.0	0.0	100.00
10.000	0.0	0.0	100.00
6.300	4.6	1.5	98.47
5.000	1.3	0.4	98.03
3.350	2.8	0.9	97.10
2.000	4.4	1.5	95.64
1.180	7.5	2.5	93.14
0.600	15.0	5.0	88.14
0.425	11.2	3.7	84.41
0.300	12.4	4.1	80.28
0.212	18.9	6.3	73.98
0.150	20.5	6.8	67.16
0.063	66.0	22.0	45.17
Pan	135.4		
Total	300.2		



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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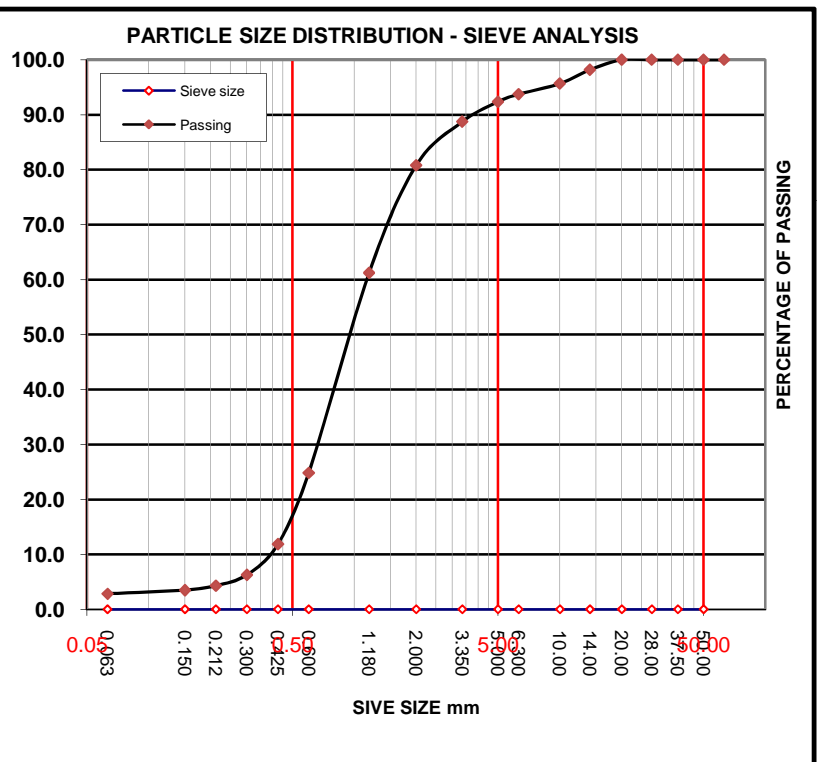
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Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	17/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test reference no:	PSD064
				Tested by:	MH, LS
				Date of test:	17/10/2014

Sample Information:		Test Information:		
Sample ref Nº:	141004 - G3	Initial mass of sample as received:	735.4	g
Sampling location:	BH G3 Sample 2	Mass of dry sample before washing:	556.6	g
Sample description:	Soil	Mass of dry sample after washing:	541.7	g
Date of sampling:	04/10/2014	Moisture content:	32.12	%
Type of material:	Soil	Silt content:	2.77	%
		Mass of sample for grading:	556.6	g

### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	10.1	1.8	98.19
10.000	14.0	2.5	95.67
6.300	10.8	1.9	93.73
5.000	7.6	1.4	92.36
3.350	20.2	3.6	88.74
2.000	44.2	7.9	80.79
1.180	108.9	19.6	61.23
0.600	202.6	36.4	24.83
0.425	72.2	13.0	11.86
0.300	31.1	5.6	6.27
0.212	11.0	2.0	4.29
0.150	4.5	0.8	3.49
0.063	3.7	0.7	2.82

Pan 15.4  
Total 556.6



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

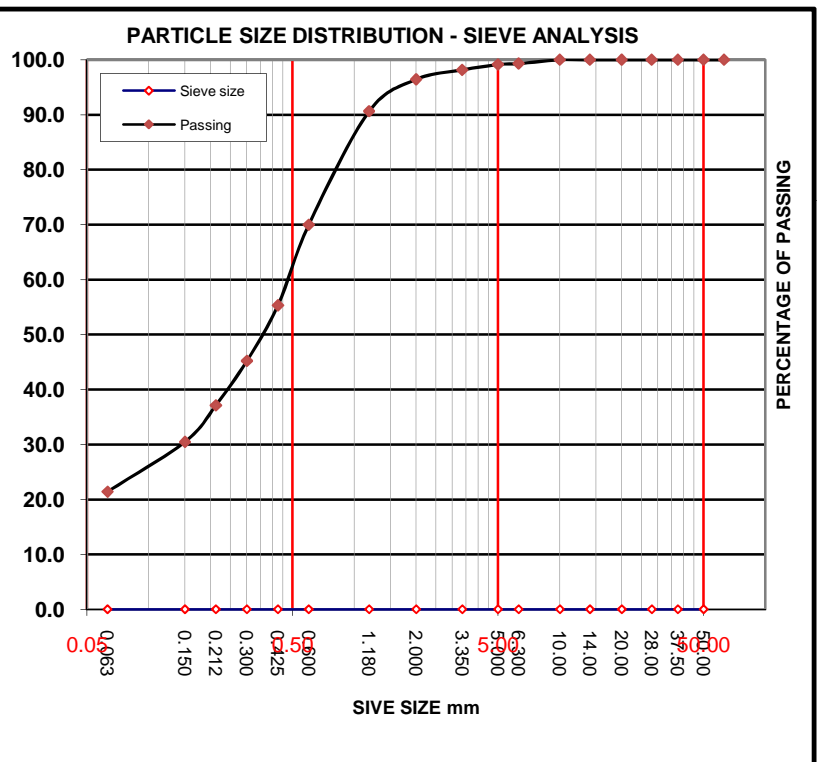
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Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	17/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test reference no:	PSD065
				Tested by:	MH, LS
				Date of test:	17/10/2014

Sample Information:		Test Information:		
Sample ref Nº:	141004 - G3	Initial mass of sample as received:	868.2	g
Sampling location:	BH G3 Sample 3	Mass of dry sample before washing:	562.7	g
Sample description:	Soil	Mass of dry sample after washing:	446.8	g
Date of sampling:	04/10/2014	Moisture content:	54.29	%
Type of material:	Soil	Silt content:	21.33	%
		Mass of sample for grading:	562.7	g

### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	0.0	0.0	100.00
10.000	0.0	0.0	100.00
6.300	3.9	0.7	99.31
5.000	1.0	0.2	99.13
3.350	5.5	1.0	98.15
2.000	9.7	1.7	96.43
1.180	32.6	5.8	90.63
0.600	116.3	20.7	69.97
0.425	82.5	14.7	55.30
0.300	56.8	10.1	45.21
0.212	45.6	8.1	37.11
0.150	37.4	6.6	30.46
0.063	51.0	9.1	21.40

Pan 120  
Total 562.7



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

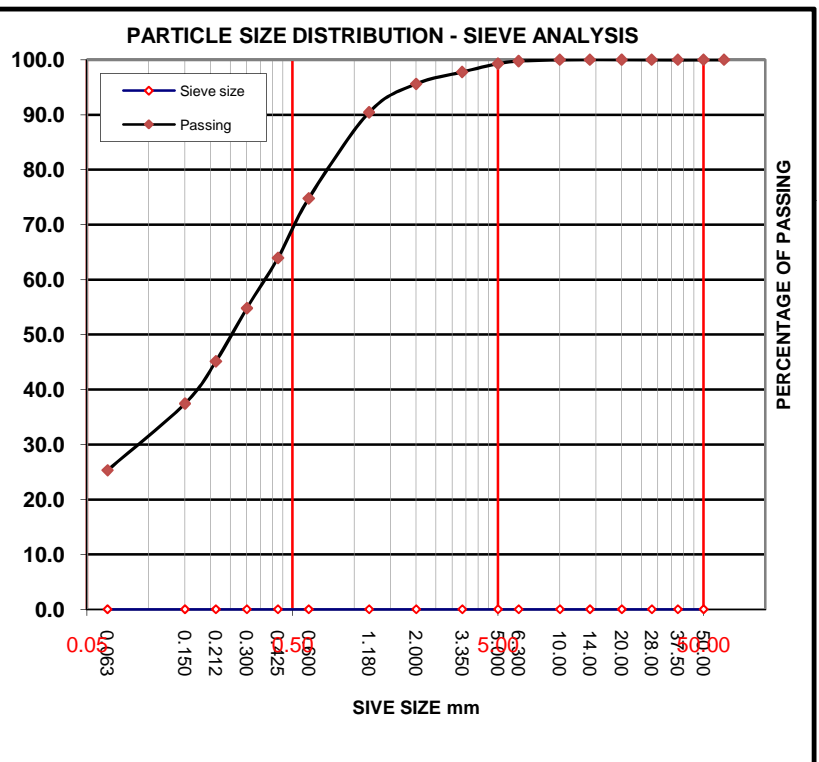
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Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	17/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test reference no:	PSD066
				Tested by:	MH, LS
				Date of test:	17/10/2014

Sample Information:		Test Information:		
Sample ref Nº:	141004 - G3	Initial mass of sample as received:	625.0	g
Sampling location:	BH G3 Sample 4	Mass of dry sample before washing:	387.9	g
Sample description:	Soil	Mass of dry sample after washing:	295.3	g
Date of sampling:	04/10/2014	Moisture content:	61.12	%
Type of material:	Soil	Silt content:	24.98	%
		Mass of sample for grading:	387.9	g

### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	0.0	0.0	100.00
10.000	0.0	0.0	100.00
6.300	1.0	0.3	99.74
5.000	1.8	0.5	99.28
3.350	5.9	1.5	97.76
2.000	8.4	2.2	95.59
1.180	20.0	5.2	90.44
0.600	60.8	15.7	74.76
0.425	42.0	10.8	63.93
0.300	35.4	9.1	54.81
0.212	37.5	9.7	45.14
0.150	29.9	7.7	37.43
0.063	47.0	12.1	25.32

Pan 96.9  
Total 387.9



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

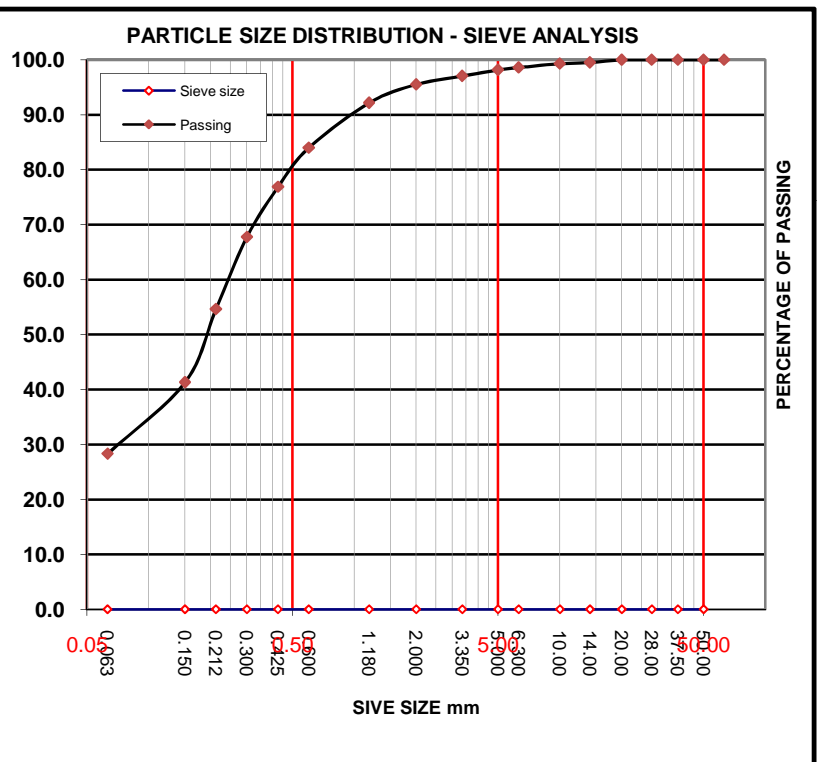
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Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	17/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test reference no:	PSD067
				Tested by:	MH, LS
				Date of test:	17/10/2014

Sample Information:		Test Information:		
Sample ref Nº:	141004 - G3	Initial mass of sample as received:	599.7	g
Sampling location:	BH G3 Sample 5	Mass of dry sample before washing:	414.8	g
Sample description:	Soil	Mass of dry sample after washing:	301.1	g
Date of sampling:	04/10/2014	Moisture content:	44.58	%
Type of material:	Soil	Silt content:	28.21	%
		Mass of sample for grading:	414.8	g

### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	2.0	0.5	99.52
10.000	0.9	0.2	99.30
6.300	2.9	0.7	98.60
5.000	1.8	0.4	98.17
3.350	4.6	1.1	97.06
2.000	6.4	1.5	95.52
1.180	13.9	3.4	92.16
0.600	33.9	8.2	83.99
0.425	29.5	7.1	76.88
0.300	37.9	9.1	67.74
0.212	54.4	13.1	54.63
0.150	55.3	13.3	41.30
0.063	53.9	13.0	28.30

Pan 117  
Total 414.8



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

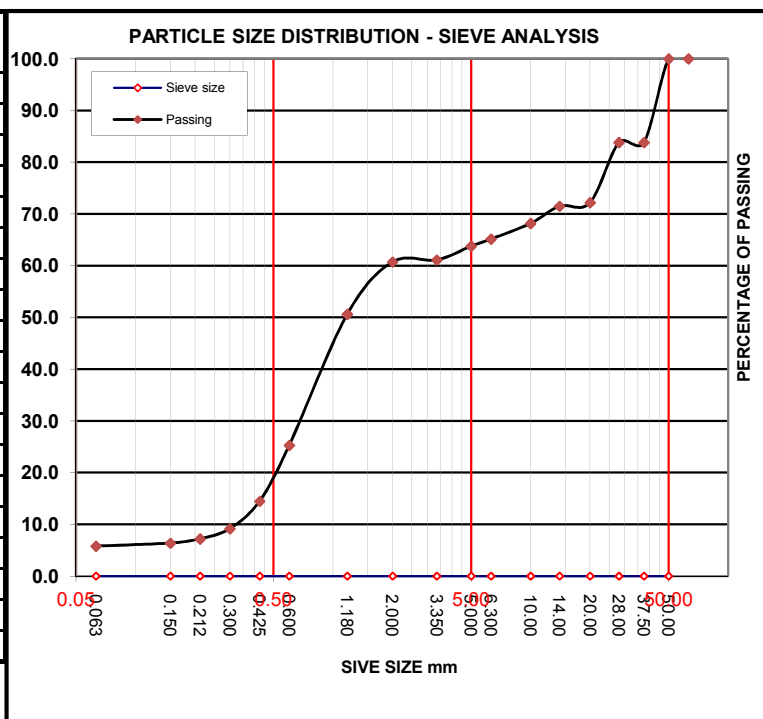
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Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	09/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test reference no:	PSD041
				Tested by:	MH, LS
				Date of test:	09/10/2014

Sample Information:		Test Information:	
Sample ref Nº:	140929 - G4	Initial mass of sample as received:	640.1 g
Sampling location:	BH G4 Sample 1	Mass of dry sample before washing:	524.4 g
Sample description:	Soil	Mass of dry sample after washing:	518.1 g
Date of sampling:	29/09/2014	Moisture content:	22.06 %
Type of material:	Soil	Silt content:	1.24 %
		Mass of sample for grading:	524.4 g



### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	84.8	16.2	83.83
28.000	0.0	0.0	83.83
20.000	61.0	11.6	72.20
14.000	3.7	0.7	71.49
10.000	17.4	3.3	68.17
6.300	15.9	3.0	65.14
5.000	7.2	1.4	63.77
3.350	14.0	2.7	61.10
2.000	2.0	0.4	60.72
1.180	53.0	10.1	50.61
0.600	133.0	25.4	25.25
0.425	56.6	10.8	14.45
0.300	27.9	5.3	9.13
0.212	10.3	2.0	7.17
0.150	4.3	0.8	6.35
0.063	3.1	0.6	5.76

Pan 6.5  
Total 524.4



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
	
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

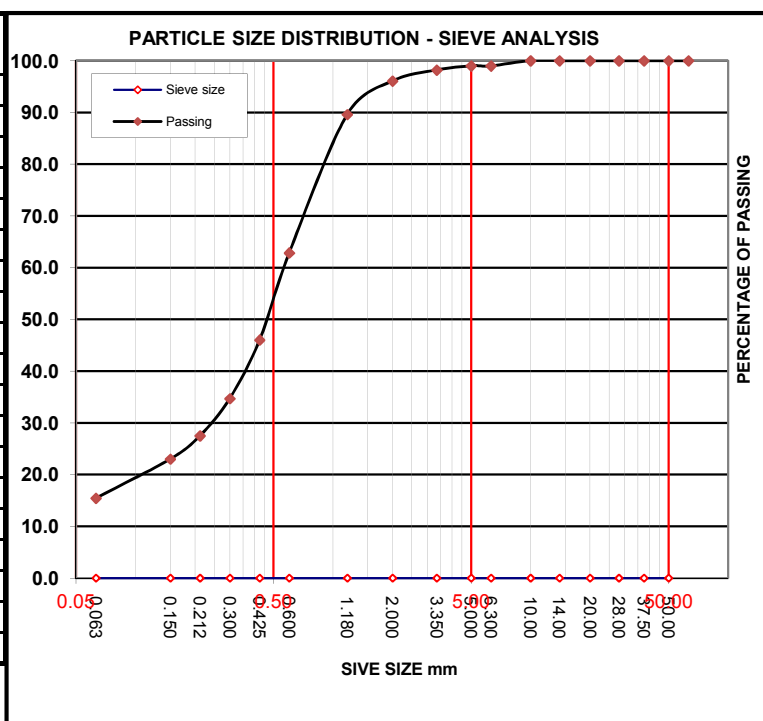
Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR122
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	09/10/2014
		Location/Town:	Delimara	Client/Job Nº:	J2094
Attn:	Giorgos Rousopoulos			Test reference no:	PSD042
Client Tel Nº:	306972019434			Tested by:	MH, LS
				Date of test:	09/10/2014

Sample Information:		Test Information:	
Sample ref Nº:	140929 - G4	Initial mass of sample as received:	621.0 g
Sampling location:	BH G4 Sample 3	Mass of dry sample before washing:	428.5 g
Sample description:	Soil	Mass of dry sample after washing:	365.2 g
Date of sampling:	29/09/2014	Moisture content:	44.92 %
Type of material:	Soil	Silt content:	15.40 %
		Mass of sample for grading:	428.5 g



### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	0.0	0.0	100.00
10.000	0.0	0.0	100.00
6.300	4.3	1.0	99.00
5.000	0.0	0.0	99.00
3.350	3.4	0.8	98.20
2.000	9.1	2.1	96.08
1.180	27.7	6.5	89.61
0.600	114.7	26.8	62.85
0.425	72.1	16.8	46.02
0.300	48.6	11.3	34.68
0.212	30.8	7.2	27.49
0.150	19.3	4.5	22.99
0.063	32.4	7.6	15.43

Pan 66  
Total 428.5



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
	
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

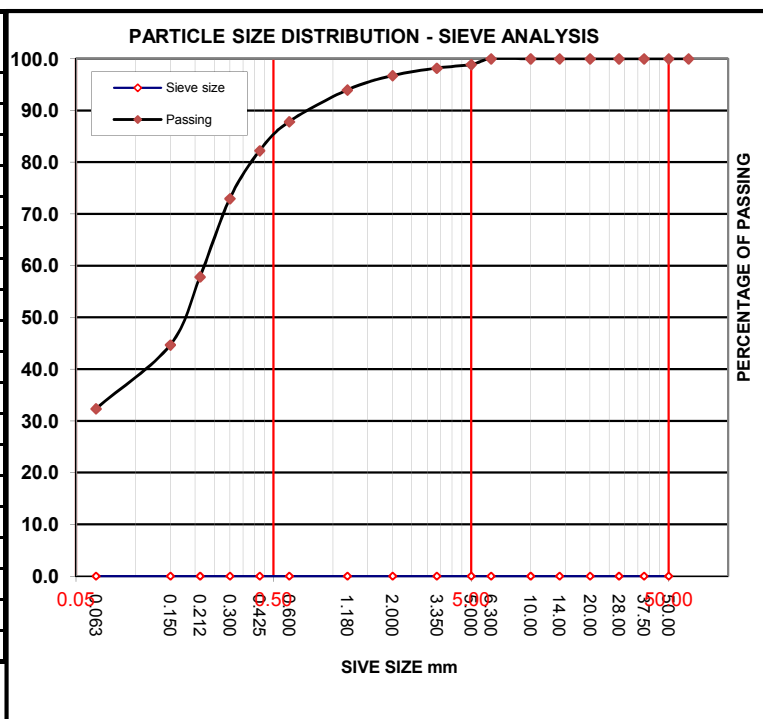
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Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	09/10/2014
		Location/Town:	Delimara	Client/Job Nº:	J2094
Attn:	Giorgos Rousopoulos			Test reference no:	PSD043
Client Tel Nº:	306972019434			Tested by:	MH, LS
				Date of test:	09/10/2014

Sample Information:		Test Information:	
Sample ref Nº:	140929 - G4	Initial mass of sample as received:	621.8 g
Sampling location:	BH G4 Sample 5	Mass of dry sample before washing:	429.5 g
Sample description:	Soil	Mass of dry sample after washing:	293.9 g
Date of sampling:	29/09/2014	Moisture content:	44.77 %
Type of material:	Soil	Silt content:	32.25 %
		Mass of sample for grading:	429.5 g

### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	0.0	0.0	100.00
10.000	0.0	0.0	100.00
6.300	0.0	0.0	100.00
5.000	4.8	1.1	98.88
3.350	3.0	0.7	98.18
2.000	6.2	1.4	96.74
1.180	11.9	2.8	93.97
0.600	26.3	6.1	87.85
0.425	24.1	5.6	82.24
0.300	39.9	9.3	72.95
0.212	64.9	15.1	57.83
0.150	56.5	13.2	44.68
0.063	53.0	12.3	32.34

Pan 138.5  
Total 429.5



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

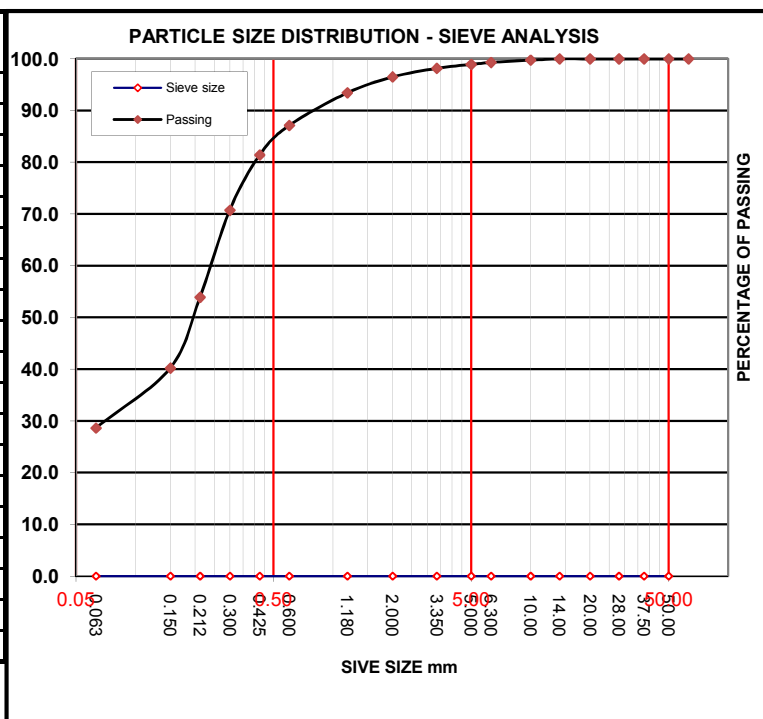
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Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	09/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test reference no:	PSD044
				Tested by:	MH, LS
				Date of test:	03/10/2014

Sample Information:		Test Information:	
Sample ref Nº:	140929 - G4	Initial mass of sample as received:	398.5 g
Sampling location:	BH G4 Sample 6	Mass of dry sample before washing:	289.0 g
Sample description:	Soil	Mass of dry sample after washing:	208.3 g
Date of sampling:	29/09/2014	Moisture content:	37.89 %
Type of material:	Soil	Silt content:	28.48 %
		Mass of sample for grading:	289.0 g

### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	0.0	0.0	100.00
10.000	0.7	0.2	99.76
6.300	1.3	0.4	99.31
5.000	1.1	0.4	98.93
3.350	2.2	0.8	98.17
2.000	4.8	1.7	96.51
1.180	8.9	3.1	93.43
0.600	18.2	6.3	87.13
0.425	16.5	5.7	81.42
0.300	30.9	10.7	70.73
0.212	48.6	16.8	53.91
0.150	39.6	13.7	40.21
0.063	33.5	11.6	28.62

Pan 82.3  
Total 289.0



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate

### Determination of Particle Size distribution according to BS 1377 - 2

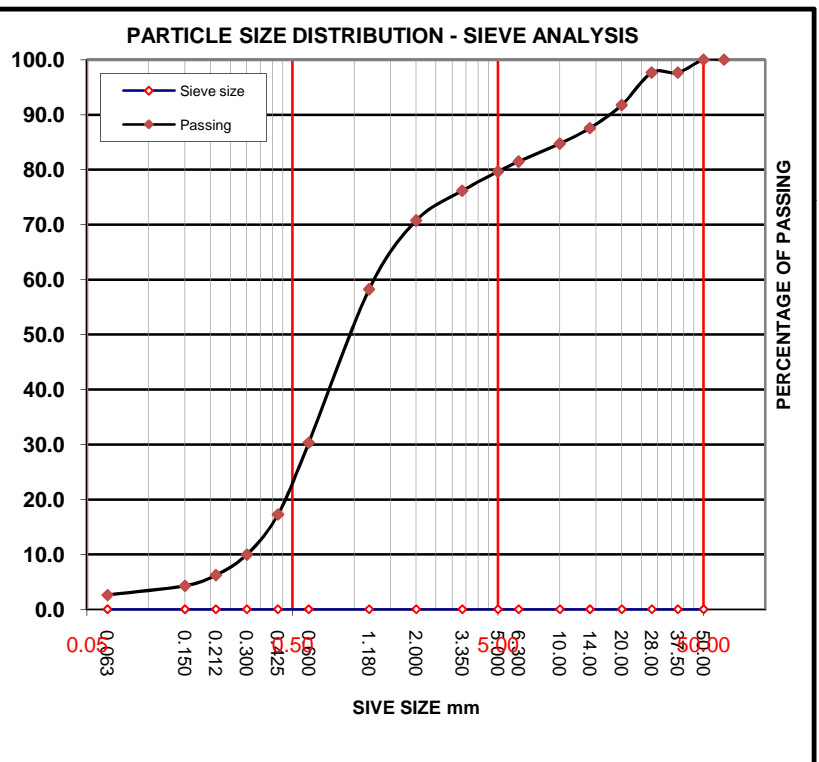
Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR289
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test reference no:	PSD072
				Tested by:	LS, MH
				Date of test:	20/10/2014

Sample Information:		Test Information:		
Sample ref Nº:	141003 - G5	Initial mass of sample as received:	796.7	g
Sampling location:	BH G5 Sample 2	Mass of dry sample before washing:	604.9	g
Sample description:	Soil	Mass of dry sample after washing:	590.1	g
Date of sampling:	03/10/2014	Moisture content:	31.71	%
Type of material:	Soil	Silt content:	2.56	%
		Mass of sample for grading:	604.9	g

#### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	14.3	2.4	97.64
28.000	0.0	0.0	97.64
20.000	35.7	5.9	91.73
14.000	25.3	4.2	87.55
10.000	17.1	2.8	84.72
6.300	19.7	3.3	81.47
5.000	11.0	1.8	79.65
3.350	21.2	3.5	76.14
2.000	32.7	5.4	70.74
1.180	75.8	12.5	58.21
0.600	168.8	27.9	30.30
0.425	79.0	13.1	17.24
0.300	44.2	7.3	9.94
0.212	22.5	3.7	6.22
0.150	11.8	2.0	4.27
0.063	10.2	1.7	2.58

Pan 15.5  
Total 604.9



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate

### Determination of Particle Size distribution according to BS 1377 - 2

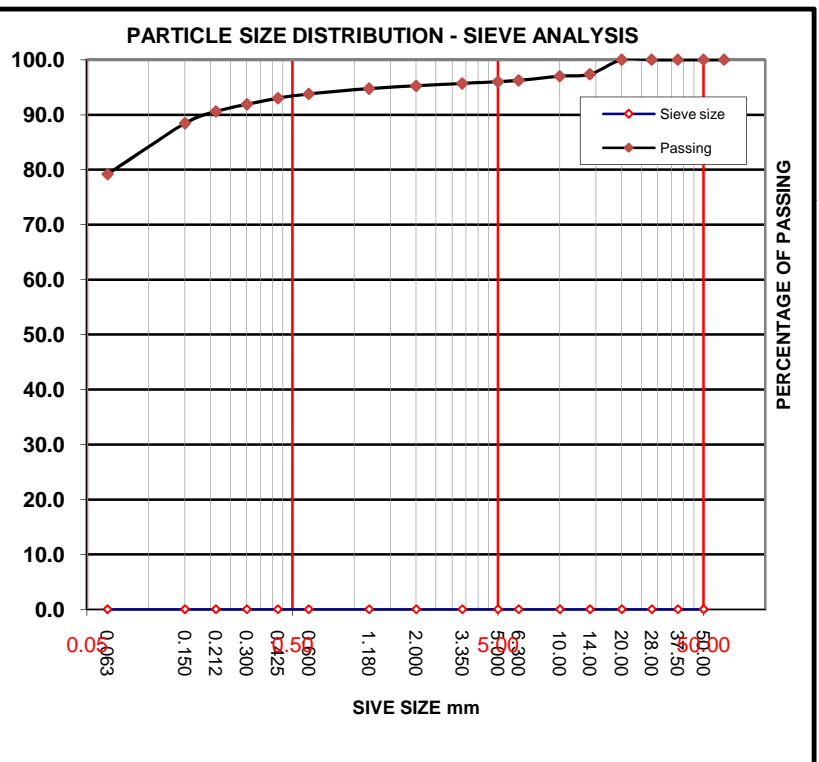
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Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test reference no:	PSD073
				Tested by:	LS
				Date of test:	20/10/2014

Sample Information:		Test Information:	
Sample ref N°:	141003 - G5	Initial mass of sample as received:	654.1 g
Sampling location:	BH G5 Sample 4	Mass of dry sample before washing:	512.0 g
Sample description:	Soil	Mass of dry sample after washing:	112.2 g
Date of sampling:	03/10/2014	Moisture content:	27.75 %
Type of material:	Soil	Silt content:	78.71 %
		Mass of sample for grading:	512.0 g

#### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	13.6	2.7	97.34
10.000	1.8	0.4	96.99
6.300	3.9	0.8	96.23
5.000	1.2	0.2	96.00
3.350	1.6	0.3	95.68
2.000	2.3	0.4	95.23
1.180	2.5	0.5	94.75
0.600	5.0	1.0	93.77
0.425	3.9	0.8	93.01
0.300	5.7	1.1	91.89
0.212	6.7	1.3	90.59
0.150	11.0	2.1	88.44
0.063	47.4	9.3	79.18

Pan 403  
Total 512.0



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
 Jessica Farrugia Quality Manager	 Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

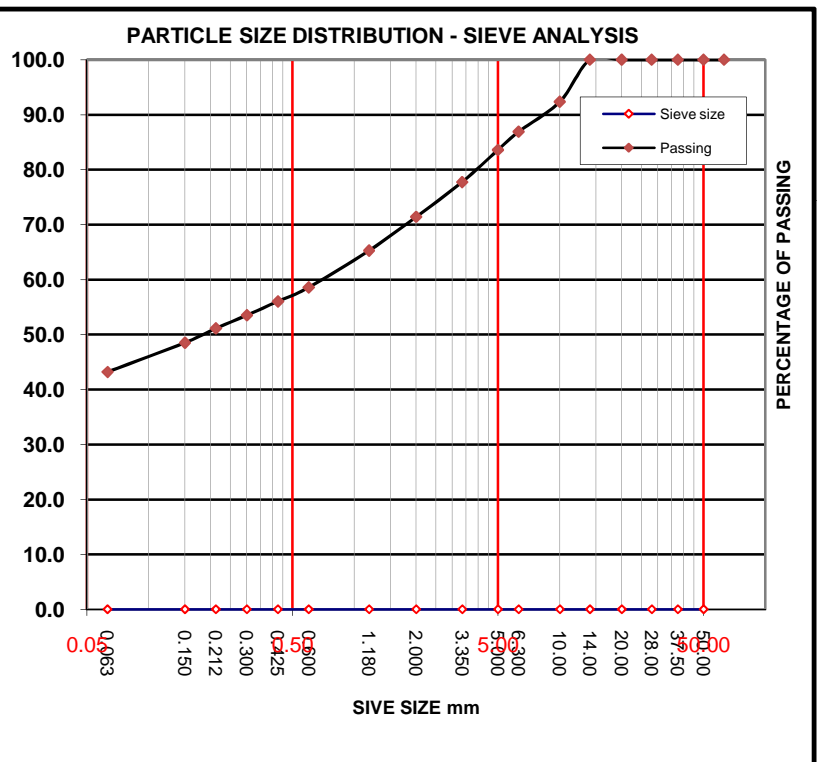
Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR291
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test reference no:	PSD074
				Tested by:	LS
				Date of test:	20/10/2014

Sample Information:		Test Information:		
Sample ref Nº:	141003 - G5	Initial mass of sample as received:	703.8	g
Sampling location:	BH G5 Sample 5	Mass of dry sample before washing:	570.5	g
Sample description:	Soil	Mass of dry sample after washing:	325.7	g
Date of sampling:	03/10/2014	Moisture content:	23.37	%
Type of material:	Soil	Silt content:	43.17	%
		Mass of sample for grading:	570.5	g

### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	0.0	0.0	100.00
10.000	43.6	7.6	92.36
6.300	31.1	5.5	86.91
5.000	18.9	3.3	83.59
3.350	33.3	5.8	77.76
2.000	36.1	6.3	71.43
1.180	35.1	6.2	65.28
0.600	38.1	6.7	58.60
0.425	14.6	2.6	56.04
0.300	14.3	2.5	53.53
0.212	13.7	2.4	51.13
0.150	14.8	2.6	48.54
0.063	30.4	5.3	43.21

Pan 246.3  
Total 570.5



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

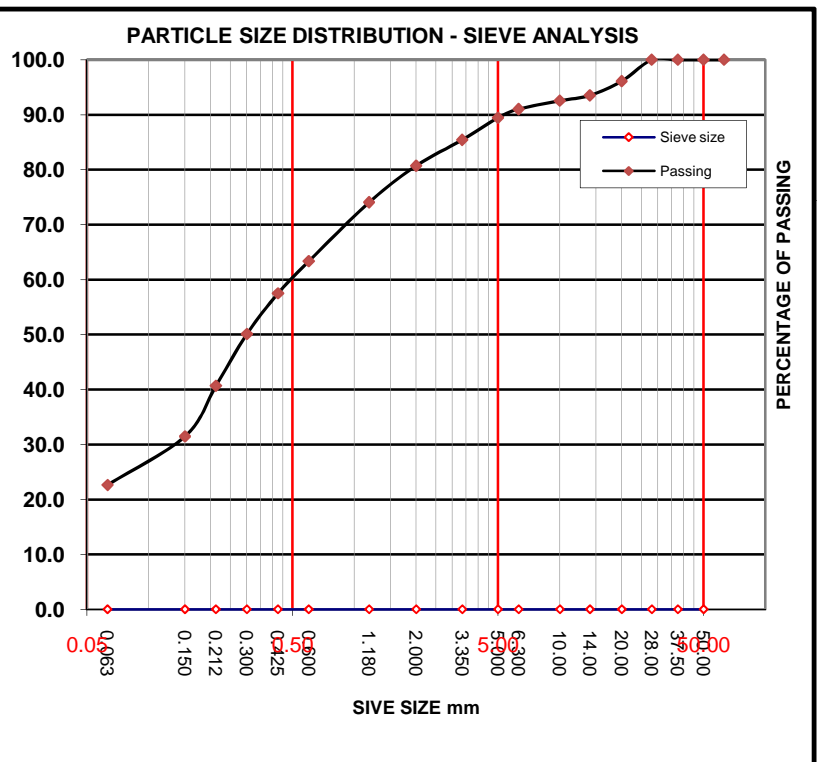
Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR292
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test reference no:	PSD075
				Tested by:	LS
				Date of test:	20/10/2014

Sample Information:		Test Information:		
Sample ref Nº:	141003 - G5	Initial mass of sample as received:	666.4	g
Sampling location:	BH G5 Sample 11	Mass of dry sample before washing:	569.0	g
Sample description:	Soil	Mass of dry sample after washing:	442.4	g
Date of sampling:	03/10/2014	Moisture content:	17.12	%
Type of material:	Soil	Silt content:	22.48	%
		Mass of sample for grading:	569.0	g



### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	22.2	3.9	96.10
14.000	14.7	2.6	93.51
10.000	5.5	1.0	92.55
6.300	8.7	1.5	91.02
5.000	8.9	1.6	89.46
3.350	22.9	4.0	85.43
2.000	26.8	4.7	80.72
1.180	37.9	6.7	74.06
0.600	61.0	10.7	63.34
0.425	33.2	5.8	57.50
0.300	42.1	7.4	50.11
0.212	53.6	9.4	40.69
0.150	52.4	9.2	31.48
0.063	50.3	8.8	22.64

Pan 127.9  
Total 569.0



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
	
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

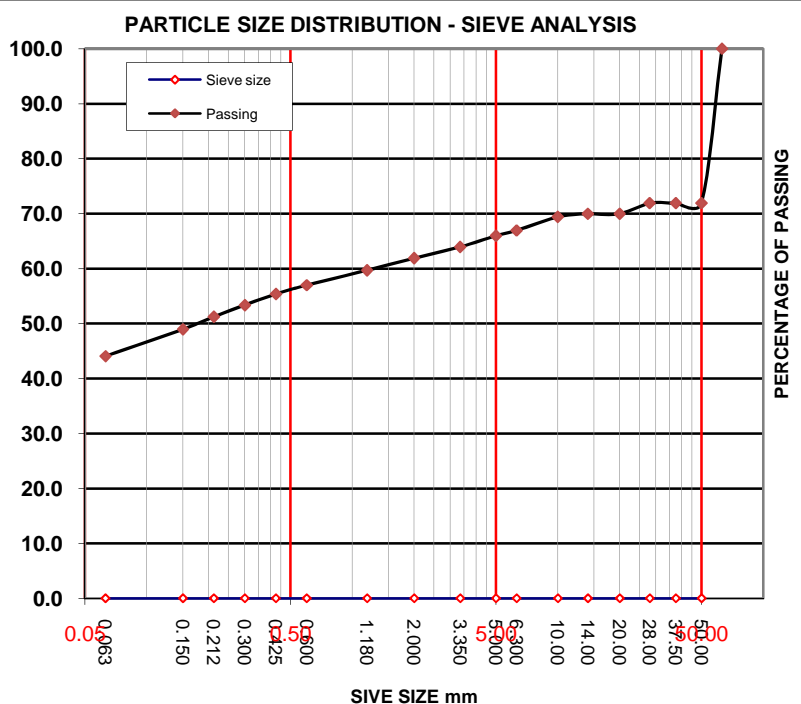
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Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job N°:	J2094
Client Tel N°:	306972019434			Test reference no:	PSD076
				Tested by:	LS
				Date of test:	20/10/2014

Sample Information:	Test Information:
Sample ref N°:	141003 - G5
Sampling location:	BH G5 Sample 13
Sample description:	Soil
Date of sampling:	03/10/2014
Type of material:	Soil
	Initial mass of sample as received: 661.3 g
	Mass of dry sample before washing: 564.2 g
	Mass of dry sample after washing: 318.0 g
	Moisture content: 17.21 %
	Silt content: 43.99 %
	Mass of sample for grading: 564.2 g

### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	158.6	28.1	71.89
37.500	0.0	0.0	71.89
28.000	0.0	0.0	71.89
20.000	10.9	1.9	69.96
14.000	0.0	0.0	69.96
10.000	3.2	0.6	69.39
6.300	13.9	2.5	66.93
5.000	5.4	1.0	65.97
3.350	11.5	2.0	63.93
2.000	11.6	2.1	61.88
1.180	12.4	2.2	59.68
0.600	15.3	2.7	56.97
0.425	9.0	1.6	55.37
0.300	11.5	2.0	53.33
0.212	11.9	2.1	51.22
0.150	12.9	2.3	48.94
0.063	27.6	4.9	44.04

Pan 248.2  
Total 564.2



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

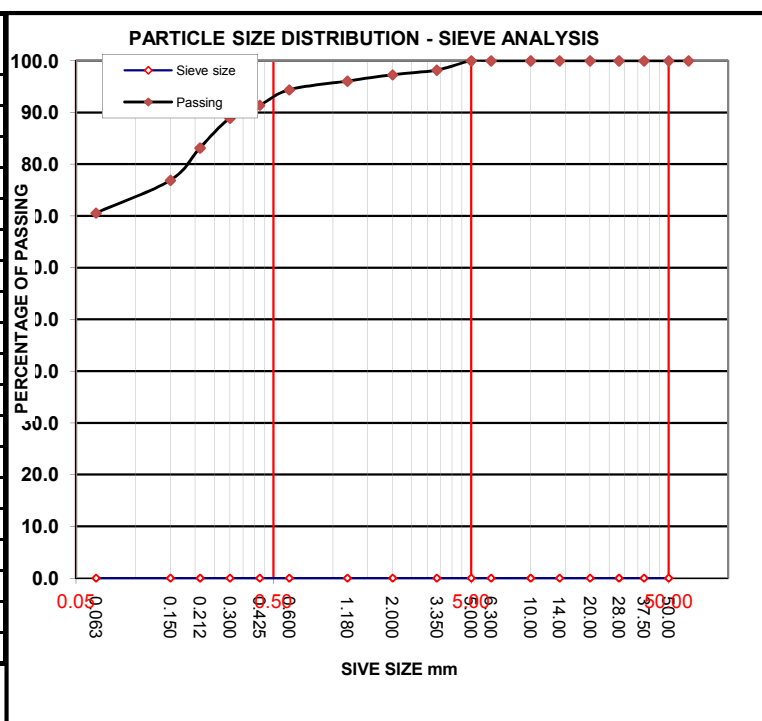
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Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	03/10/2014
		Location/Town:	Delimara	Client/Job Nº:	J2094
Attn:	Giorgos Rousopoulos			Test reference no:	PSD021
Client Tel Nº:	306972019434			Tested by:	MH, LS
				Date of test:	03/10/2014

Sample Information:		Test Information:	
Sample ref Nº:	140927 - G6	Initial mass of sample as received:	235.4 g
Sampling location:	BH G6 Depth: 1m	Mass of dry sample before washing:	154.9 g
Sample description:	Soil	Mass of dry sample after washing:	81.6 g
Date of sampling:	27/09/2014	Moisture content:	51.97 %
Type of material:	Soil	Silt content:	49.19 %
		Mass of sample for grading:	154.9 g



### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	0.0	0.0	100.00
10.000	0.0	0.0	100.00
6.300	0.0	0.0	100.00
5.000	0.0	0.0	100.00
3.350	2.8	1.8	98.19
2.000	1.4	0.9	97.29
1.180	1.9	1.2	96.06
0.600	2.6	1.7	94.38
0.425	4.6	3.0	91.41
0.300	3.9	2.5	88.90
0.212	8.9	5.7	83.15
0.150	9.7	6.3	76.89
0.063	9.8	6.3	70.56

Pan 76.2  
Total 154.9



Deviation from Standard:	Remarks:
Nil	Sample included organic contents and shells

Prepared By:	Approved By:
	
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

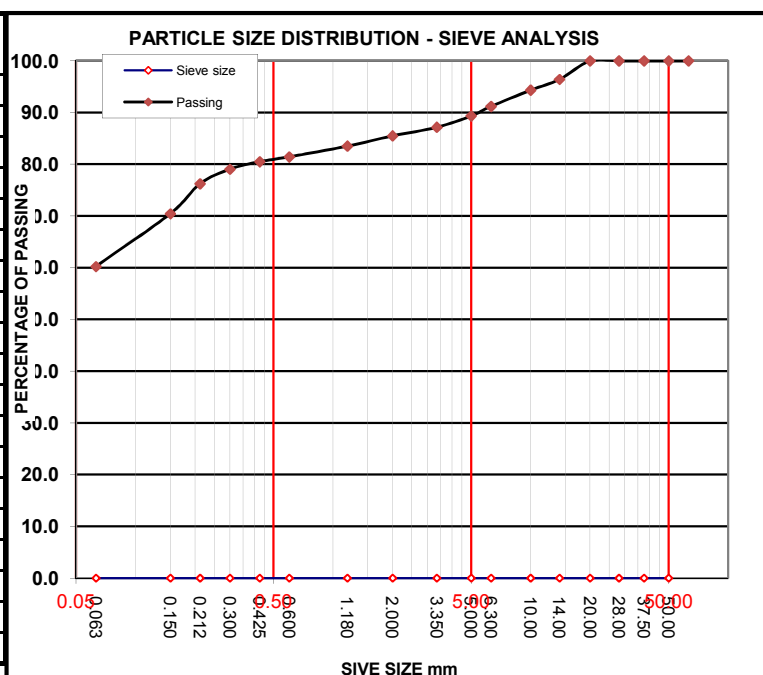
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Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	03/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test reference no:	PSD022
				Tested by:	MH, LS
				Date of test:	03/10/2014

Sample Information:		Test Information:	
Sample ref Nº:	140927 - G6	Initial mass of sample as received:	359.0 g
Sampling location:	BH G6 Depth: 3m	Mass of dry sample before washing:	292.9 g
Sample description:	Soil	Mass of dry sample after washing:	119.1 g
Date of sampling:	27/09/2014	Moisture content:	22.57 %
Type of material:	Soil	Silt content:	60.19 %
		Mass of sample for grading:	292.9 g



### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	10.5	3.6	96.42
10.000	6.1	2.1	94.33
6.300	9.2	3.1	91.19
5.000	5.4	1.8	89.35
3.350	6.4	2.2	87.16
2.000	4.9	1.7	85.49
1.180	5.8	2.0	83.51
0.600	6.1	2.1	81.43
0.425	2.7	0.9	80.51
0.300	4.3	1.5	79.04
0.212	8.2	2.8	76.24
0.150	17.0	5.8	70.43
0.063	29.9	10.2	60.23

Pan 176.3  
Total 292.9



Deviation from Standard:	Remarks:
Nil	Sample included organic contents and shells

Prepared By:	Approved By:
	
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

## TEST CERTIFICATE

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR059
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	03/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test reference no:	PSD023
				Tested by:	MH, LS
				Date of test:	03/10/2014

### Sample Information:

Sample ref Nº: 140927 - G6  
Sampling location: BH G6 Depth: 5m  
Sample description: Soil  
Date of sampling: 27/09/2014  
Type of material: Soil

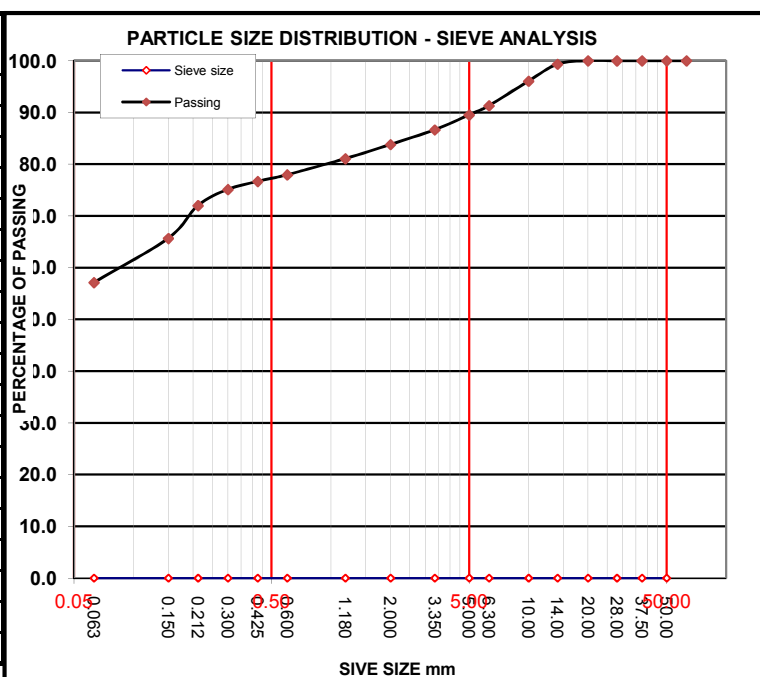
### Test Information:

Initial mass of sample as received: 723.3 g  
Mass of dry sample before washing: 569.8 g  
Mass of dry sample after washing: 249.0 g  
Moisture content: 26.94 %  
Silt content: 57.07 %  
Mass of sample for grading: 569.8 g

### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	3.8	0.7	99.33
10.000	18.7	3.3	96.05
6.300	27.0	4.7	91.31
5.000	10.2	1.8	89.52
3.350	16.4	2.9	86.64
2.000	16.2	2.8	83.80
1.180	15.6	2.7	81.06
0.600	17.8	3.1	77.94
0.425	7.3	1.3	76.66
0.300	8.9	1.6	75.10
0.212	17.6	3.1	72.01
0.150	36.2	6.4	65.65
0.063	48.7	8.5	57.11

Pan 325.2  
Total 569.8



### Deviation from Standard:

Nil

### Remarks:

Sample included organic contents and shells

### Prepared By:

Jessica Farrugia  
Quality Manager

### Approved By:

Chris Magro  
Laboratory Manager

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Registration No.: C32227

Directors: Alfred Xerri

Filename: J2094 Soil TCR059 PSD023.xls

## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

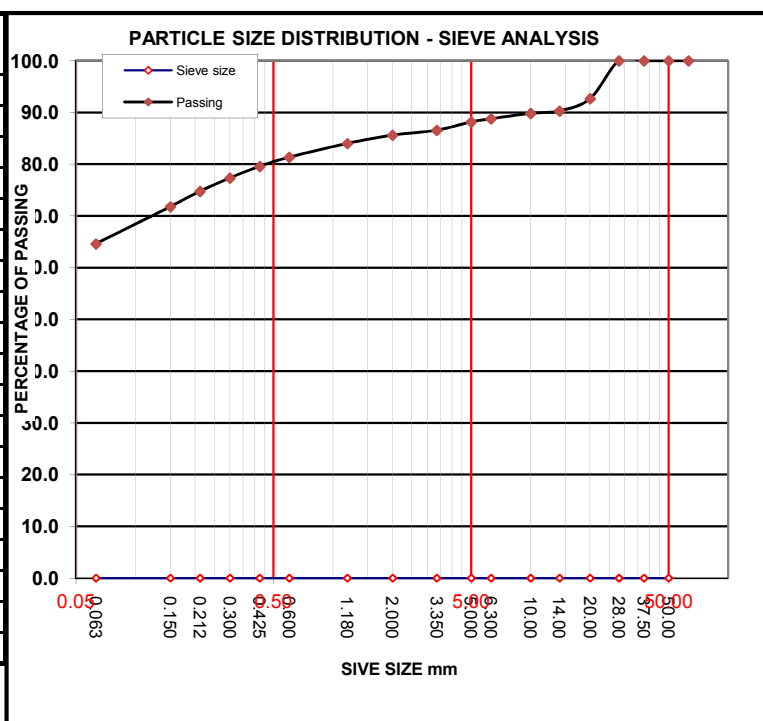
Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR060
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	03/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test reference no:	PSD024
				Tested by:	MH, LS
				Date of test:	03/10/2014

Sample Information:		Test Information:	
Sample ref Nº:	140927 - G6	Initial mass of sample as received:	403.7 g
Sampling location:	BH G6 Depth: 8m	Mass of dry sample before washing:	316.1 g
Sample description:	Soil	Mass of dry sample after washing:	114.0 g
Date of sampling:	27/09/2014	Moisture content:	27.71 %
Type of material:	Soil	Silt content:	64.57 %
		Mass of sample for grading:	316.1 g



### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	23.2	7.3	92.66
14.000	7.5	2.4	90.29
10.000	1.5	0.5	89.81
6.300	3.3	1.0	88.77
5.000	1.9	0.6	88.17
3.350	5.1	1.6	86.55
2.000	3.0	0.9	85.61
1.180	5.1	1.6	83.99
0.600	8.4	2.7	81.34
0.425	5.6	1.8	79.56
0.300	7.1	2.2	77.32
0.212	8.1	2.6	74.75
0.150	9.4	3.0	71.78
0.063	22.7	7.2	64.60

Pan 204.1  
Total 316.1



Deviation from Standard:	Remarks:
Nil	Sample included organic contents and shells

Prepared By:	Approved By:
	
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR061
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	03/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test reference no:	PSD025
				Tested by:	MH, LS
				Date of test:	03/10/2014

### Sample Information:

Sample ref Nº: 140927 - G6  
Sampling location: BH G6 Depth: 9m  
Sample description: Soil  
Date of sampling: 27/09/2014  
Type of material: Soil

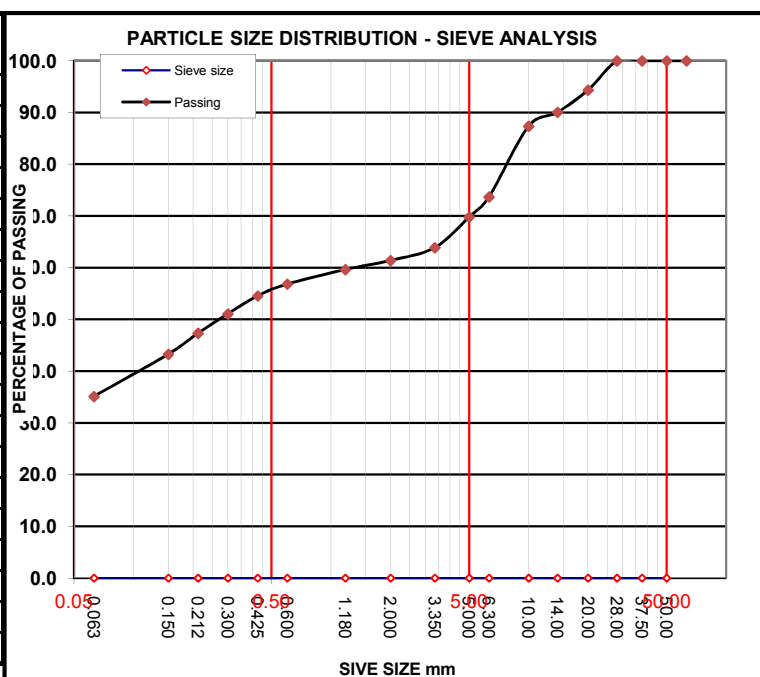
### Test Information:

Initial mass of sample as received: 410.5 g  
Mass of dry sample before washing: 347.6 g  
Mass of dry sample after washing: 227.0 g  
Moisture content: 18.10 %  
Silt content: 35.10 %  
Mass of sample for grading: 347.6 g

### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	19.7	5.7	94.33
14.000	14.9	4.3	90.05
10.000	9.4	2.7	87.34
6.300	47.5	13.7	73.68
5.000	13.5	3.9	69.79
3.350	20.6	5.9	63.87
2.000	8.6	2.5	61.39
1.180	6.1	1.8	59.64
0.600	9.8	2.8	56.82
0.425	7.9	2.3	54.55
0.300	12.1	3.5	51.06
0.212	13.0	3.7	47.32
0.150	14.1	4.1	43.27
0.063	28.4	8.2	35.10

Pan 122  
Total 347.6



### Deviation from Standard:

Nil

### Remarks:

Sample included organic contents and shells

### Prepared By:

Jessica Farrugia  
Quality Manager

### Approved By:

Chris Magro  
Laboratory Manager

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Registration No.: C32227

Directors: Alfred Xerri

Filename: J2094 Soil TCR061 PSD025.xls

## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR062
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	03/10/2014
		Location/Town:	Delimara	Client/Job Nº:	J2094
Attn:	Giorgos Rousopoulos			Test reference no:	PSD026
Client Tel Nº:	306972019434			Tested by:	MH, LS
				Date of test:	03/10/2014

### Sample Information:

Sample ref Nº: 140927 - G6  
Sampling location: BH G6 Depth: 12m  
Sample description: Soil  
Date of sampling: 27/09/2014  
Type of material: Soil

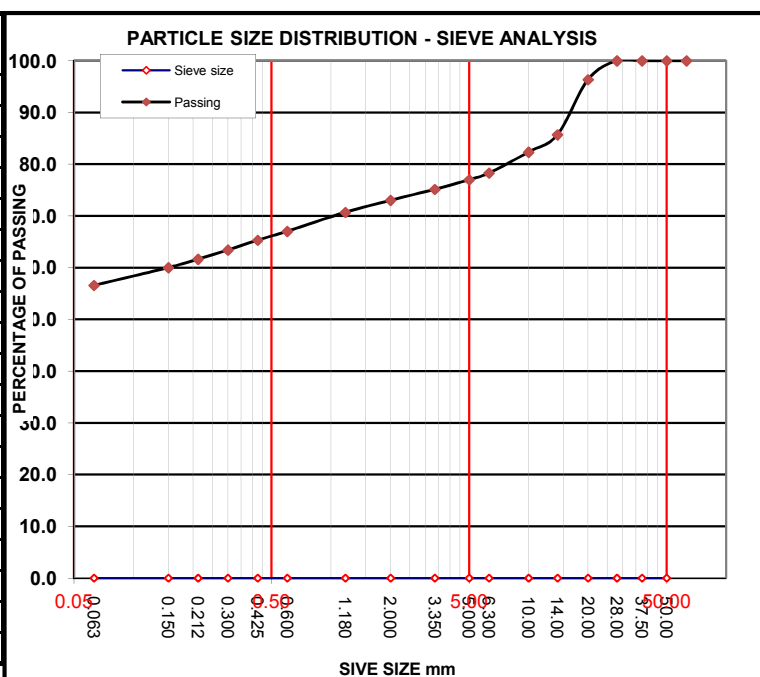
### Test Information:

Initial mass of sample as received: 592.0 g  
Mass of dry sample before washing: 483.1 g  
Mass of dry sample after washing: 210.6 g  
Moisture content: 22.54 %  
Silt content: 56.57 %  
Mass of sample for grading: 483.1 g

### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	17.6	3.6	96.36
14.000	51.5	10.7	85.70
10.000	16.2	3.4	82.34
6.300	19.6	4.1	78.29
5.000	6.2	1.3	77.00
3.350	9.0	1.9	75.14
2.000	10.3	2.1	73.01
1.180	11.2	2.3	70.69
0.600	17.7	3.7	67.03
0.425	8.3	1.7	65.31
0.300	9.2	1.9	63.40
0.212	8.5	1.8	61.64
0.150	7.9	1.6	60.01
0.063	16.6	3.4	56.57

Pan 273.3  
Total 483.1



### Deviation from Standard:

Nil

### Remarks:

Sample included organic contents and shells

### Prepared By:

Jessica Farrugia  
Quality Manager

### Approved By:

Chris Magro  
Laboratory Manager

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Registration No.: C32227

Directors: Alfred Xerri

Filename: J2094 Soil TCR062 PSD026.xls

## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR063
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	03/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test reference no:	PSD027
				Tested by:	MH, LS
				Date of test:	03/10/2014

### Sample Information:

Sample ref Nº: 140927 - G6  
Sampling location: BH G6 Depth: 13m  
Sample description: Soil  
Date of sampling: 27/09/2014  
Type of material: Soil

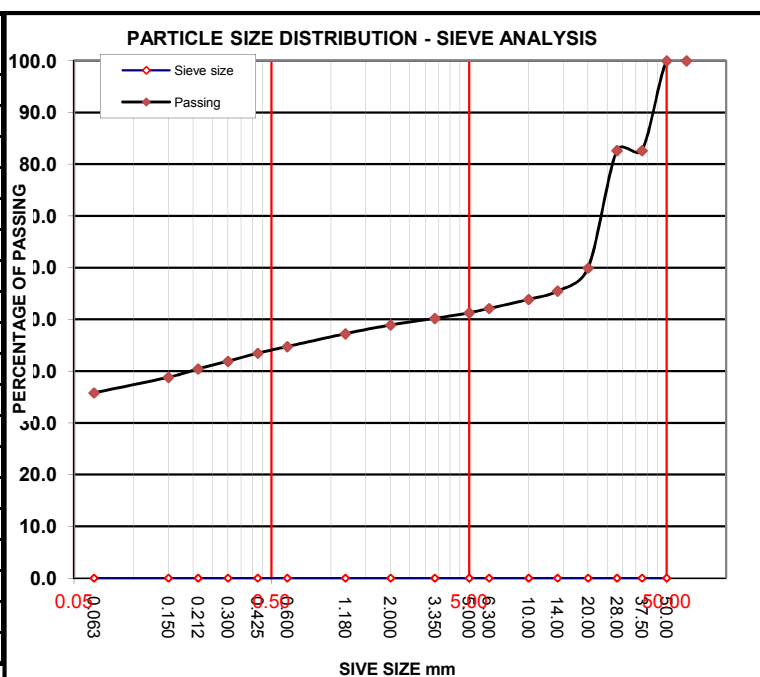
### Test Information:

Initial mass of sample as received: 595.8 g  
Mass of dry sample before washing: 488.3 g  
Mass of dry sample after washing: 314.5 g  
Moisture content: 22.02 %  
Silt content: 35.78 %  
Mass of sample for grading: 488.3 g

### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	84.8	17.4	82.63
28.000	0.0	0.0	82.63
20.000	110.9	22.7	59.92
14.000	21.7	4.4	55.48
10.000	7.9	1.6	53.86
6.300	8.5	1.7	52.12
5.000	4.1	0.8	51.28
3.350	5.3	1.1	50.19
2.000	6.2	1.3	48.92
1.180	8.3	1.7	47.23
0.600	12.1	2.5	44.75
0.425	6.3	1.3	43.46
0.300	7.6	1.6	41.90
0.212	7.2	1.5	40.43
0.150	7.9	1.6	38.81
0.063	14.7	3.0	35.80

Pan 174.7  
Total 488.3



### Deviation from Standard:

Nil

### Remarks:

Sample included organic contents and shells

### Prepared By:

Jessica Farrugia  
Quality Manager

### Approved By:

Chris Magro  
Laboratory Manager

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Registration No.: C32227

Directors: Alfred Xerri

Filename: J2094 Soil TCR063 PSD027.xls

## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR064
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	03/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test reference no:	PSD028
				Tested by:	MH, LS
				Date of test:	03/10/2014

### Sample Information:

Sample ref Nº: 140927 - G6  
Sampling location: BH G6 Depth: 14m  
Sample description: Soil  
Date of sampling: 27/09/2014  
Type of material: Soil

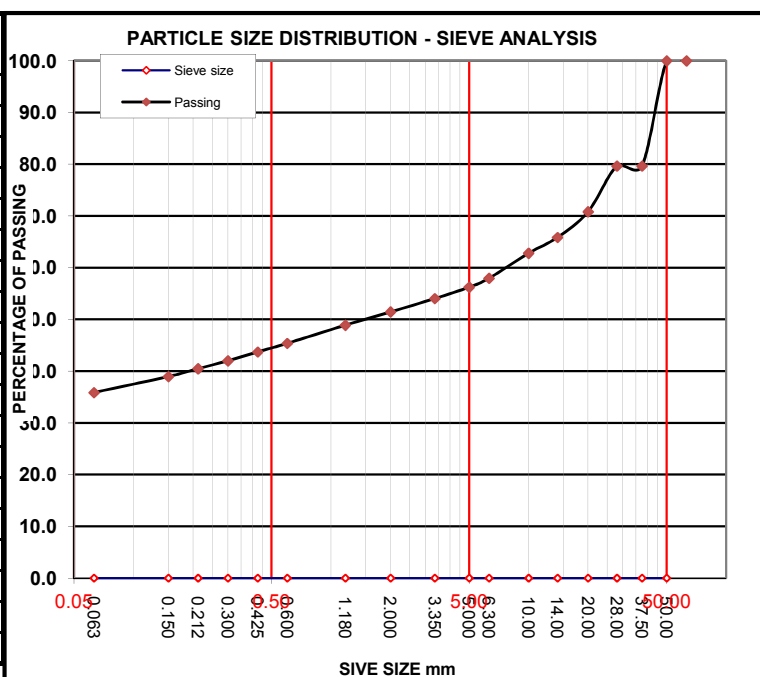
### Test Information:

Initial mass of sample as received: 623.3 g  
Mass of dry sample before washing: 564.4 g  
Mass of dry sample after washing: 363.3 g  
Moisture content: 10.44 %  
Silt content: 35.83 %  
Mass of sample for grading: 564.4 g

### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	114.8	20.3	79.66
28.000	0.0	0.0	79.66
20.000	49.9	8.8	70.82
14.000	28.0	5.0	65.86
10.000	17.2	3.0	62.81
6.300	27.4	4.9	57.96
5.000	9.7	1.7	56.24
3.350	12.4	2.2	54.04
2.000	14.6	2.6	51.45
1.180	14.5	2.6	48.88
0.600	19.8	3.5	45.38
0.425	9.4	1.7	43.71
0.300	9.7	1.7	41.99
0.212	8.6	1.5	40.47
0.150	8.6	1.5	38.94
0.063	17.4	3.1	35.86

Pan 202.2  
Total 564.4



### Deviation from Standard:

Nil

### Remarks:

Sample included organic contents and shells

### Prepared By:

Jessica Farrugia  
Quality Manager

### Approved By:

Chris Magro  
Laboratory Manager

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Registration No.: C32227

Directors: Alfred Xerri

Filename: J2094 Soil TCR064 PSD028.xls

## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

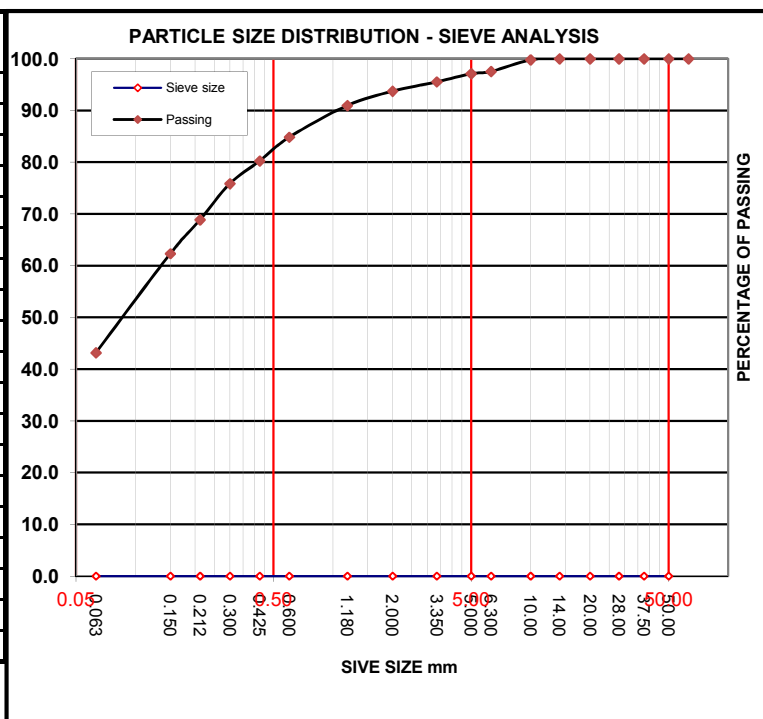
Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR126
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	09/10/2014
		Location/Town:	Delimara	Client/Job Nº:	J2094
Attn:	Giorgos Rousopoulos			Test reference no:	PSD045
Client Tel Nº:	306972019434			Tested by:	MH, LS
				Date of test:	09/10/2014

Sample Information:		Test Information:	
Sample ref Nº:	140927 - G6	Initial mass of sample as received:	371.8 g
Sampling location:	BH G6 Sample 2	Mass of dry sample before washing:	209.2 g
Sample description:	Soil	Mass of dry sample after washing:	123.8 g
Date of sampling:	27/09/2014	Moisture content:	77.72 %
Type of material:	Soil	Silt content:	43.07 %
		Mass of sample for grading:	209.2 g

### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	0.0	0.0	100.00
10.000	0.4	0.2	99.81
6.300	4.7	2.2	97.56
5.000	0.9	0.4	97.13
3.350	3.3	1.6	95.55
2.000	3.8	1.8	93.74
1.180	5.8	2.8	90.97
0.600	12.8	6.1	84.85
0.425	9.6	4.6	80.26
0.300	9.2	4.4	75.86
0.212	14.6	7.0	68.88
0.150	13.7	6.5	62.33
0.063	40.1	19.2	43.16

Pan 90.1  
Total 209.2



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

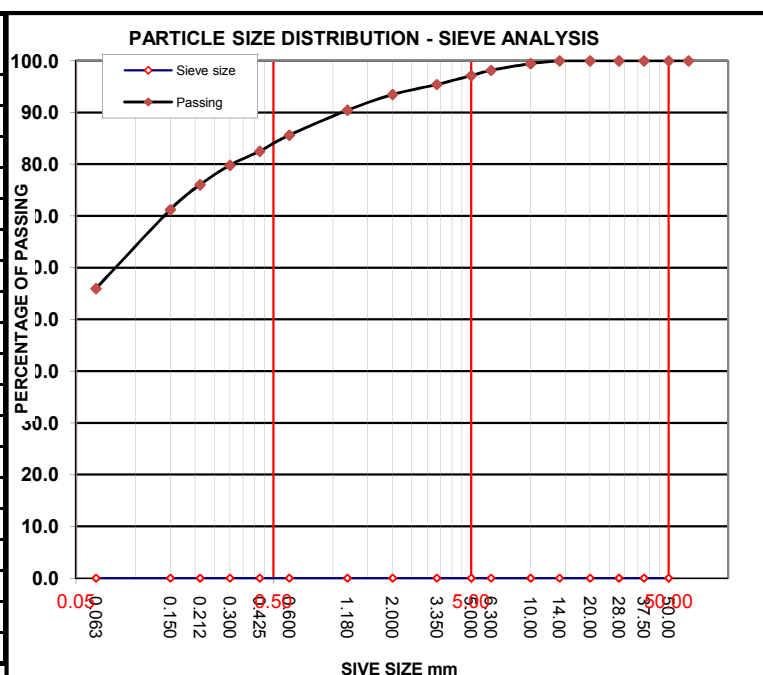
Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR067
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	06/10/2014
		Location/Town:	Delimara	Client/Job Nº:	J2094
Attn:	Giorgos Rousopoulos			Test reference no:	PSD029
Client Tel Nº:	306972019434			Tested by:	MH, LS
				Date of test:	04/10/2014

Sample Information:		Test Information:	
Sample ref Nº:	140926 - G7	Initial mass of sample as received:	515.5 g
Sampling location:	BH G7 Depth: 2m	Mass of dry sample before washing:	314.8 g
Sample description:	Soil	Mass of dry sample after washing:	142.7 g
Date of sampling:	26/09/2014	Moisture content:	63.75 %
Type of material:	Soil	Silt content:	55.88 %
		Mass of sample for grading:	314.8 g



### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	0.0	0.0	100.00
10.000	1.7	0.5	99.46
6.300	4.1	1.3	98.16
5.000	3.2	1.0	97.14
3.350	5.4	1.7	95.43
2.000	6.1	1.9	93.49
1.180	9.6	3.0	90.44
0.600	15.1	4.8	85.64
0.425	9.8	3.1	82.53
0.300	8.6	2.7	79.80
0.212	11.8	3.7	76.05
0.150	15.2	4.8	71.22
0.063	48.0	15.2	55.97

Pan 175.9  
Total 314.8



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
	
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

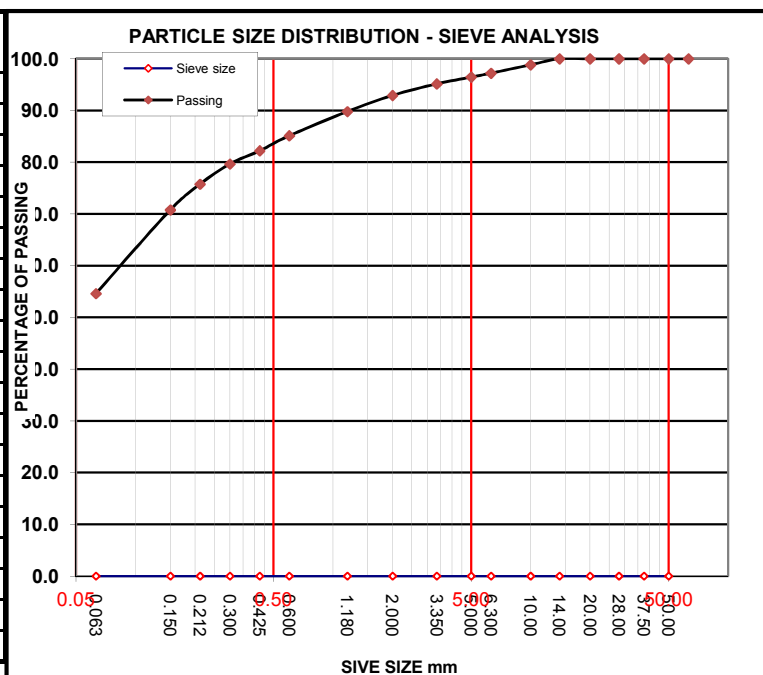
Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR068
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	06/10/2014
		Location/Town:	Delimara	Client/Job Nº:	J2094
Attn:	Giorgos Rousopoulos			Test reference no:	PSD030
Client Tel Nº:	306972019434			Tested by:	MH, LS
				Date of test:	04/10/2014

Sample Information:		Test Information:	
Sample ref Nº:	140926 - G7	Initial mass of sample as received:	563.5 g
Sampling location:	BH G7 Depth: 5m	Mass of dry sample before washing:	333.3 g
Sample description:	Soil	Mass of dry sample after washing:	156.1 g
Date of sampling:	26/09/2014	Moisture content:	69.07 %
Type of material:	Soil	Silt content:	54.55 %
		Mass of sample for grading:	333.3 g



### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	0.0	0.0	100.00
10.000	3.9	1.2	98.83
6.300	5.4	1.6	97.21
5.000	2.5	0.8	96.46
3.350	4.4	1.3	95.14
2.000	7.4	2.2	92.92
1.180	10.4	3.1	89.80
0.600	15.6	4.7	85.12
0.425	9.7	2.9	82.21
0.300	8.5	2.6	79.66
0.212	13.0	3.9	75.76
0.150	16.6	5.0	70.78
0.063	53.9	16.2	54.61

Pan 181.8  
Total 333.3



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
	
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

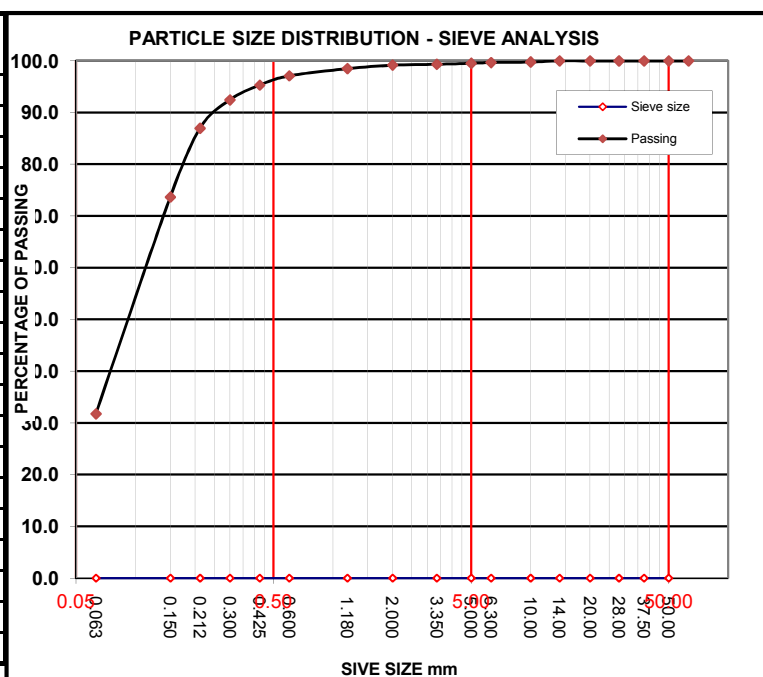
Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR069
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	06/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test reference no:	PSD031
				Tested by:	MH, LS
				Date of test:	04/10/2014

Sample Information:		Test Information:	
Sample ref Nº:	140926 - G7	Initial mass of sample as received:	388.5 g
Sampling location:	BH G7 Depth: 7m	Mass of dry sample before washing:	279.6 g
Sample description:	Soil	Mass of dry sample after washing:	199.5 g
Date of sampling:	26/09/2014	Moisture content:	38.95 %
Type of material:	Soil	Silt content:	31.62 %
		Mass of sample for grading:	279.6 g



### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	0.0	0.0	100.00
10.000	0.6	0.2	99.79
6.300	0.3	0.1	99.68
5.000	0.4	0.1	99.54
3.350	0.5	0.2	99.36
2.000	0.5	0.2	99.18
1.180	1.9	0.7	98.50
0.600	3.9	1.4	97.10
0.425	5.0	1.8	95.31
0.300	8.0	2.9	92.45
0.212	15.3	5.5	86.98
0.150	37.2	13.3	73.68
0.063	117.2	41.9	31.76

Pan 88.4  
Total 279.6



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
	
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

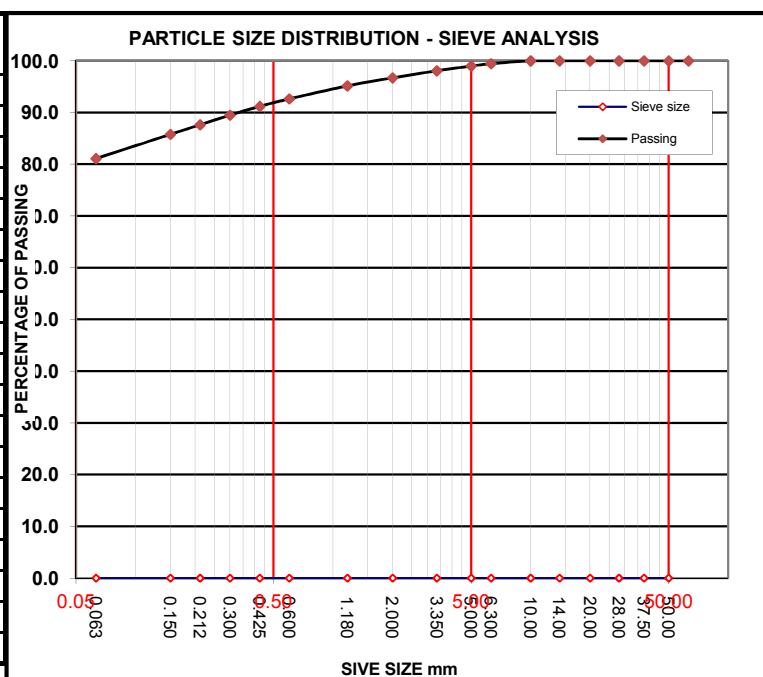
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Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	06/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test reference no:	PSD032
				Tested by:	MH, LS
				Date of test:	04/10/2014

Sample Information:		Test Information:	
Sample ref Nº:	140926 - G7	Initial mass of sample as received:	409.9 g
Sampling location:	BH G7 Depth: 10m	Mass of dry sample before washing:	307.4 g
Sample description:	Soil	Mass of dry sample after washing:	58.6 g
Date of sampling:	26/09/2014	Moisture content:	33.34 %
Type of material:	Soil	Silt content:	81.07 %
		Mass of sample for grading:	307.4 g



### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	0.0	0.0	100.00
10.000	0.0	0.0	100.00
6.300	1.7	0.6	99.45
5.000	1.4	0.5	98.99
3.350	2.8	0.9	98.08
2.000	4.2	1.4	96.71
1.180	4.8	1.6	95.15
0.600	7.7	2.5	92.65
0.425	4.5	1.5	91.18
0.300	5.2	1.7	89.49
0.212	5.7	1.9	87.64
0.150	5.7	1.9	85.78
0.063	14.4	4.7	81.10

Pan 249.2  
Total 307.4



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
	
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

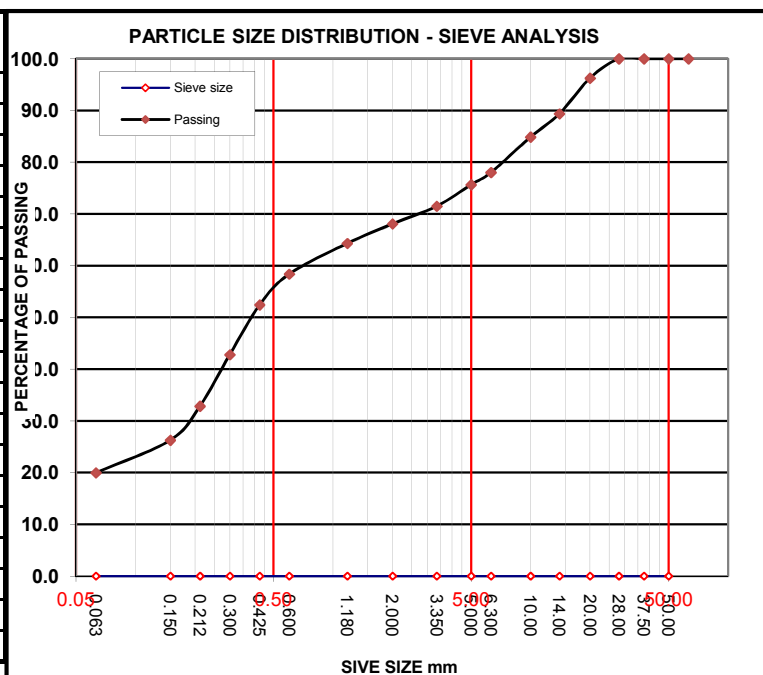
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Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	06/10/2014
		Location/Town:	Delimara	Client/Job Nº:	J2094
Attn:	Giorgos Rousopoulos			Test reference no:	PSD033
Client Tel Nº:	306972019434			Tested by:	MH, LS
				Date of test:	04/10/2014

Sample Information:		Test Information:	
Sample ref Nº:	140926 - G7	Initial mass of sample as received:	705.4 g
Sampling location:	BH G7 Depth: 14m	Mass of dry sample before washing:	559.5 g
Sample description:	Soil	Mass of dry sample after washing:	450.1 g
Date of sampling:	26/09/2014	Moisture content:	26.08 %
Type of material:	Soil	Silt content:	19.89 %
		Mass of sample for grading:	559.5 g



### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	20.9	3.7	96.26
14.000	38.6	6.9	89.37
10.000	25.2	4.5	84.86
6.300	38.3	6.8	78.02
5.000	13.2	2.4	75.66
3.350	23.3	4.2	71.49
2.000	19.1	3.4	68.08
1.180	21.1	3.8	64.31
0.600	33.2	5.9	58.37
0.425	33.3	6.0	52.42
0.300	53.9	9.6	42.79
0.212	55.7	10.0	32.83
0.150	36.8	6.6	26.26
0.063	35.3	6.3	19.95

Pan 111.3  
Total 559.5



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
	
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

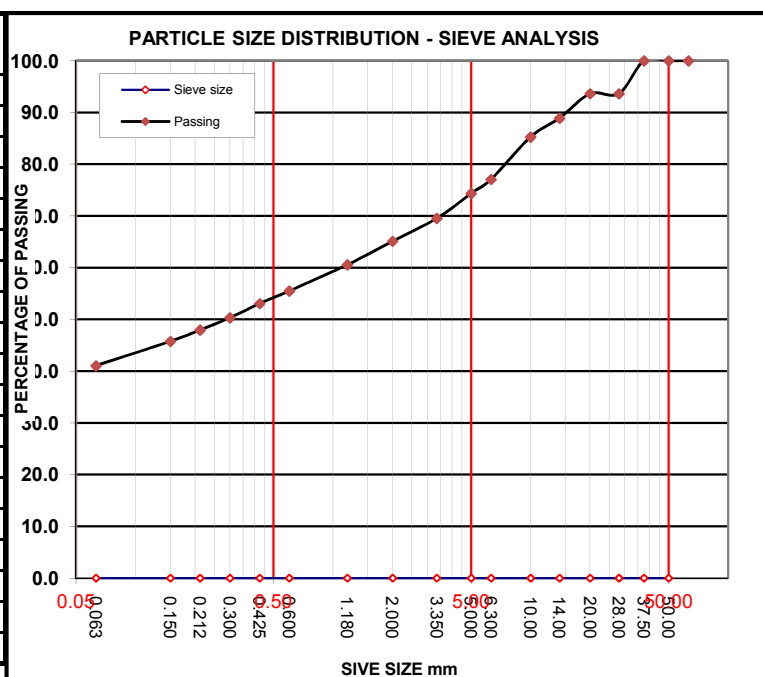
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Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	06/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test reference no:	PSD034
				Tested by:	MH, LS
				Date of test:	04/10/2014

Sample Information:		Test Information:	
Sample ref Nº:	140926 - G7	Initial mass of sample as received:	726.1 g
Sampling location:	BH G7 Depth: 17m	Mass of dry sample before washing:	603.3 g
Sample description:	Soil	Mass of dry sample after washing:	357.1 g
Date of sampling:	26/09/2014	Moisture content:	20.35 %
Type of material:	Soil	Silt content:	41.01 %
		Mass of sample for grading:	603.3 g



### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	38.4	6.4	93.64
20.000	0.0	0.0	93.64
14.000	28.6	4.7	88.89
10.000	21.9	3.6	85.26
6.300	49.5	8.2	77.06
5.000	16.3	2.7	74.36
3.350	29.2	4.8	69.52
2.000	26.6	4.4	65.11
1.180	27.5	4.6	60.55
0.600	30.5	5.1	55.49
0.425	14.7	2.4	53.06
0.300	16.6	2.8	50.31
0.212	14.3	2.4	47.94
0.150	13.2	2.2	45.75
0.063	28.4	4.7	41.04

Pan 247.4  
Total 603.3



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
	
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

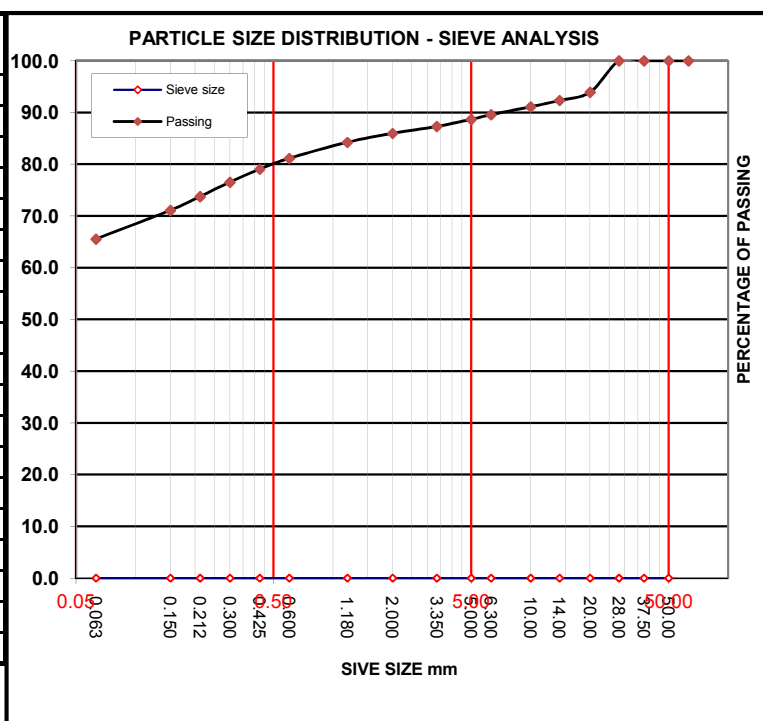
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Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	10/10/2014
		Location/Town:	Delimara	Client/Job Nº:	J2094
Attn:	Giorgos Rousopoulos			Test reference no:	PSD046
Client Tel Nº:	306972019434			Tested by:	MH, LS
				Date of test:	09/10/2014

Sample Information:		Test Information:	
Sample ref Nº:	140926 - G7	Initial mass of sample as received:	571.9 g
Sampling location:	BH G7 Sample 9/ 22.6m	Mass of dry sample before washing:	439.4 g
Sample description:	Soil	Mass of dry sample after washing:	152.8 g
Date of sampling:	26/09/2014	Moisture content:	30.15 %
Type of material:	Soil	Silt content:	65.48 %
		Mass of sample for grading:	439.4 g



### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	26.7	6.1	93.92
14.000	7.0	1.6	92.33
10.000	5.4	1.2	91.10
6.300	6.7	1.5	89.58
5.000	4.0	0.9	88.67
3.350	6.0	1.4	87.30
2.000	5.9	1.3	85.96
1.180	7.6	1.7	84.23
0.600	13.6	3.1	81.13
0.425	9.2	2.1	79.04
0.300	11.1	2.5	76.51
0.212	12.2	2.8	73.74
0.150	11.7	2.7	71.07
0.063	24.4	5.6	65.52

Pan 287.7  
Total 439.4



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
	
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

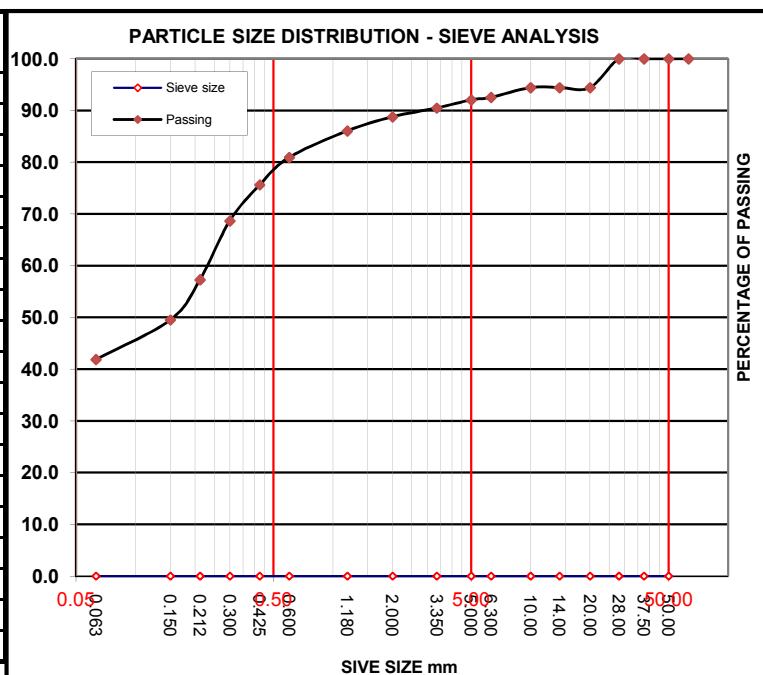
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Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	10/10/2014
		Location/Town:	Delimara	Client/Job Nº:	J2094
Attn:	Giorgos Rousopoulos			Test reference no:	PSD047
Client Tel Nº:	306972019434			Tested by:	MH, LS
				Date of test:	09/10/2014

Sample Information:		Test Information:	
Sample ref Nº:	140926 - G7	Initial mass of sample as received:	521.5 g
Sampling location:	BH G7 Sample 11	Mass of dry sample before washing:	375.0 g
Sample description:	Soil	Mass of dry sample after washing:	220.5 g
Date of sampling:	26/09/2014	Moisture content:	39.07 %
Type of material:	Soil	Silt content:	41.79 %
		Mass of sample for grading:	375.0 g



### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	20.9	5.6	94.43
14.000	0.0	0.0	94.43
10.000	0.0	0.0	94.43
6.300	7.1	1.9	92.53
5.000	1.8	0.5	92.05
3.350	5.9	1.6	90.48
2.000	6.4	1.7	88.77
1.180	10.2	2.7	86.05
0.600	19.2	5.1	80.93
0.425	19.9	5.3	75.63
0.300	26.1	7.0	68.67
0.212	42.7	11.4	57.28
0.150	29.1	7.8	49.52
0.063	28.7	7.7	41.87

Pan 156.7  
Total 375.0



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
	
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

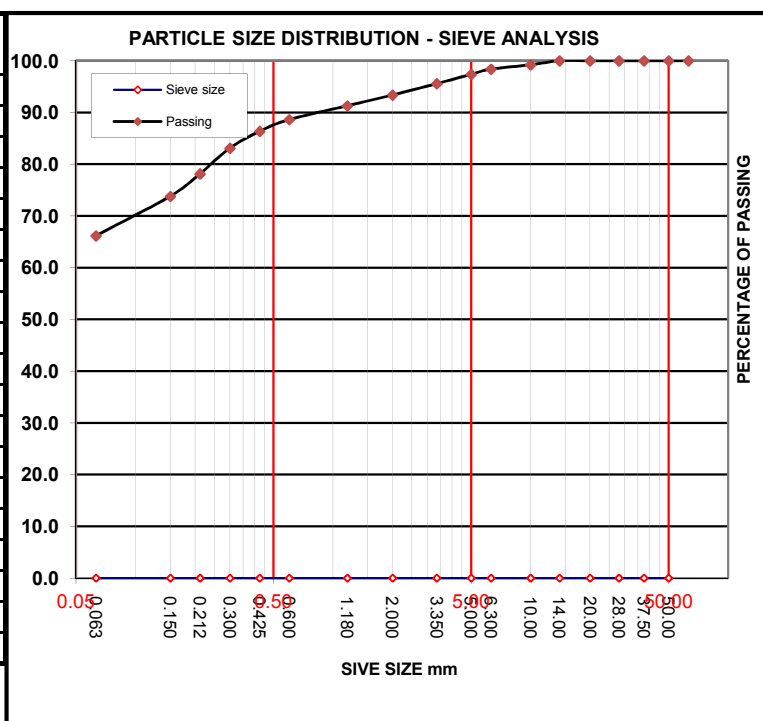
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Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	10/10/2014
		Location/Town:	Delimara	Client/Job Nº:	J2094
Attn:	Giorgos Rousopoulos			Test reference no:	PSD048
Client Tel Nº:	306972019434			Tested by:	MH, LS
				Date of test:	09/10/2014

Sample Information:		Test Information:	
Sample ref Nº:	140926 - G7	Initial mass of sample as received:	685.6 g
Sampling location:	BH G7 Sample 12/25.4m	Mass of dry sample before washing:	494.7 g
Sample description:	Soil	Mass of dry sample after washing:	169.0 g
Date of sampling:	26/09/2014	Moisture content:	38.59 %
Type of material:	Soil	Silt content:	66.06 %
		Mass of sample for grading:	494.7 g



### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	0.0	0.0	100.00
10.000	3.9	0.8	99.21
6.300	4.1	0.8	98.38
5.000	5.0	1.0	97.37
3.350	8.9	1.8	95.57
2.000	10.9	2.2	93.37
1.180	10.3	2.1	91.29
0.600	13.2	2.7	88.62
0.425	11.2	2.3	86.36
0.300	16.2	3.3	83.08
0.212	24.5	5.0	78.13
0.150	21.5	4.3	73.78
0.063	37.8	7.6	66.14

Pan 326.8  
Total 494.7



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
	
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR042
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	02/10/2014
		Location/Town:	Delimara	Client/Job Nº:	J2094
Attn:	Giorgos Rousopoulos			Test reference no:	PSD009
Client Tel Nº:	306972019434			Tested by:	MH, LS
				Date of test:	02/10/2014

### Sample Information:

Sample ref Nº: 140916 - G8  
Sampling location: BH G8Depth: 2 - 3m  
Sample description: Soil  
Date of sampling: 16/09/2014  
Type of material: Soil

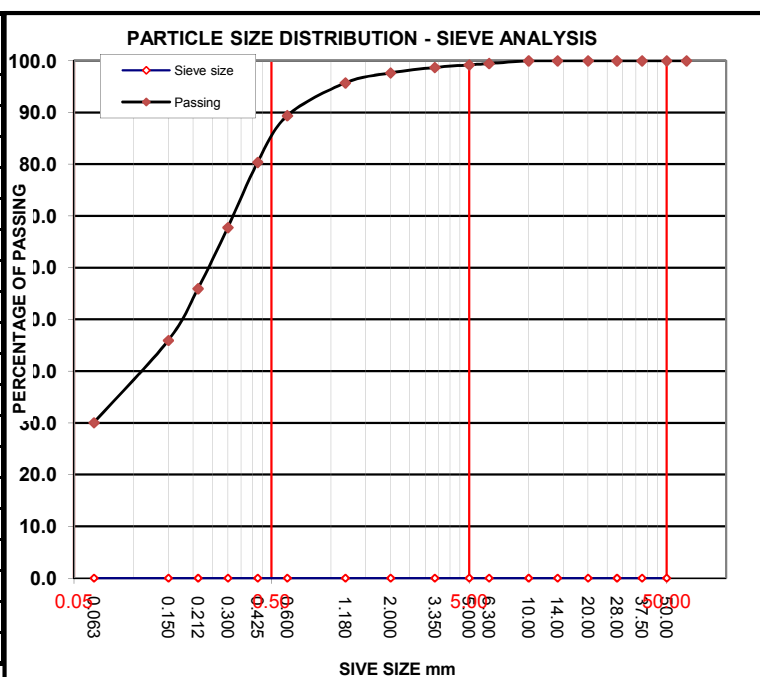
### Test Information:

Initial mass of sample as received: 503.5 g  
Mass of dry sample before washing: 304.3 g  
Mass of dry sample after washing: 218.0 g  
Moisture content: 65.46 %  
Silt content: 29.81 %  
Mass of sample for grading: 304.3 g

### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	0.0	0.0	100.00
10.000	0.0	0.0	100.00
6.300	1.6	0.5	99.47
5.000	0.8	0.3	99.21
3.350	1.5	0.5	98.72
2.000	3.2	1.1	97.67
1.180	5.9	1.9	95.73
0.600	19.3	6.3	89.39
0.425	27.4	9.0	80.38
0.300	38.4	12.6	67.76
0.212	36.0	11.8	55.93
0.150	30.4	10.0	45.94
0.063	48.4	15.9	30.04

Pan 90.7  
Total 304.3



### Deviation from Standard:

Nil

### Remarks:

Sample included some shells and organic content

### Prepared By:



Jessica Farrugia  
Quality Manager

### Approved By:



Chris Magro  
Laboratory Manager

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Terracore Ltd,

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Registration No.: C32227

Directors: Alfred Xerri

Filename: J2094 Soil TCR042 PSD009.xls

## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

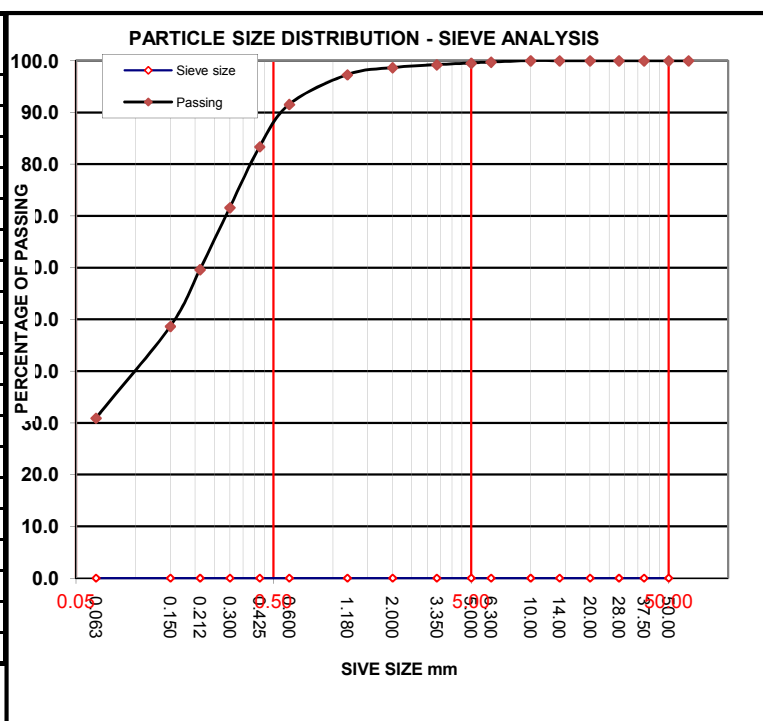
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Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	02/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test reference no:	PSD010
				Tested by:	MH, LS
				Date of test:	02/10/2014

Sample Information:		Test Information:	
Sample ref Nº:	140916 - G8	Initial mass of sample as received:	513.3 g
Sampling location:	BH G8Depth: 5.45 - 6.45m	Mass of dry sample before washing:	306.7 g
Sample description:	Soil	Mass of dry sample after washing:	216.5 g
Date of sampling:	16/09/2014	Moisture content:	67.36 %
Type of material:	Soil	Silt content:	30.58 %
		Mass of sample for grading:	306.7 g



### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	0.0	0.0	100.00
10.000	0.0	0.0	100.00
6.300	0.8	0.3	99.74
5.000	0.6	0.2	99.54
3.350	1.0	0.3	99.22
2.000	1.7	0.6	98.66
1.180	4.2	1.4	97.29
0.600	17.6	5.7	91.56
0.425	25.1	8.2	83.37
0.300	36.1	11.8	71.60
0.212	36.7	12.0	59.63
0.150	33.7	11.0	48.65
0.063	54.4	17.7	30.91

Pan 93.8  
Total 306.7



Deviation from Standard:	Remarks:
Nil	Sample included some shells and organic content

Prepared By:	Approved By:
 Jessica Farrugia Quality Manager	 Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

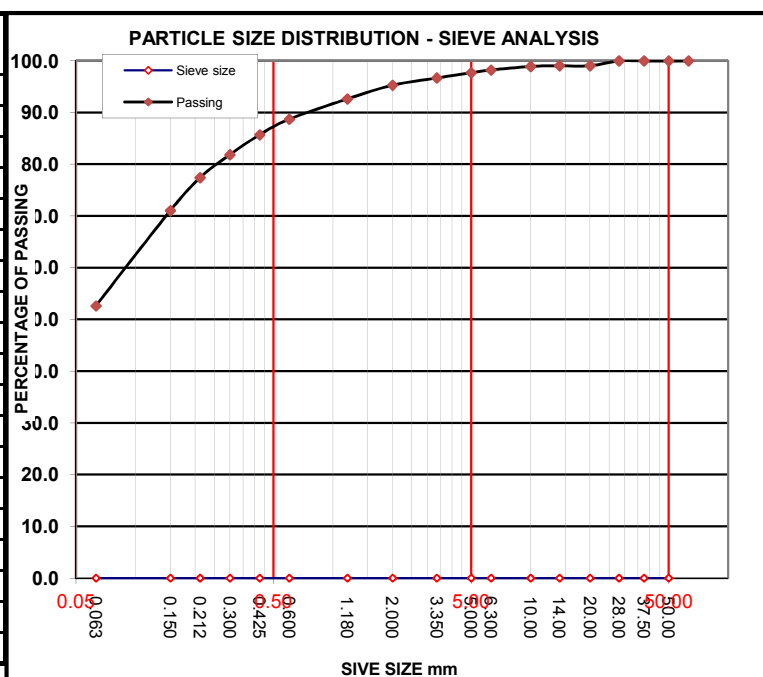
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Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	02/10/2014
		Location/Town:	Delimara	Client/Job Nº:	J2094
Attn:	Giorgos Rousopoulos			Test reference no:	PSD011
Client Tel Nº:	306972019434			Tested by:	MH, LS
				Date of test:	02/10/2014

Sample Information:		Test Information:	
Sample ref Nº:	140916 - G8	Initial mass of sample as received:	896.4 g
Sampling location:	BH G8 Depth: 8.9 - 9.9m	Mass of dry sample before washing:	585.4 g
Sample description:	Soil	Mass of dry sample after washing:	295.3 g
Date of sampling:	16/09/2014	Moisture content:	53.13 %
Type of material:	Soil	Silt content:	52.49 %
		Mass of sample for grading:	585.4 g

### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	5.5	0.9	99.06
14.000	0.0	0.0	99.06
10.000	0.8	0.1	98.92
6.300	4.1	0.7	98.22
5.000	3.0	0.5	97.71
3.350	6.0	1.0	96.69
2.000	8.2	1.4	95.29
1.180	15.5	2.6	92.64
0.600	23.0	3.9	88.71
0.425	17.6	3.0	85.70
0.300	22.6	3.9	81.84
0.212	26.0	4.4	77.40
0.150	37.3	6.4	71.03
0.063	107.8	18.4	52.61

Pan 307.3  
Total 585.4



Deviation from Standard:	Remarks:
Nil	Sample included some shells and organic content (Retained till 2mm - All shells)

Prepared By:	Approved By:
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

## TEST CERTIFICATE

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

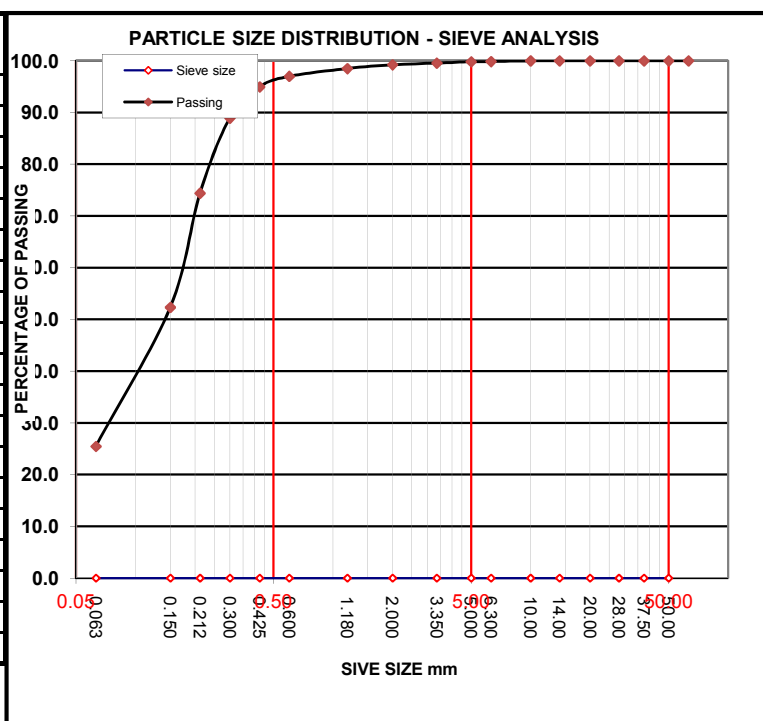
Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR045
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	02/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test reference no:	PSD012
				Tested by:	MH, LS
				Date of test:	02/10/2014

Sample Information:		Test Information:	
Sample ref Nº:	140916 - G8	Initial mass of sample as received:	826.5 g
Sampling location:	BH G8 Depth: 10.9 - 11.5m	Mass of dry sample before washing:	595.9 g
Sample description:	Soil	Mass of dry sample after washing:	453.4 g
Date of sampling:	16/09/2014	Moisture content:	38.70 %
Type of material:	Soil	Silt content:	25.10 %
		Mass of sample for grading:	595.9 g



### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	0.0	0.0	100.00
10.000	0.0	0.0	100.00
6.300	0.8	0.1	99.87
5.000	0.2	0.0	99.83
3.350	1.6	0.3	99.56
2.000	1.9	0.3	99.24
1.180	4.4	0.7	98.51
0.600	9.0	1.5	97.00
0.425	12.1	2.0	94.97
0.300	36.1	6.1	88.91
0.212	86.4	14.5	74.41
0.150	131.5	22.1	52.34
0.063	160.2	26.9	25.46

Pan 149.6  
Total 595.9



Deviation from Standard:	Remarks:
Nil	Sample included some shells and organic content

Prepared By:	Approved By:
 Jessica Farrugia Quality Manager	 Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

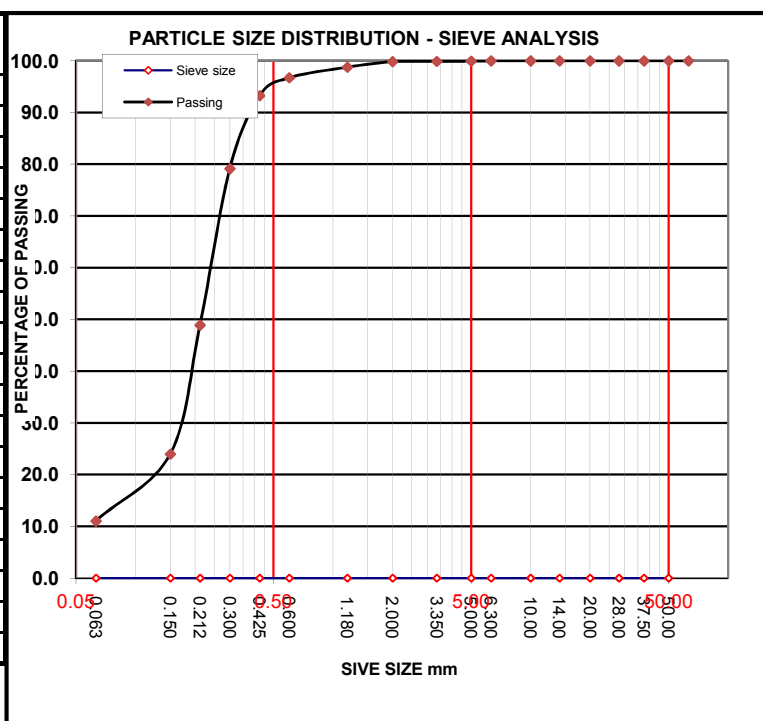
Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR046
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	02/10/2014
		Location/Town:	Delimara	Client/Job Nº:	J2094
Attn:	Giorgos Rousopoulos			Test reference no:	PSD013
Client Tel Nº:	306972019434			Tested by:	MH, LS
				Date of test:	02/10/2014

Sample Information:		Test Information:	
Sample ref Nº:	140915 - G9	Initial mass of sample as received:	306.1 g
Sampling location:	BH G9 Depth: 1m	Mass of dry sample before washing:	186.9 g
Sample description:	Soil	Mass of dry sample after washing:	169.7 g
Date of sampling:	15/09/2014	Moisture content:	63.78 %
Type of material:	Soil	Silt content:	9.58 %
		Mass of sample for grading:	186.9 g



### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	0.0	0.0	100.00
10.000	0.0	0.0	100.00
6.300	0.0	0.0	100.00
5.000	0.1	0.1	99.95
3.350	0.1	0.1	99.89
2.000	0.1	0.1	99.84
1.180	2.0	1.1	98.77
0.600	3.8	2.0	96.74
0.425	6.5	3.5	93.26
0.300	26.4	14.1	79.13
0.212	56.5	30.2	48.90
0.150	46.6	24.9	23.97
0.063	24.2	12.9	11.02

Pan 17.9  
Total 186.9



Deviation from Standard:	Remarks:
Nil	Sample included a lot of organic content

Prepared By:	Approved By:
	
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

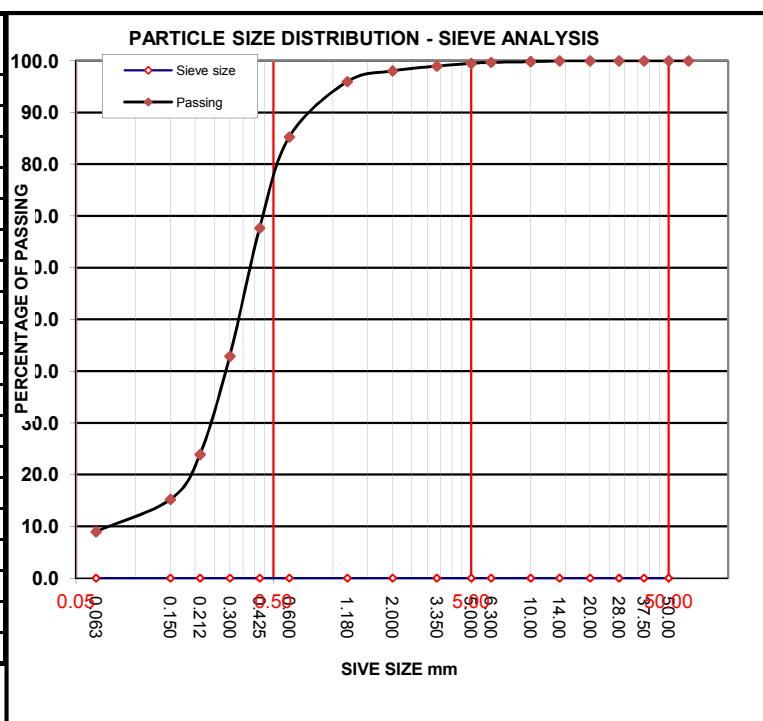
Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR047
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	02/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test reference no:	PSD014
				Tested by:	MH, LS
				Date of test:	02/10/2014

Sample Information:		Test Information:	
Sample ref Nº:	140915 - G9	Initial mass of sample as received:	602.1 g
Sampling location:	BH G9 Depth: 3 - 4m	Mass of dry sample before washing:	440.6 g
Sample description:	Soil	Mass of dry sample after washing:	403.5 g
Date of sampling:	15/09/2014	Moisture content:	36.65 %
Type of material:	Soil	Silt content:	8.90 %
		Mass of sample for grading:	440.6 g



### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	0.0	0.0	100.00
10.000	0.7	0.2	99.84
6.300	0.6	0.1	99.70
5.000	0.9	0.2	99.50
3.350	2.3	0.5	98.98
2.000	4.1	0.9	98.05
1.180	9.1	2.1	95.98
0.600	47.2	10.7	85.27
0.425	77.5	17.6	67.68
0.300	109.2	24.8	42.90
0.212	83.7	19.0	23.90
0.150	38.3	8.7	15.21
0.063	27.5	6.2	8.97

Pan 39.2  
Total 440.6



Deviation from Standard:	Remarks:
Nil	Sample included organic content and some shells

Prepared By:	Approved By:
	
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

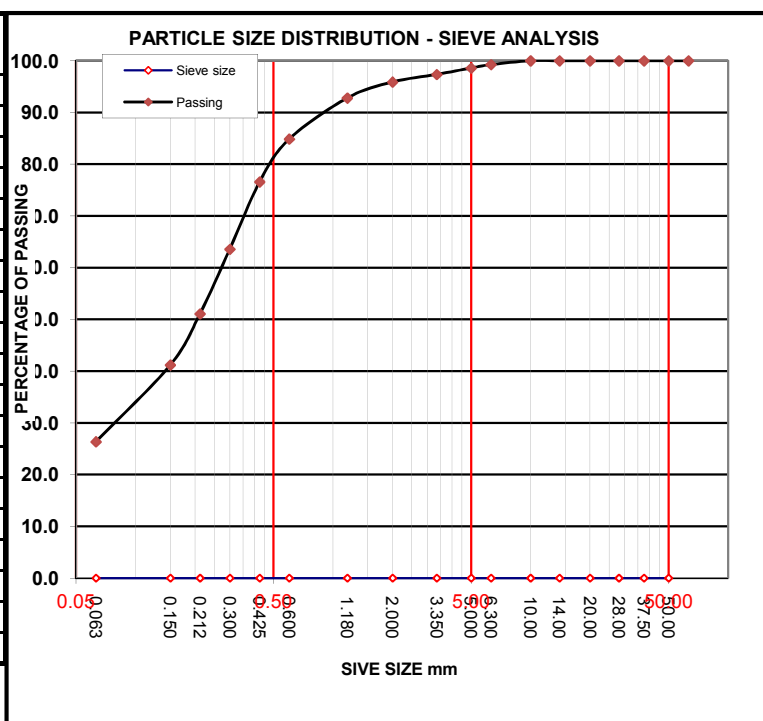
Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR048
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	02/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test reference no:	PSD015
				Tested by:	MH, LS
				Date of test:	02/10/2014

Sample Information:		Test Information:	
Sample ref Nº:	140915 - G9	Initial mass of sample as received:	318.7 g
Sampling location:	BH G9 Depth: 5.3 - 5.5m	Mass of dry sample before washing:	204.2 g
Sample description:	Soil	Mass of dry sample after washing:	154.0 g
Date of sampling:	15/09/2014	Moisture content:	56.07 %
Type of material:	Soil	Silt content:	25.47 %
		Mass of sample for grading:	204.2 g



### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	0.0	0.0	100.00
10.000	0.0	0.0	100.00
6.300	1.5	0.7	99.27
5.000	1.4	0.7	98.58
3.350	2.5	1.2	97.36
2.000	3.0	1.5	95.89
1.180	6.3	3.1	92.80
0.600	16.2	7.9	84.87
0.425	16.9	8.3	76.59
0.300	26.6	13.0	63.57
0.212	25.5	12.5	51.08
0.150	20.2	9.9	41.19
0.063	30.3	14.8	26.35

Pan 52  
Total 204.2



Deviation from Standard:	Remarks:
Nil	Sample included shells and organic content

Prepared By:	Approved By:
	
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

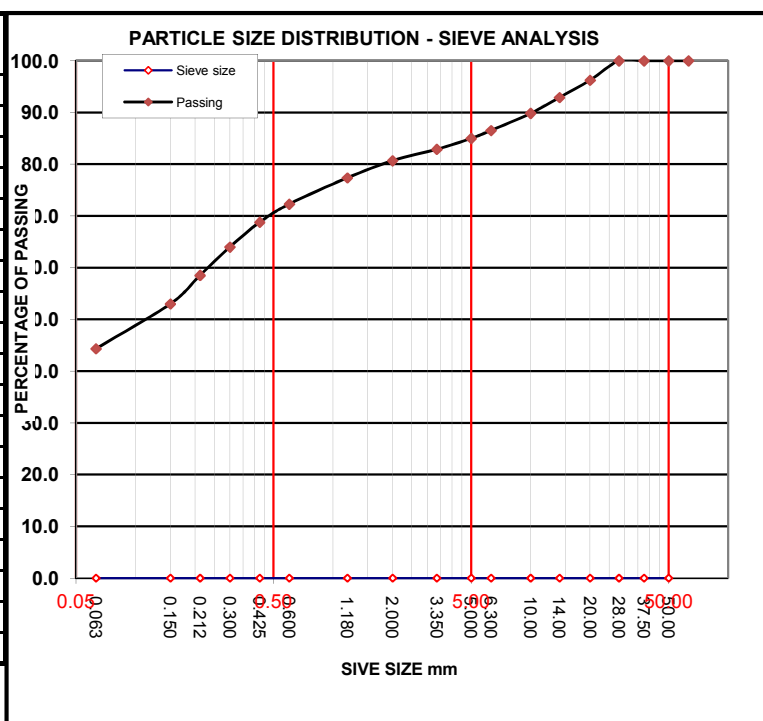
Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR049
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	02/10/2014
		Location/Town:	Delimara	Client/Job Nº:	J2094
Attn:	Giorgos Rousopoulos			Test reference no:	PSD016
Client Tel Nº:	306972019434			Tested by:	MH, LS
				Date of test:	02/10/2014

Sample Information:		Test Information:	
Sample ref Nº:	140915 - G9	Initial mass of sample as received:	504.7 g
Sampling location:	BH G9 Depth: 8.65 - 9.1m	Mass of dry sample before washing:	385.7 g
Sample description:	Soil	Mass of dry sample after washing:	219.8 g
Date of sampling:	15/09/2014	Moisture content:	30.85 %
Type of material:	Soil	Silt content:	43.89 %
		Mass of sample for grading:	385.7 g



### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	14.5	3.8	96.24
14.000	12.9	3.3	92.90
10.000	11.8	3.1	89.84
6.300	12.8	3.3	86.52
5.000	5.9	1.5	84.99
3.350	8.1	2.1	82.89
2.000	8.5	2.2	80.68
1.180	12.8	3.3	77.37
0.600	19.6	5.1	72.28
0.425	13.5	3.5	68.78
0.300	18.5	4.8	63.99
0.212	21.1	5.5	58.52
0.150	21.3	5.5	52.99
0.063	33.4	8.7	44.33

Pan 169.3  
Total 385.7



Deviation from Standard:	Remarks:
Nil	Sample included shells and organic content

Prepared By:	Approved By:
	
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR050
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	02/10/2014
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test reference no:	PSD017
				Tested by:	MH, LS
				Date of test:	02/10/2014

### Sample Information:

Sample ref Nº: 140912 - G10  
Sampling location: BH G10 Depth: 2.3 - 2.7m  
Sample description: Soil  
Date of sampling: 12/09/2014  
Type of material: Soil

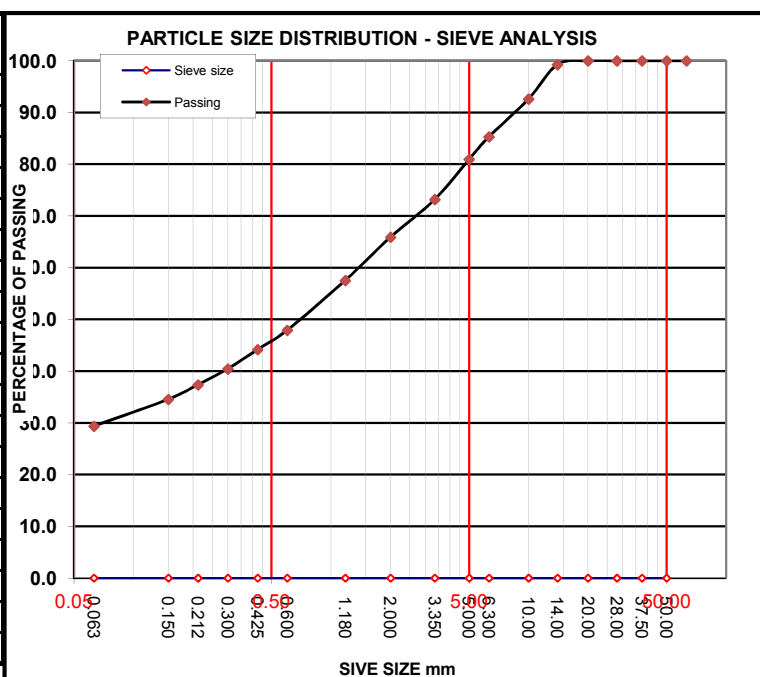
### Test Information:

Initial mass of sample as received: 494.4 g  
Mass of dry sample before washing: 390.4 g  
Mass of dry sample after washing: 277.1 g  
Moisture content: 26.64 %  
Silt content: 29.28 %  
Mass of sample for grading: 390.4 g

### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	2.9	0.7	99.26
10.000	26.0	6.7	92.60
6.300	28.5	7.3	85.30
5.000	17.0	4.4	80.94
3.350	30.3	7.8	73.18
2.000	28.5	7.3	65.88
1.180	32.6	8.4	57.53
0.600	37.6	9.6	47.90
0.425	14.6	3.7	44.16
0.300	14.6	3.7	40.42
0.212	12.0	3.1	37.35
0.150	11.0	2.8	34.53
0.063	20.3	5.2	29.33

Pan 114.3  
Total 390.4



### Deviation from Standard:

Nil

### Remarks:

Sample included a small amount of organic content

### Prepared By:

Jessica Farrugia  
Quality Manager

### Approved By:

Chris Magro  
Laboratory Manager

# TEST CERTIFICATE

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E: info@terracoiremalta.com W: www.terracoiremalta.com

Registration No.: C32227

Directors: Alfred Xerri

Filename: J2094 Soil TCR050 PSD017.xls

## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

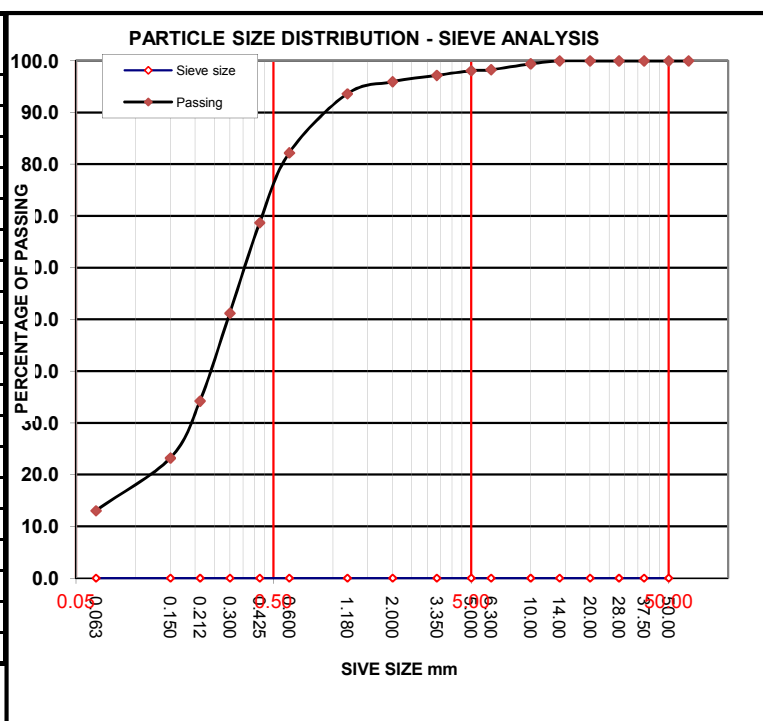
Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR051
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	02/10/2014
		Location/Town:	Delimara	Client/Job Nº:	J2094
Attn:	Giorgos Rousopoulos			Test reference no:	PSD018
Client Tel Nº:	306972019434			Tested by:	MH, LS
				Date of test:	02/10/2014

Sample Information:		Test Information:	
Sample ref Nº:	140912 - G10	Initial mass of sample as received:	612.2 g
Sampling location:	BH G10 Depth: 3.3 - 4.3m	Mass of dry sample before washing:	450.8 g
Sample description:	Soil	Mass of dry sample after washing:	397.2 g
Date of sampling:	12/09/2014	Moisture content:	35.80 %
Type of material:	Soil	Silt content:	12.73 %
		Mass of sample for grading:	450.8 g



### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	0.0	0.0	100.00
10.000	2.6	0.6	99.42
6.300	5.1	1.1	98.29
5.000	0.9	0.2	98.09
3.350	4.0	0.9	97.20
2.000	5.6	1.2	95.96
1.180	10.5	2.3	93.63
0.600	51.5	11.4	82.21
0.425	60.9	13.5	68.70
0.300	78.8	17.5	51.22
0.212	76.6	17.0	34.23
0.150	49.7	11.0	23.20
0.063	45.9	10.2	13.02

Pan 57.4  
Total 450.8



Deviation from Standard:	Remarks:
Nil	Sample included organic content and shells

Prepared By:	Approved By:
	
Jessica Farrugia Quality Manager	Chris Magro Laboratory Manager

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## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR052
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	02/10/2014
		Location/Town:	Delimara	Client/Job Nº:	J2094
Attn:	Giorgos Rousopoulos			Test reference no:	PSD019
Client Tel Nº:	306972019434			Tested by:	MH, LS
				Date of test:	02/10/2014

### Sample Information:

Sample ref Nº: 140912 - G10  
Sampling location: BH G10 Depth: 6.5 - 6.7m  
Sample description: Soil  
Date of sampling: 12/09/2014  
Type of material: Soil

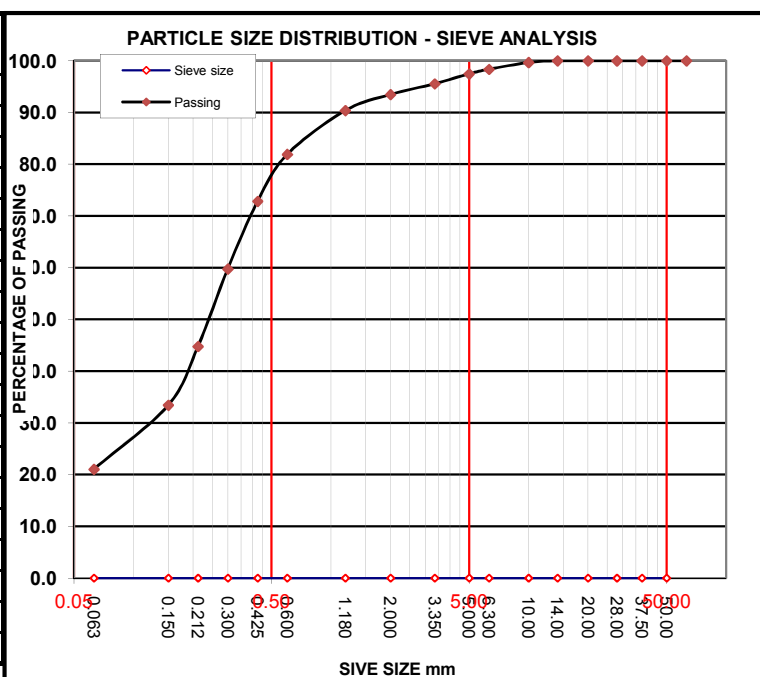
### Test Information:

Initial mass of sample as received: 666.5 g  
Mass of dry sample before washing: 465.3 g  
Mass of dry sample after washing: 371.6 g  
Moisture content: 43.24 %  
Silt content: 21.00 %  
Mass of sample for grading: 465.3 g

### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	0.0	0.0	100.00
10.000	1.6	0.3	99.66
6.300	6.1	1.3	98.35
5.000	4.1	0.9	97.46
3.350	8.9	1.9	95.55
2.000	9.7	2.1	93.47
1.180	14.4	3.1	90.37
0.600	39.4	8.5	81.90
0.425	42.2	9.1	72.83
0.300	60.9	13.1	59.75
0.212	69.7	15.0	44.77
0.150	52.8	11.3	33.42
0.063	57.7	12.4	21.02

Pan 97.7  
Total 465.3



### Deviation from Standard:

Nil

### Remarks:

Sample included organic contents and some shells

### Prepared By:

Jessica Farrugia  
Quality Manager

### Approved By:

Chris Magro  
Laboratory Manager

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E: info@terracoiremalta.com W: www.terracoiremalta.com

Registration No.: C32227

Directors: Alfred Xerri

Filename: J2094 Soil TCR052 PSD019.xls

## Laboratory Test Certificate Determination of Particle Size distribution according to BS 1377 - 2

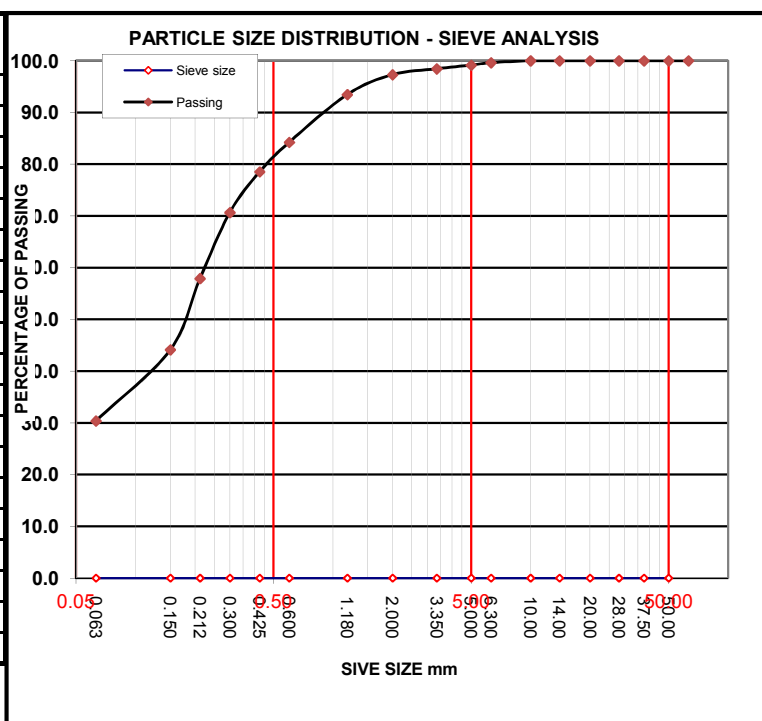
Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR053
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece		Geotechnical Investigation	Date of certificate:	02/10/2014
		Location/Town:	Delimara	Client/Job Nº:	J2094
Attn:	Giorgos Rousopoulos			Test reference no:	PSD020
Client Tel Nº:	306972019434			Tested by:	MH, LS
				Date of test:	02/10/2014

Sample Information:		Test Information:	
Sample ref Nº:	140912 - G10	Initial mass of sample as received:	750.7 g
Sampling location:	BH G10 Depth: 8.7 - 9.1m	Mass of dry sample before washing:	506.4 g
Sample description:	Soil	Mass of dry sample after washing:	358.6 g
Date of sampling:	12/09/2014	Moisture content:	48.24 %
Type of material:	Soil	Silt content:	29.90 %
		Mass of sample for grading:	506.4 g



### Results:

Sieve size	Retained	Retained	Passing
mm	g	%	%
63.00	0.0	0.0	100.00
50.000	0.0	0.0	100.00
37.500	0.0	0.0	100.00
28.000	0.0	0.0	100.00
20.000	0.0	0.0	100.00
14.000	0.0	0.0	100.00
10.000	0.0	0.0	100.00
6.300	1.9	0.4	99.62
5.000	2.4	0.5	99.15
3.350	3.6	0.7	98.44
2.000	5.7	1.1	97.31
1.180	19.5	3.9	93.46
0.600	46.7	9.2	84.24
0.425	28.9	5.7	78.53
0.300	39.9	7.9	70.66
0.212	64.6	12.8	57.90
0.150	69.7	13.8	44.14
0.063	69.7	13.8	30.37

Pan 151.4  
Total 506.4



Deviation from Standard:	Remarks:
Nil	Sample included organic contents and shells

Prepared By:	Approved By:
 Jessica Farrugia Quality Manager	 Chris Magro Laboratory Manager

## TEST CERTIFICATE

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**Laboratory Test Certificate**  
**Determination of Particle Density according to BS 1377 - 2: 1990**

Client name: J&P AVAX S.A.	Project: Onshore & Offshore Geotechnical Investigation	Certificate No: TCR186
Client address: 29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town: Delimara	Date of certificate: 16/10/2014
Attn: Giorgos Rousopoulos		Client/Job No: J2094
Client Tel No: 306972019434		Test Reference No: PD019
		Tested by: MH
		Date of test: 10/16/2014

**Test Information**  
 Sample Ref No: 140930 - Soil  
 Sampling Location: BH G1  
 Sample Description: Passing 2mm Sample 4  
 Date of sampling: 9/30/2014  
 Type of Material: Soil

**Results**  
  
 Method used for particle density: Clause 8.3 Small Pyknometer Method  
  

Sample No: 1	Density (mg/m3): <u>2.584</u>
Sample No: 2	Density (mg/m3): <u>2.589</u>

  
 Specific Gravity of Aggregate:  
  

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$
  

$$G_s = \underline{2.587} \text{ mg/m}^3$$

**Deviation from Standard:**  
  



Nil


  

**Remarks:**  
  

Nil

<b>Prepared By:</b>  <hr/> Jessica Farrugia Quality Manager	<b>Approved By:</b>  <hr/> Chris Magro Lab Manager
---	--

  
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**Laboratory Test Certificate**  
**Determination of Particle Density according to BS 1377 - 2: 1990**

Client name: J&P AVAX S.A.	Project: Onshore & Offshore Geotechnical Investigation	Certificate No: TCR187
Client address: 29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town: Delimara	Date of certificate: 16/10/2014
Attn: Giorgos Rousopoulos		Client/Job No: J2094
Client Tel No: 306972019434		Test Reference No: PD020
		Tested by: MH
		Date of test: 10/16/2014

**Test Information**  
 Sample Ref No: 140930 - Soil  
 Sampling Location: BH G1  
 Sample Description: Passing 2mm Sample 11  
 Date of sampling: 9/30/2014  
 Type of Material: Soil

**Results**  
  
 Method used for particle density: Clause 8.3 Small Pyknometer Method  
  

Sample No: 1	Density (mg/m3): <u>2.561</u>
Sample No: 2	Density (mg/m3): <u>2.540</u>

  
 Specific Gravity of Aggregate:  
  

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$
  

$$G_s = \underline{2.550} \text{ mg/m}^3$$

**Deviation from Standard:**  
  



Nil


  

**Remarks:**  
  

Nil

<b>Prepared By:</b>  <hr/> Jessica Farrugia Quality Manager	<b>Approved By:</b>  <hr/> Chris Magro Lab Manager
---	--

  
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## Laboratory Test Certificate

### Determination of Particle Density according to BS 1377 - 2: 1990

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate Nº:	TCR186
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	16/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	PD019
				Tested by:	MH
				Date of test:	16/10/2014

#### Test Information

Sample Ref No: 140930 - Soil  
 Sampling Location: BH G1  
 Sample Description: Passing 2mm Sample 4  
 Date of sampling: 30/09/2014  
 Type of Material: Soil

#### Results

Method used for particle density: Clause 8.3 Small Pyknometer Method

Sample No: 1 Density (mg/m3): 2.584

Sample No: 2 Density (mg/m3): 2.589

Specific Gravity of Aggregate:

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$

$$G_s = \underline{2.587} \text{ mg/m}^3$$

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Lab Manager

## TEST CERTIFICATE

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## Laboratory Test Certificate

### Determination of Particle Density according to BS 1377 - 2: 1990

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate Nº:	TCR187
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	16/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	PD020
				Tested by:	MH
				Date of test:	16/10/2014

#### Test Information

Sample Ref No: 140930 - Soil  
 Sampling Location: BH G1  
 Sample Description: Passing 2mm Sample 11  
 Date of sampling: 30/09/2014  
 Type of Material: Soil

#### Results

Method used for particle density: Clause 8.3 Small Pyknometer Method

Sample No: 1 Density (mg/m<sup>3</sup>): 2.561

Sample No: 2 Density (mg/m<sup>3</sup>): 2.540

Specific Gravity of Aggregate:

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$

$$G_s = \underline{2.550} \text{ mg/m}^3$$

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Lab Manager

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## Laboratory Test Certificate

### Determination of Particle Density according to BS 1377 - 2: 1990

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate Nº:	TCR225
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	17/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	PD021
				Tested by:	MH
				Date of test:	16/10/2014

#### Test Information

Sample Ref No: 141001 - Soil  
 Sampling Location: BH G2  
 Sample Description: Passing 2mm Sample 6  
 Date of sampling: 01/10/2014  
 Type of Material: Soil

#### Results

Method used for particle density: Clause 8.3 Small Pyknometer Method

Sample No: 1 Density (mg/m3): 2.435

Sample No: 2 Density (mg/m3): 2.417

Specific Gravity of Aggregate:

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$

$$G_s = \underline{2.426} \text{ mg/m}^3$$

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Lab Manager

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## Laboratory Test Certificate

### Determination of Particle Density according to BS 1377 - 2: 1990

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate Nº:	TCR226
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	17/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	PD022
				Tested by:	MH
				Date of test:	16/10/2014

#### Test Information

Sample Ref No: 141001 - Soil  
 Sampling Location: BH G2  
 Sample Description: Passing 2mm Sample 7  
 Date of sampling: 01/10/2014  
 Type of Material: Soil

#### Results

Method used for particle density: Clause 8.3 Small Pyknometer Method

Sample No: 1 Density (mg/m<sup>3</sup>): 2.682

Sample No: 2 Density (mg/m<sup>3</sup>): 2.674

Specific Gravity of Aggregate:

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$

$$G_s = \underline{2.678} \text{ mg/m}^3$$

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Lab Manager

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## Laboratory Test Certificate

### Determination of Particle Density according to BS 1377 - 2: 1990

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate Nº:	TCR227
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	17/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	PD023
				Tested by:	MH
				Date of test:	16/10/2014

#### Test Information

Sample Ref No: 141001 - Soil  
 Sampling Location: BH G2  
 Sample Description: Passing 2mm Sample 9  
 Date of sampling: 01/10/2014  
 Type of Material: Soil

#### Results

Method used for particle density: Clause 8.3 Small Pyknometer Method

Sample No: 1 Density (mg/m<sup>3</sup>): 2.444

Sample No: 2 Density (mg/m<sup>3</sup>): 2.441

Specific Gravity of Aggregate:

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$

$$G_s = \underline{2.443} \text{ mg/m}^3$$

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Lab Manager

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Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate Nº:	TCR228
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	17/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	PD024
				Tested by:	MH
				Date of test:	16/10/2014

#### Test Information

Sample Ref No: 141001 - Soil  
 Sampling Location: BH G2  
 Sample Description: Passing 2mm Sample 12  
 Date of sampling: 01/10/2014  
 Type of Material: Soil

#### Results

Method used for particle density: Clause 8.3 Small Pyknometer Method

Sample No: 1 Density (mg/m<sup>3</sup>): 2.520

Sample No: 2 Density (mg/m<sup>3</sup>): 2.523

Specific Gravity of Aggregate:

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$

$$G_s = \underline{2.522} \text{ mg/m}^3$$

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Lab Manager

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## Laboratory Test Certificate

### Determination of Particle Density according to BS 1377 - 2: 1990

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate Nº:	TCR225
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	17/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	PD021
				Tested by:	MH
				Date of test:	16/10/2014

#### Test Information

Sample Ref No: 141001 - Soil  
 Sampling Location: BH G2  
 Sample Description: Passing 2mm Sample 6  
 Date of sampling: 01/10/2014  
 Type of Material: Soil

#### Results

Method used for particle density: Clause 8.3 Small Pyknometer Method

Sample No: 1 Density (mg/m<sup>3</sup>): 2.435

Sample No: 2 Density (mg/m<sup>3</sup>): 2.417

Specific Gravity of Aggregate:

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$

$$G_s = \underline{2.426} \text{ mg/m}^3$$

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Lab Manager

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### Determination of Particle Density according to BS 1377 - 2: 1990

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate Nº:	TCR226
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	17/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	PD022
				Tested by:	MH
				Date of test:	16/10/2014

#### Test Information

Sample Ref No: 141001 - Soil  
 Sampling Location: BH G2  
 Sample Description: Passing 2mm Sample 7  
 Date of sampling: 01/10/2014  
 Type of Material: Soil

#### Results

Method used for particle density: Clause 8.3 Small Pyknometer Method

Sample No: 1 Density (mg/m<sup>3</sup>): 2.682

Sample No: 2 Density (mg/m<sup>3</sup>): 2.674

Specific Gravity of Aggregate:

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$

$$G_s = \underline{2.678} \text{ mg/m}^3$$

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Lab Manager

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### Determination of Particle Density according to BS 1377 - 2: 1990

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate Nº:	TCR227
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	17/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	PD023
				Tested by:	MH
				Date of test:	16/10/2014

#### Test Information

Sample Ref No: 141001 - Soil  
 Sampling Location: BH G2  
 Sample Description: Passing 2mm Sample 9  
 Date of sampling: 01/10/2014  
 Type of Material: Soil

#### Results

Method used for particle density: Clause 8.3 Small Pyknometer Method

Sample No: 1 Density (mg/m3): 2.444

Sample No: 2 Density (mg/m3): 2.441

Specific Gravity of Aggregate:

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$

$$G_s = \underline{2.443} \text{ mg/m}^3$$

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Lab Manager

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### Determination of Particle Density according to BS 1377 - 2: 1990

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate Nº:	TCR228
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	17/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	PD024
				Tested by:	MH
				Date of test:	16/10/2014

#### Test Information

Sample Ref No: 141001 - Soil  
 Sampling Location: BH G2  
 Sample Description: Passing 2mm Sample 12  
 Date of sampling: 01/10/2014  
 Type of Material: Soil

#### Results

Method used for particle density: Clause 8.3 Small Pyknometer Method

Sample No: 1 Density (mg/m<sup>3</sup>): 2.520

Sample No: 2 Density (mg/m<sup>3</sup>): 2.523

Specific Gravity of Aggregate:

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$

$$G_s = \underline{2.522} \text{ mg/m}^3$$

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Lab Manager

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## Laboratory Test Certificate

### Determination of Particle Density according to BS 1377 - 2: 1990

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate Nº:	TCR282
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	PD025
				Tested by:	MH
				Date of test:	18/10/2014

#### Test Information

Sample Ref No: 141004 - Soil  
 Sampling Location: BH G3  
 Sample Description: Passing 2mm Sample 4  
 Date of sampling: 04/10/2014  
 Type of Material: Soil

#### Results

Method used for particle density: Clause 8.3 Small Pyknometer Method

Sample No: 1 Density (mg/m<sup>3</sup>): 2.637

Sample No: 2 Density (mg/m<sup>3</sup>): 2.635

Specific Gravity of Aggregate:

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$

$$G_s = \underline{2.636} \text{ mg/m}^3$$

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Lab Manager

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## Laboratory Test Certificate

### Determination of Particle Density according to BS 1377 - 2: 1990

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate Nº:	TCR324
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	23/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	PD032
				Tested by:	MH
				Date of test:	23/10/2014

#### Test Information

Sample Ref No: 141004 - Soil  
 Sampling Location: BH G3  
 Sample Description: Passing 2mm Sample 5  
 Date of sampling: 04/10/2014  
 Type of Material: Soil

#### Results

Method used for particle density: Clause 8.3 Small Pyknometer Method

Sample No: 1 Density (mg/m<sup>3</sup>): 2.624

Sample No: 2 Density (mg/m<sup>3</sup>): 2.636

Specific Gravity of Aggregate:

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$

$$G_s = \underline{2.630} \text{ mg/m}^3$$

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Lab Manager

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## Laboratory Test Certificate

### Determination of Particle Density according to BS 1377 - 2: 1990

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate Nº:	TCR282
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	20/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	PD025
				Tested by:	MH
				Date of test:	18/10/2014

#### Test Information

Sample Ref No: 141004 - Soil  
 Sampling Location: BH G3  
 Sample Description: Passing 2mm Sample 4  
 Date of sampling: 04/10/2014  
 Type of Material: Soil

#### Results

Method used for particle density: Clause 8.3 Small Pyknometer Method

Sample No: 1 Density (mg/m<sup>3</sup>): 2.637

Sample No: 2 Density (mg/m<sup>3</sup>): 2.635

Specific Gravity of Aggregate:

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$

$$G_s = \underline{2.636} \text{ mg/m}^3$$

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Lab Manager

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## Laboratory Test Certificate

### Determination of Particle Density according to BS 1377 - 2: 1990

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate Nº:	TCR324
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	23/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	PD032
				Tested by:	MH
				Date of test:	23/10/2014

#### Test Information

Sample Ref No: 141004 - Soil  
 Sampling Location: BH G3  
 Sample Description: Passing 2mm Sample 5  
 Date of sampling: 04/10/2014  
 Type of Material: Soil

#### Results

Method used for particle density: Clause 8.3 Small Pyknometer Method

Sample No: 1 Density (mg/m<sup>3</sup>): 2.624

Sample No: 2 Density (mg/m<sup>3</sup>): 2.636

Specific Gravity of Aggregate:

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$

$$G_s = \underline{2.630} \text{ mg/m}^3$$

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Lab Manager

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**Laboratory Test Certificate**  
**Determination of Particle Density according to BS 1377 - 2: 1990**

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate Nº:	TCR163
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	13/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	PD010
				Tested by:	MH
				Date of test:	13/10/2014

### Test Information

Sample Ref No: 140929 - Soil  
 Sampling Location: BH G4  
 Sample Description: Passing 2mm Sample 5  
 Date of sampling: 29/09/2014  
 Type of Material: Soil

### Results

Method used for particle density: Clause 8.3 Small Pyknometer Method

Sample No: 1 Density (mg/m3): 2.520

Sample No: 2 Density (mg/m3): 2.507

Specific Gravity of Aggregate:

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$

$$G_s = \underline{2.514} \text{ mg/m}^3$$

### Deviation from Standard:

Nil

### Remarks:

Nil

### Prepared By:



Jessica Farrugia  
Quality Manager

### Approved By:



Chris Magro  
Lab Manager

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## Laboratory Test Certificate

### Determination of Particle Density according to BS 1377 - 2: 1990

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate Nº:	TCR164
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	13/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	PD011
				Tested by:	MH
				Date of test:	13/10/2014

#### Test Information

Sample Ref No: 140929 - Soil  
 Sampling Location: BH G4  
 Sample Description: Passing 2mm Sample 6  
 Date of sampling: 29/09/2014  
 Type of Material: Soil

#### Results

Method used for particle density: Clause 8.3 Small Pyknometer Method

Sample No: 1 Density (mg/m<sup>3</sup>): 2.474

Sample No: 2 Density (mg/m<sup>3</sup>): 2.495

Specific Gravity of Aggregate:

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$

$$G_s = \underline{2.484} \text{ mg/m}^3$$

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Lab Manager

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## Laboratory Test Certificate

### Determination of Particle Density according to BS 1377 - 2: 1990

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate Nº:	TCR325
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	23/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	PD033
				Tested by:	MH
				Date of test:	23/10/2014

#### Test Information

Sample Ref No: 141003 - Soil  
 Sampling Location: BH G5  
 Sample Description: Passing 2mm Sample 4  
 Date of sampling: 03/10/2014  
 Type of Material: Soil

#### Results

Method used for particle density: Clause 8.3 Small Pyknometer Method

Sample No: 1 Density (mg/m<sup>3</sup>): 2.449

Sample No: 2 Density (mg/m<sup>3</sup>): 2.442

Specific Gravity of Aggregate:

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$

$$G_s = \underline{2.446} \text{ mg/m}^3$$

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Lab Manager

## TEST CERTIFICATE

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## Laboratory Test Certificate

### Determination of Particle Density according to BS 1377 - 2: 1990

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate Nº:	TCR326
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	23/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	PD034
				Tested by:	MH
				Date of test:	23/10/2014

#### Test Information

Sample Ref No: 141003 - Soil  
 Sampling Location: BH G5  
 Sample Description: Passing 2mm Sample 5  
 Date of sampling: 03/10/2014  
 Type of Material: Soil

#### Results

Method used for particle density: Clause 8.3 Small Pyknometer Method

Sample No: 1 Density (mg/m3): 2.559

Sample No: 2 Density (mg/m3): 2.541

Specific Gravity of Aggregate:

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$

$$G_s = \underline{2.550} \text{ mg/m}^3$$

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Lab Manager

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## Laboratory Test Certificate

### Determination of Particle Density according to BS 1377 - 2: 1990

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate Nº:	TCR325
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	23/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	PD033
				Tested by:	MH
				Date of test:	23/10/2014

#### Test Information

Sample Ref No: 141003 - Soil  
 Sampling Location: BH G5  
 Sample Description: Passing 2mm Sample 4  
 Date of sampling: 03/10/2014  
 Type of Material: Soil

#### Results

Method used for particle density: Clause 8.3 Small Pyknometer Method

Sample No: 1 Density (mg/m3): 2.449

Sample No: 2 Density (mg/m3): 2.442

Specific Gravity of Aggregate:

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$

$$G_s = \underline{2.446} \text{ mg/m}^3$$

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Lab Manager

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## Laboratory Test Certificate

### Determination of Particle Density according to BS 1377 - 2: 1990

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate Nº:	TCR326
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	23/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	PD034
				Tested by:	MH
				Date of test:	23/10/2014

#### Test Information

Sample Ref No: 141003 - Soil  
 Sampling Location: BH G5  
 Sample Description: Passing 2mm Sample 5  
 Date of sampling: 03/10/2014  
 Type of Material: Soil

#### Results

Method used for particle density: Clause 8.3 Small Pyknometer Method

Sample No: 1 Density (mg/m3): 2.559

Sample No: 2 Density (mg/m3): 2.541

Specific Gravity of Aggregate:

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$

$$G_s = \underline{2.550} \text{ mg/m}^3$$

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Lab Manager

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## Laboratory Test Certificate

### Determination of Particle Density according to BS 1377 - 2: 1990

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate Nº:	TCR169
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	13/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	PD012
				Tested by:	MH
				Date of test:	13/10/2014

#### Test Information

Sample Ref No: 140927 - Soil  
 Sampling Location: BH G6  
 Sample Description: Passing 2mm Sample 3  
 Date of sampling: 27/09/2014  
 Type of Material: Soil

#### Results

Method used for particle density: Clause 8.3 Small Pyknometer Method

Sample No: 1 Density (mg/m<sup>3</sup>): 2.524

Sample No: 2 Density (mg/m<sup>3</sup>): 2.517

Specific Gravity of Aggregate:

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$

$$G_s = \underline{2.521} \text{ mg/m}^3$$

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Lab Manager

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## Laboratory Test Certificate

### Determination of Particle Density according to BS 1377 - 2: 1990

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate Nº:	TCR170
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	13/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	PD013
				Tested by:	MH
				Date of test:	13/10/2014

#### Test Information

Sample Ref No: 140927 - Soil  
 Sampling Location: BH G6  
 Sample Description: Passing 2mm Sample 5  
 Date of sampling: 27/09/2014  
 Type of Material: Soil

#### Results

Method used for particle density: Clause 8.3 Small Pyknometer Method

Sample No: 1 Density (mg/m3): 2.391

Sample No: 2 Density (mg/m3): 2.386

Specific Gravity of Aggregate:

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$

$$G_s = \underline{2.388} \text{ mg/m}^3$$

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Lab Manager

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## Laboratory Test Certificate

### Determination of Particle Density according to BS 1377 - 2: 1990

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate Nº:	TCR171
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	13/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	PD014
				Tested by:	MH
				Date of test:	13/10/2014

#### Test Information

Sample Ref No: 140927 - Soil  
 Sampling Location: BH G6  
 Sample Description: Passing 2mm Sample 8  
 Date of sampling: 27/09/2014  
 Type of Material: Soil

#### Results

Method used for particle density: Clause 8.3 Small Pycnometer Method

Sample No: 1 Density (mg/m<sup>3</sup>): 2.398

Sample No: 2 Density (mg/m<sup>3</sup>): 2.412

Specific Gravity of Aggregate:

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$

$$G_s = \underline{2.405} \text{ mg/m}^3$$

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Lab Manager

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## Laboratory Test Certificate

### Determination of Particle Density according to BS 1377 - 2: 1990

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate Nº:	TCR172
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	13/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	PD015
				Tested by:	MH
				Date of test:	13/10/2014

#### Test Information

Sample Ref No: 140927 - Soil  
 Sampling Location: BH G6  
 Sample Description: Passing 2mm Sample 14  
 Date of sampling: 27/09/2014  
 Type of Material: Soil

#### Results

Method used for particle density: Clause 8.3 Small Pycnometer Method

Sample No: 1 Density (mg/m3): 2.584

Sample No: 2 Density (mg/m3): 2.577

Specific Gravity of Aggregate:

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$

$$G_s = \underline{2.580} \text{ mg/m}^3$$

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Lab Manager

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## Laboratory Test Certificate

### Determination of Particle Density according to BS 1377 - 2: 1990

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate Nº:	TCR174
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	14/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	PD016
				Tested by:	MH
				Date of test:	14/10/2014

#### Test Information

Sample Ref No: 140926 - Soil  
 Sampling Location: BH G7  
 Sample Description: Passing 2mm Sample 10  
 Date of sampling: 26/09/2014  
 Type of Material: Soil

#### Results

Method used for particle density: Clause 8.3 Small Pyknometer Method

Sample No: 1 Density (mg/m3): 2.480

Sample No: 2 Density (mg/m3): 2.476

Specific Gravity of Aggregate:

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$

$$G_s = \underline{2.478} \text{ mg/m}^3$$

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Lab Manager

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## Laboratory Test Certificate

### Determination of Particle Density according to BS 1377 - 2: 1990

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate Nº:	TCR175
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	14/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	PD017
				Tested by:	MH
				Date of test:	14/10/2014

#### Test Information

Sample Ref No: 140926 - Soil  
 Sampling Location: BH G7  
 Sample Description: Passing 2mm Sample 12  
 Date of sampling: 26/09/2014  
 Type of Material: Soil

#### Results

Method used for particle density: Clause 8.3 Small Pyknometer Method

Sample No: 1 Density (mg/m<sup>3</sup>): 2.383

Sample No: 2 Density (mg/m<sup>3</sup>): 2.403

Specific Gravity of Aggregate:

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$

$$G_s = \underline{2.393} \text{ mg/m}^3$$

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Lab Manager

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## Laboratory Test Certificate

### Determination of Particle Density according to BS 1377 - 2: 1990

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate Nº:	TCR176
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	14/10/2014
Attn:	Giorgos Rousopoulos			Client/Job Nº:	J2094
Client Tel Nº:	306972019434			Test Reference No:	PD018
				Tested by:	MH
				Date of test:	14/10/2014

#### Test Information

Sample Ref No: 140926 - Soil  
 Sampling Location: BH G7  
 Sample Description: Passing 2mm Sample 17  
 Date of sampling: 26/09/2014  
 Type of Material: Soil

#### Results

Method used for particle density: Clause 8.3 Small Pyknometer Method

Sample No: 1 Density (mg/m<sup>3</sup>): 2.508

Sample No: 2 Density (mg/m<sup>3</sup>): 2.489

Specific Gravity of Aggregate:

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$

$$G_s = \underline{2.498} \text{ mg/m}^3$$

#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:



Jessica Farrugia  
Quality Manager

#### Approved By:



Chris Magro  
Lab Manager

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**Laboratory Test Certificate**  
**Determination of Particle Density according to BS 1377 - 2: 1990**

Client name: J&P AVAX S.A.	Project: Onshore & Offshore Geotechnical Investigation	Certificate No: TCR037
Client address: 29, Maroussiou Holandriou Street	Location/Town: Delimara	Date of certificate: 02/10/2014
151-25 Maroussi Greece		Client/Job No: J2094
Attn: Giorgos Rousopoulos		Test Reference No: PD005
Client Tel No: 306972019434		Tested by: MH
		Date of test: 01/10/2014

**Test Information**  
 Sample Ref No: 140916 - Soil  
 Sampling Location: BH G8  
 Sample Description: Passing 2mm Depth 8.9 - 9.9m  
 Date of sampling: 16/09/2014  
 Type of Material: Soil

**Results**  
  
 Method used for particle density: Clause 8.3 Small Pyknometer Method
  
  

Sample No: 1	Density (mg/m3): <u>2.569</u>
Sample No: 2	Density (mg/m3): <u>2.556</u>

  
 Specific Gravity of Aggregate:
 
$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$
  

$$G_s = \underline{2.563} \text{ mg/m}^3$$

**Deviation from Standard:**  



Nil


  

**Remarks:**  

Nil

<b>Prepared By:</b>  <hr/> Jessica Farrugia Quality Manager	<b>Approved By:</b>  <hr/> Chris Magro Lab Manager
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## Laboratory Test Certificate

### Determination of Particle Density according to BS 1377 - 2: 1990

Client name: J&P AVAX S.A.	Project: Onshore & Offshore Geotechnical Investigation	Certificate No: TCR038
Client address: 29, Maroussiou	Location/Town: Delimara	Date of certificate: 02/10/2014
Holandriou Street		Client/Job No: J2094
151-25 Maroussi Greece		Test Reference No: PD006
Attn: Giorgos Rousopoulos		Tested by: MH
Client Tel No: 306972019434		Date of test: 01/10/2014

**Test Information**  
 Sample Ref No: 140916 - Soil  
 Sampling Location: BH G8  
 Sample Description: Passing 2mm Depth 10.9 - 11.5m  
 Date of sampling: 16/09/2014  
 Type of Material: Soil

**Results**  
  
 Method used for particle density: Clause 8.3 Small Pyknometer Method  
  

Sample No: 1	Density (mg/m3): <u>2.611</u>
Sample No: 2	Density (mg/m3): <u>2.643</u>

  
 Specific Gravity of Aggregate:  
  

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$
  

$$G_s = \underline{2.627} \text{ mg/m}^3$$

**Deviation from Standard:**  
  



Nil

**Remarks:**  
  

Nil

<b>Prepared By:</b>  <hr/> Jessica Farrugia Quality Manager	<b>Approved By:</b>  <hr/> Chris Magro Lab Manager
---	--

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**Laboratory Test Certificate**  
**Determination of Particle Density according to BS 1377 - 2: 1990**

Client name: J&P AVAX S.A.	Project: Onshore & Offshore Geotechnical Investigation	Certificate No: TCR039
Client address: 29, Maroussiou Holandriou Street	Location/Town: Delimara	Date of certificate: 02/10/2014
151-25 Maroussi Greece		Client/Job No: J2094
Attn: Giorgos Rousopoulos		Test Reference No: PD007
Client Tel No: 306972019434		Tested by: MH
		Date of test: 02/10/2014

**Test Information**  
 Sample Ref No: 140915 - Soil  
 Sampling Location: BH G9  
 Sample Description: Passing 2mm Depth 3 - 4m  
 Date of sampling: 15/09/2014  
 Type of Material: Soil

**Results**  
  
 Method used for particle density: Clause 8.3 Small Pyknometer Method
  
  

Sample No: 1	Density (mg/m3): <u>2.643</u>
Sample No: 2	Density (mg/m3): <u>2.634</u>

  
 Specific Gravity of Aggregate:
 
$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$
  

$$G_s = \underline{2.638} \text{ mg/m}^3$$

**Deviation from Standard:**  



Nil


  

**Remarks:**  

Nil

<b>Prepared By:</b>  <hr/> Jessica Farrugia Quality Manager	<b>Approved By:</b>  <hr/> Chris Magro Lab Manager
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**Laboratory Test Certificate**  
**Determination of Particle Density according to BS 1377 - 2: 1990**

Client name: J&P AVAX S.A.	Project: Onshore & Offshore Geotechnical Investigation	Certificate No: TCR040
Client address: 29, Maroussiou	Location/Town: Delimara	Date of certificate: 02/10/2014
Holandriou Street		Client/Job No: J2094
151-25 Maroussi Greece		Test Reference No: PD008
Attn: Giorgos Rousopoulos		Tested by: MH
Client Tel No: 306972019434		Date of test: 02/10/2014

**Test Information**  
 Sample Ref No: 140915 - Soil  
 Sampling Location: BH G9  
 Sample Description: Passing 2mm Depth 7.75 - 8.65m  
 Date of sampling: 15/09/2014  
 Type of Material: Soil

**Results**  
  
 Method used for particle density: Clause 8.3 Small Pyknometer Method
  
  

Sample No: 1	Density (mg/m3): <u>2.502</u>
Sample No: 2	Density (mg/m3): <u>2.537</u>

  
 Specific Gravity of Aggregate:  
  

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$
  

$$G_s = \underline{2.519} \text{ mg/m}^3$$

**Deviation from Standard:**  



Nil


  

**Remarks:**  

Nil

<b>Prepared By:</b>  <hr/> Jessica Farrugia Quality Manager	<b>Approved By:</b>  <hr/> Chris Magro Lab Manager
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**Laboratory Test Certificate**  
**Determination of Particle Density according to BS 1377 - 2: 1990**

Client name: J&P AVAX S.A.	Project: Onshore & Offshore Geotechnical Investigation	Certificate No: TCR041
Client address: 29, Maroussiou Holandriou Street	Location/Town: Delimara	Date of certificate: 02/10/2014
151-25 Maroussi Greece		Client/Job No: J2094
Attn: Giorgos Rousopoulos		Test Reference No: PD009
Client Tel No: 306972019434		Tested by: MH
		Date of test: 02/10/2014

**Test Information**  
 Sample Ref No: 140912 - Soil  
 Sampling Location: BH G10  
 Sample Description: Passing 2mm Depth 3.3 - 4.3m  
 Date of sampling: 12/09/2014  
 Type of Material: Soil

**Results**  
  
 Method used for particle density: Clause 8.3 Small Pyknometer Method
  
  

Sample No: 1	Density (mg/m3): <u>2.724</u>
Sample No: 2	Density (mg/m3): <u>2.719</u>

  
 Specific Gravity of Aggregate:  
  

$$G_s = \frac{\text{Mass of Soil}}{\text{Mass of water displaced by soil}}$$
  

$$G_s = \underline{2.722} \text{ mg/m}^3$$

**Deviation from Standard:**  
  



Nil


  

**Remarks:**  
  

Nil

<b>Prepared By:</b>  <hr/> Jessica Farrugia Quality Manager	<b>Approved By:</b>  <hr/> Chris Magro Lab Manager
---	--



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# Consolidated Drained Triaxial Compression test with Measurement of Volume Change ( BS1377 : Part 8 : 1990 )

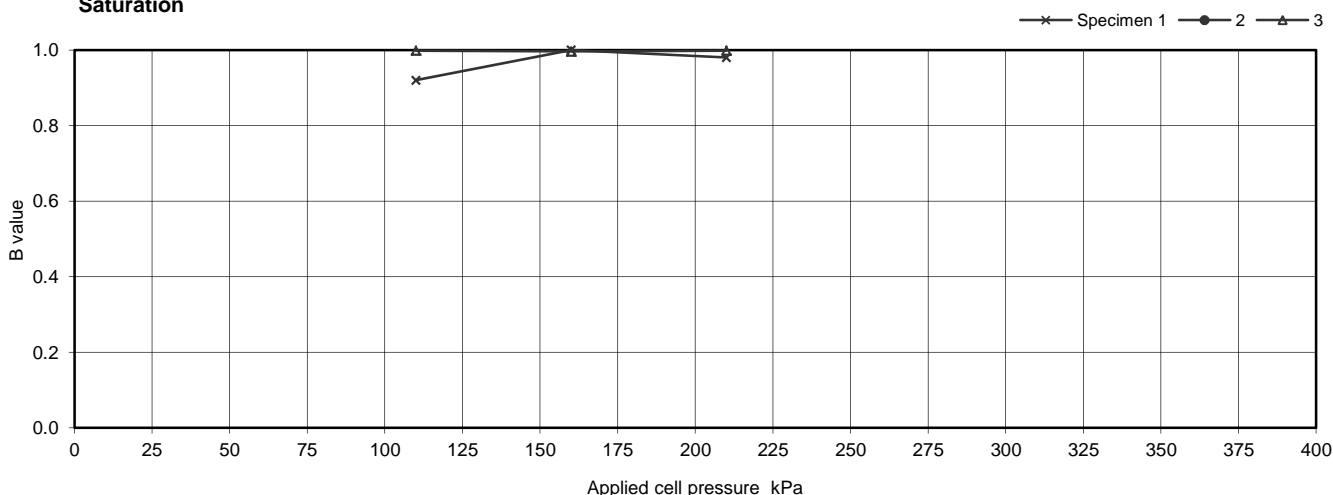
Project No	N4263-14	Sample Details:	Hole No	G2
Project Name	Dellimana		Depth (m BGL)	12.70 - 13.70
			No	9
			Type	
			ID	
			Spec Ref	

Specimen Details		1	2	3
Initial	Length mm	139.6		141.0
	Diameter mm	71.0		69.8
	Bulk Density Mg/m³	2.22		2.26
	Water Content %	15.7		16.1
	Dry density Mg/m³	1.92		1.95
After consolidation	Length mm	139.0		139.3
	Diameter mm	70.7		68.9
	Bulk Density Mg/m³	2.24		2.31
	Water Content %	15.2		14.4
	Dry density Mg/m³	1.94		2.02
After test	Bulk Density Mg/m³	2.24		2.21
	Water Content %	15.3		18.4
	Dry density Mg/m³	1.94		1.87

Soil Description	Soft light creamy brown slightly sandy slightly gravelly CLAY.
Specimen Type /Preparation	UNDISTURBED

Saturation Details		Method of Saturation		
		Increments of cell pressure only		
Cell pressure increments	kPa	50		50
Differential Pressure	kPa			
Final Cell Pressure	kPa	210		210
Final pore water pressure	kPa			
Final B Value		0.98		1.00

**Saturation**

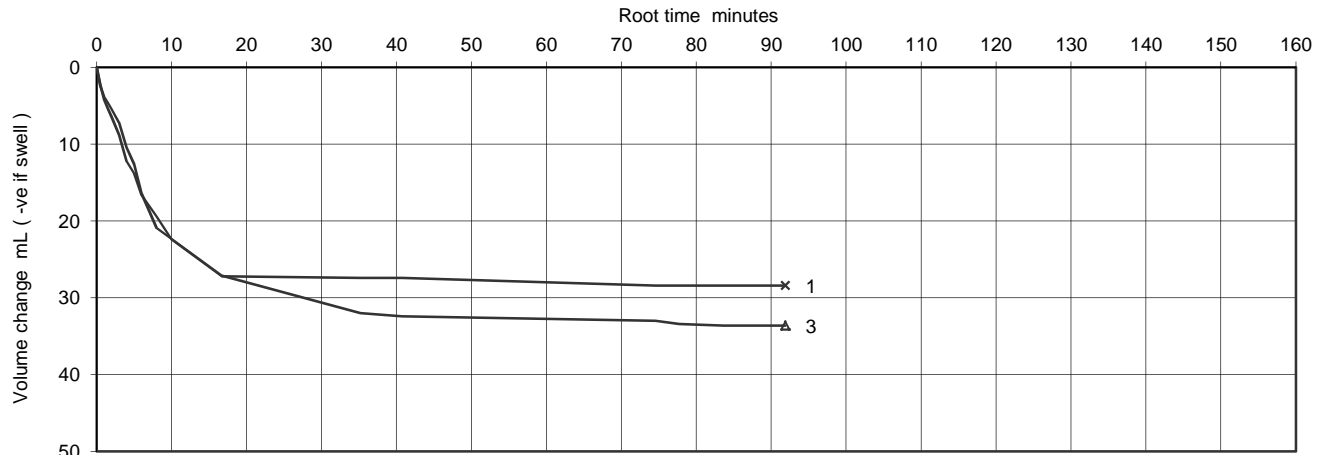


<b>Consolidation Details</b> see sheet 2 for plots	Drainage Conditions		From radial boundary and one end			
	Specimen No.		1	2	3	
	Cell Pressure applied		440		580	kPa
	Back Pressure applied		300		300	kPa
	Effective Pressure		140		280	kPa
	Pore pressure at start of consolidation		425		578	kPa
	Pore pressure at end of consolidation		300		303	kPa
	Pore pressure dissipation at end of consolidation		100		99	%
Consolidation parameters ( see note to BS1377 : pt 8, clause 6.3.4 )	Coefficient of Consolidation	C <sub>vi</sub>	1.09		0.05	m²/year
	Coefficient of Compressibility	M <sub>vi</sub>	0.40		0.22	m²/MN
	Coefficient of Permeability ( calculated )	k <sub>vi</sub>	1.3E-10		3.7E-12	m/s

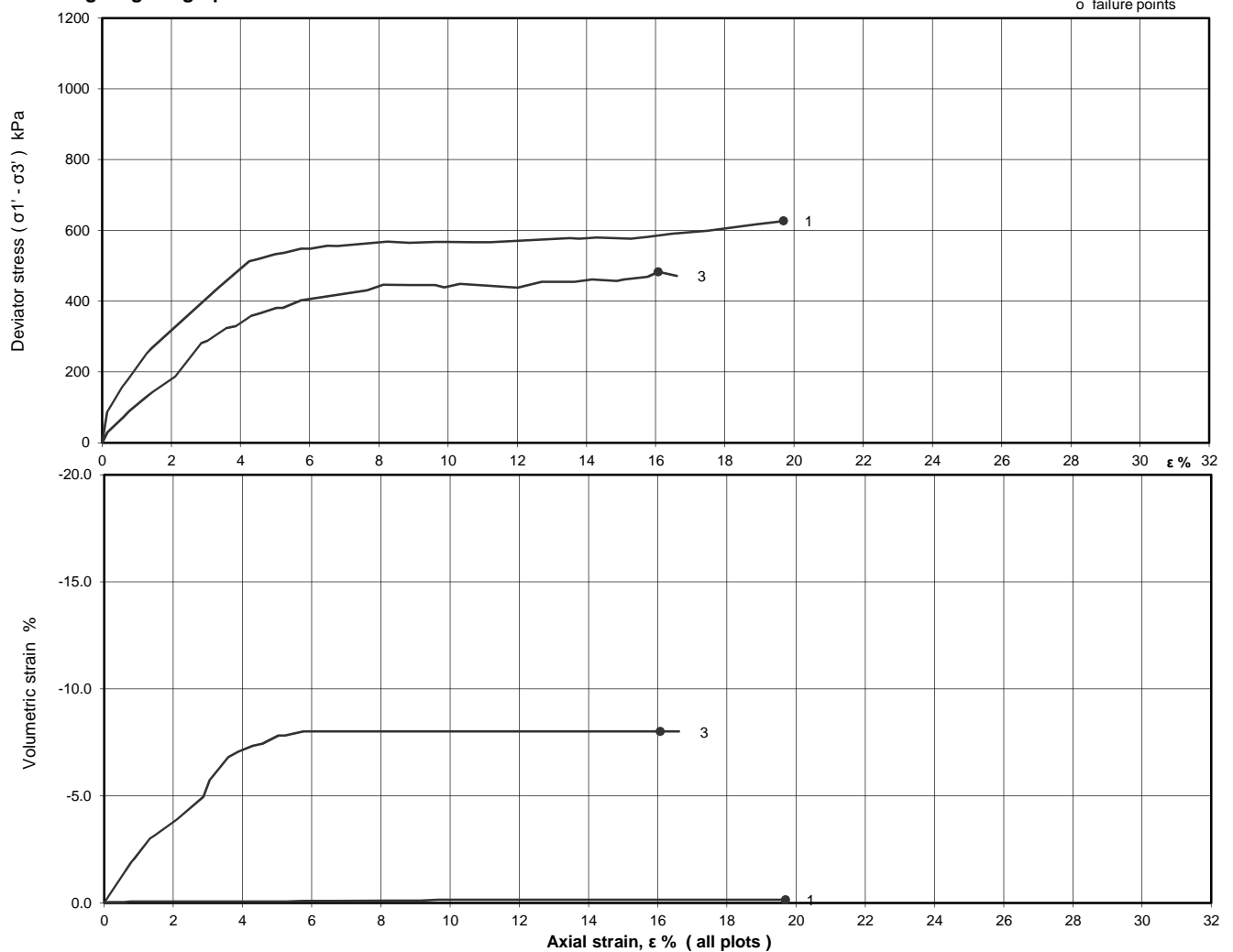
# Consolidated Drained Triaxial Compression test with Measurement of Volume Change ( BS1377 : Part 8 : 1990 )

Project No	N4263-14	Sample Details:	Hole No	G2	
Project Name	Dellimana		Depth (m BGL)	12.70 - 13.70	
			No	9	Type
			ID		
			Spec Ref		

## Consolidation



## Shearing stages - graphical data

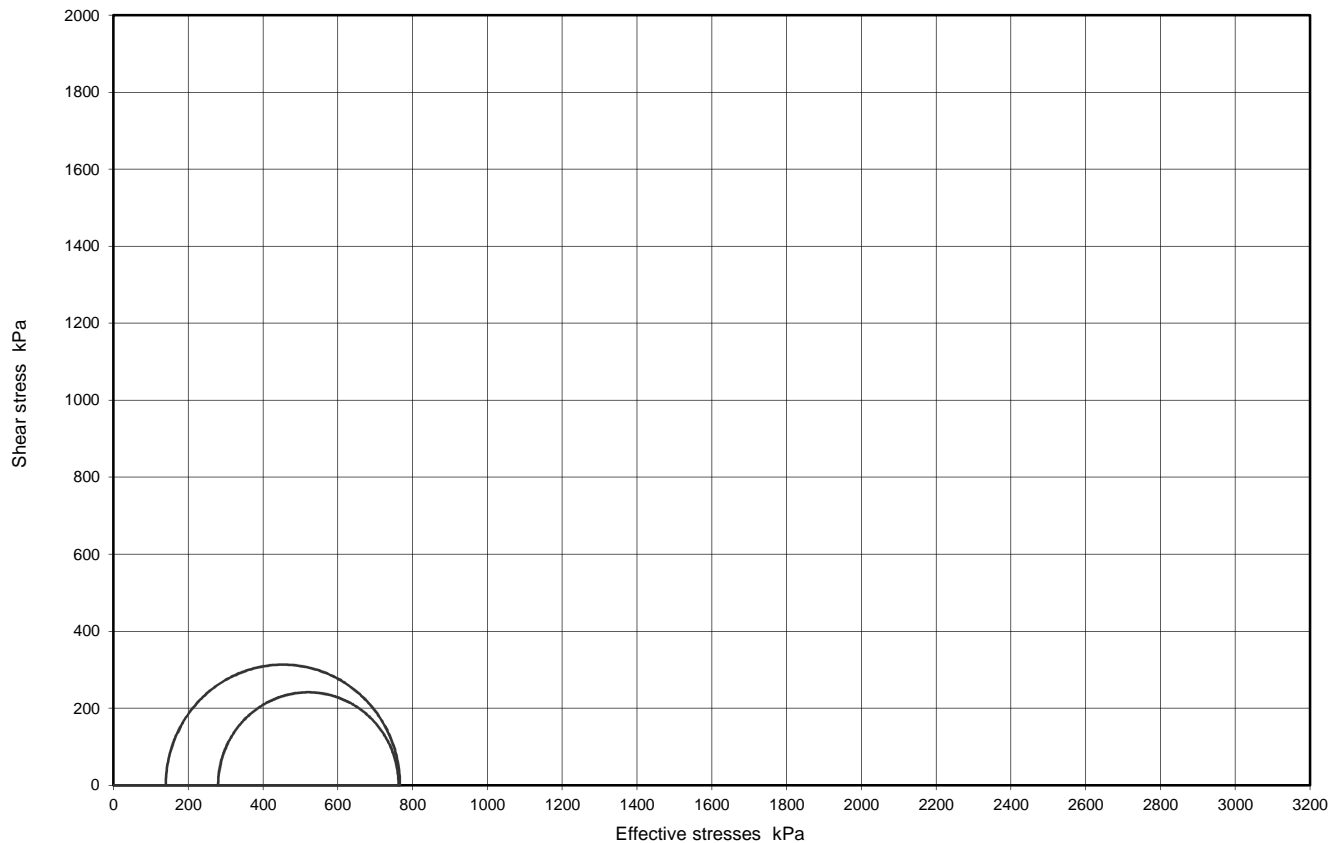


Ref	ESG	UKAS	Printed:24/11/2014 10:08	Figure
SLR8.2 Rev 85 Jan 10	Environmental Scientifics Group	1157		CD
				sheet 2 of 3

# Consolidated Drained Triaxial Compression test with Measurement of Volume Change ( BS1377 : Part 8 : 1990 )

Project No	N4263-14	Sample Details:	Hole No	G2
Project Name	Dellimana		Depth (m BGL)	12.70 - 13.70
			No	9
			Type	
			ID	
			Spec Ref	

## Mohr Circles



## Compression stages

Specimen	1	3	
Cell pressure	440	580	kPa
Initial pwp	300	300	kPa
Initial $\sigma_3'$	140	280	kPa
Rate of strain	0.03	0.03	%/hr

## Failure conditions

Criterion	Maximum deviator stress		
Axial strain	19.70	16.08	%
$(\sigma_1' - \sigma_3')_f$	626.2	482.5	kPa
Volumetric strain	-0.15	-8.01	%
$\sigma_3'_f$	140	280	kPa
$\sigma_1'_f$	766	763	kPa
Time to failure	597.0	487.2	hrs

## Shear Strength Parameters

### Linear regression

$c'$	kPa	not assessed
$\phi'$	degrees	not assessed

### Manual re-assessment

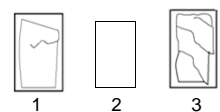
$c'$	kPa	-
$\phi'$	degrees	-

## Notes :

Deviator stresses corrected for area change, vertical side drains and 0.4 mm thick rubber membrane(s)

Specimen one contains coarse gravel

Mode of failure



Ref SLR8.2 Rev 85 Jan 10	ESG Environmental Scientifics Group	UKAS 1157	Printed:24/11/2014 10:08	Figure CD sheet 3 of 3
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**Consolidated Drained Triaxial Compression test with Measurement of Volume Change  
( BS1377 : Part 8 : 1990 )**

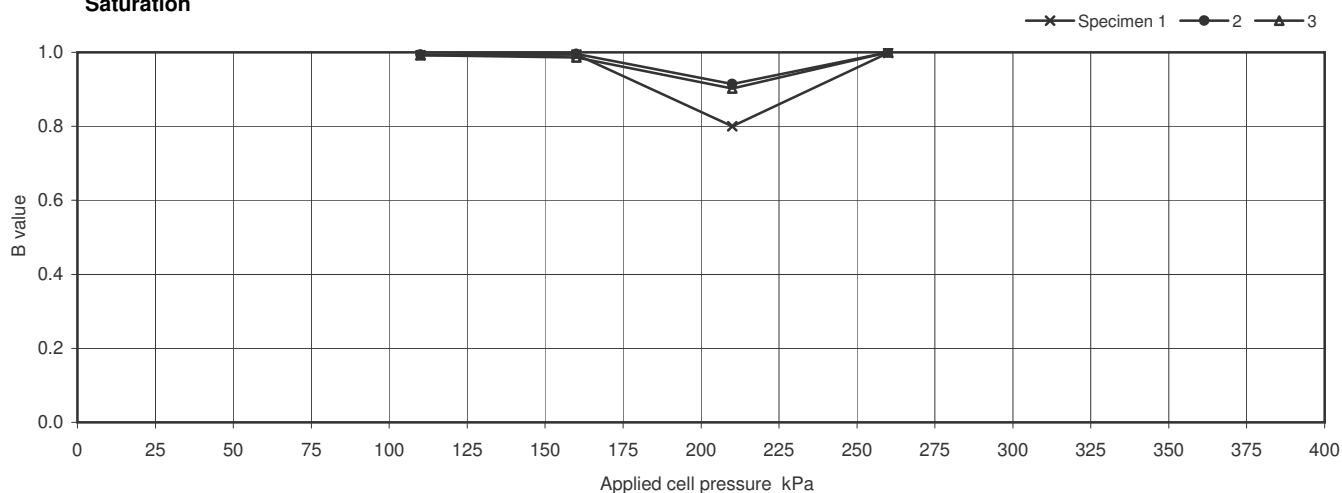
Project No	N4263-14	Sample Details:	Hole No	G3
Project Name	Dellimana		Depth (m BGL)	3.0-4.0
			No	3
			Type	
			ID	
			Spec Ref	

Specimen Details		1	2	3
Initial	Length mm	141.7	141.1	141.6
	Diameter mm	72.3	72.9	73.2
	Bulk Density Mg/m³	1.71	1.70	1.63
	Water Content %	50.3	51.9	53.6
	Dry density Mg/m³	1.14	1.12	1.06
After consolidation	Length mm	139.9	132.0	129.1
	Diameter mm	71.4	67.3	66.4
	Bulk Density Mg/m³	1.73	1.88	1.86
	Water Content %	47.1	34.5	31.4
	Dry density Mg/m³	1.18	1.40	1.42
After test	Bulk Density Mg/m³	1.73	2.27	1.80
	Water Content %	47.1	43.1	38.1
	Dry density Mg/m³	1.18	1.59	1.31

Soil Description	Soft greyish brown silty SAND with frequent fine rootlets.
Specimen Type /Preparation	UNDISTURBED

Saturation Details		Method of Saturation		
		Increments of cell pressure only		
Cell pressure increments	kPa	50	50	50
Differential Pressure	kPa			
Final Cell Pressure	kPa	260	260	260
Final pore water pressure	kPa	246.8	248.1	247.2
Final B Value		1.00	1.00	1.00

**Saturation**

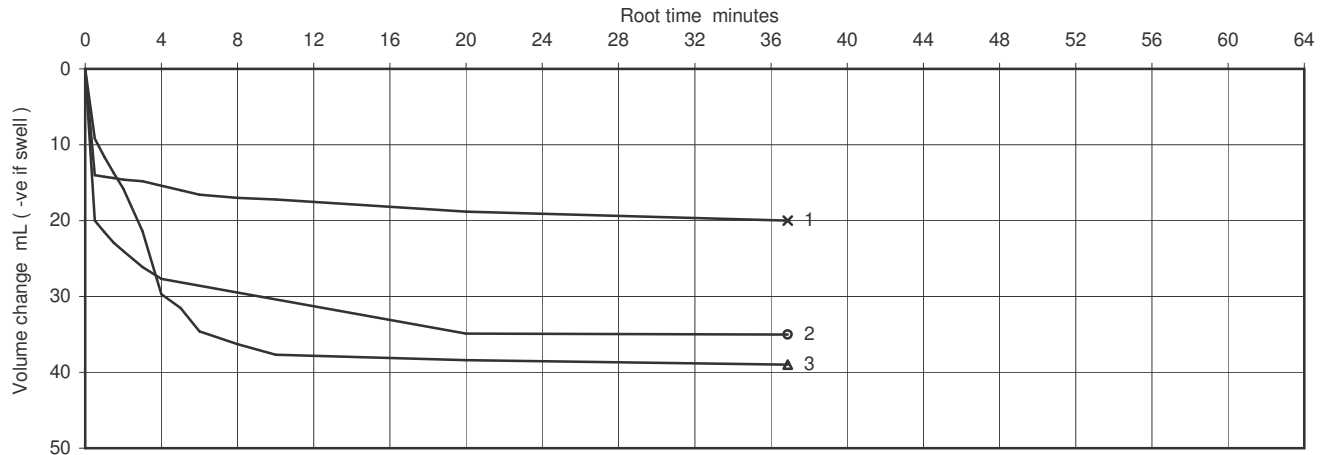


<b>Consolidation Details</b> see sheet 2 for plots	Drainage Conditions		From radial boundary and one end			
	Specimen No.		1	2	3	
	Cell Pressure applied		340	380	460	kPa
	Back Pressure applied		300	300	300	kPa
	Effective Pressure		40	80	160	kPa
	Pore pressure at start of consolidation		330	370	441	kPa
	Pore pressure at end of consolidation		300	300	302	kPa
	Pore pressure dissipation at end of consolidation		100	100	98	%
Consolidation parameters ( see note to BS1377 : pt 8, clause 6.3.4 )	Coefficient of Consolidation	C <sub>vi</sub>	226.57	124.73	2.27	m²/year
	Coefficient of Compressibility	M <sub>vi</sub>	1.14	0.99	0.58	m²/MN
	Coefficient of Permeability ( calculated )	k <sub>vi</sub>	8.0E-08	3.8E-08	4.1E-10	m/s

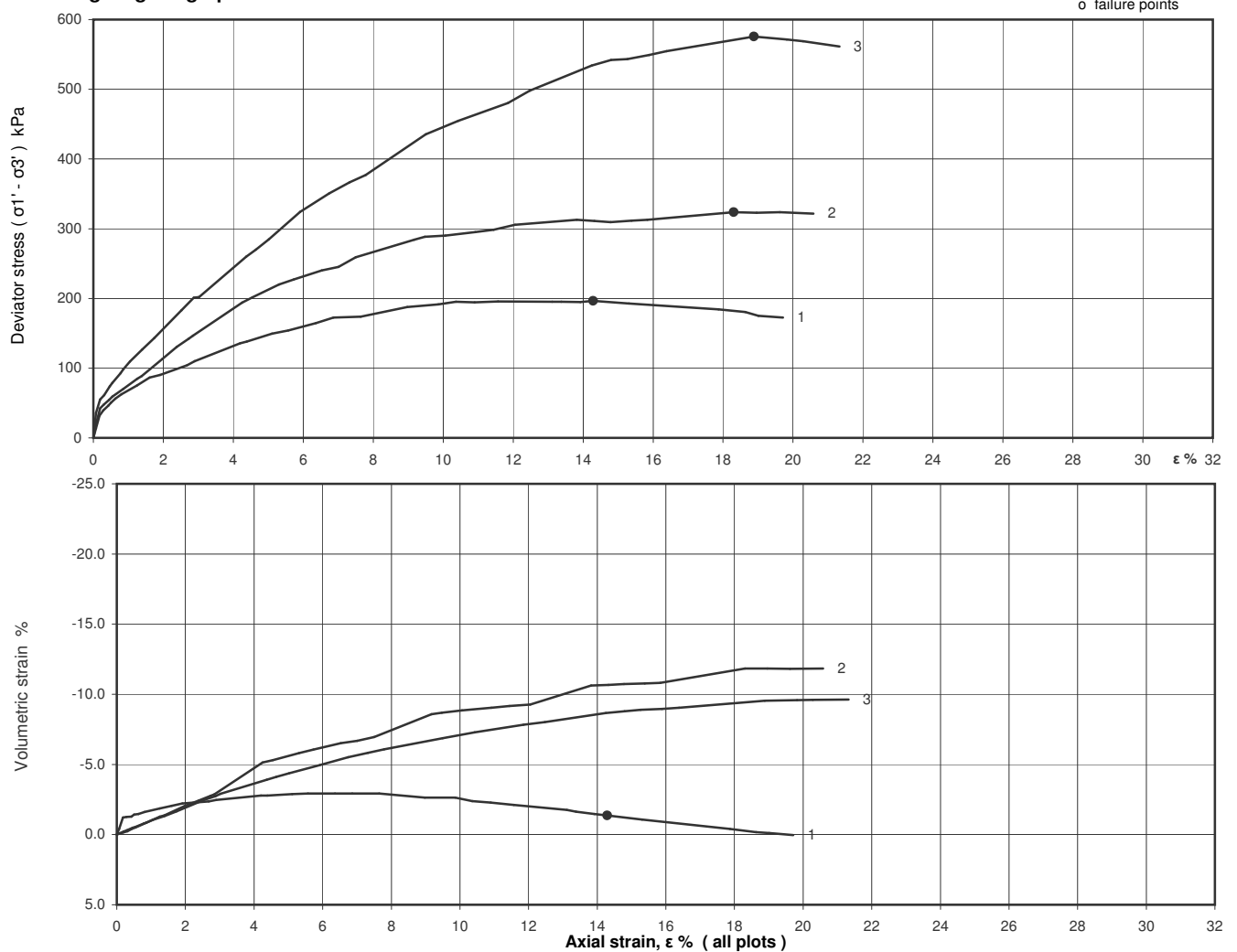
**Consolidated Drained Triaxial Compression test with Measurement of Volume Change  
( BS1377 : Part 8 : 1990 )**

Project No	N4263-14	Sample Details:	Hole No	G3		
Project Name	Dellimana		Depth (m BGL)	3.0-4.0		
			No	3	Type	
			ID			
			Spec Ref			

**Consolidation**



**Shearing stages - graphical data**



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Figure

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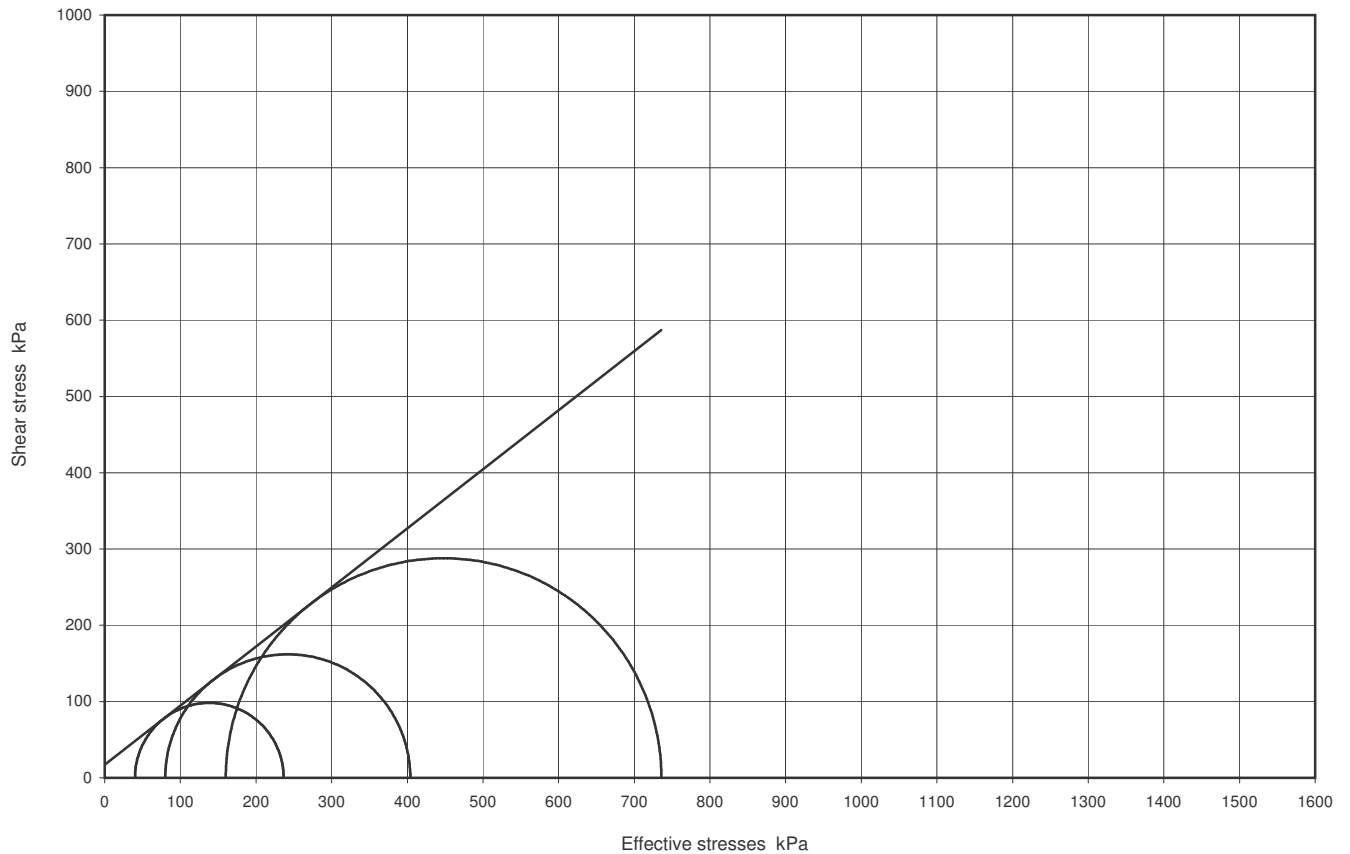
sheet 2 of 3



**Consolidated Drained Triaxial Compression test with Measurement of Volume Change  
( BS1377 : Part 8 : 1990 )**

Project No	N4263-14	Sample Details:	Hole No	G3	
Project Name	Dellimana		Depth (m BGL)	3.0-4.0	
		No	3	Type	
		ID			
		Spec Ref			

**Mohr Circles**



**Compression stages**

Specimen	1	2	3	
Cell pressure	340	380	460	kPa
Initial pwp	300	300	300	kPa
Initial $\sigma_3'$	40	80	160	kPa
Rate of strain	0.44	0.44	0.44	%/hr

**Shear Strength Parameters**

Linear regression

$c'$	kPa	17.3
$\phi'$	degrees	37.8

Manual re-assessment

$c'$	kPa	-
$\phi'$	degrees	-

**Failure conditions**

Criterion	Maximum deviator stress			
Axial strain	14.29	18.30	18.88	%
$(\sigma_1' - \sigma_3')_f$	196.5	323.9	575.8	kPa
Volumetric strain		-11.85	-9.55	%
$\sigma_3'_f$	40	80	160	kPa
$\sigma_1'_f$	236	404	736	kPa
Time to failure	32.6	41.8	43.1	hrs

**Notes :**

Deviator stresses corrected for area change, vertical side drains and 0.4 mm thick rubber membrane(s)

Mode of failure



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Figure

**CD**

sheet 3 of 3

# Consolidated Drained Triaxial Compression test with Measurement of Volume Change ( BS1377 : Part 8 : 1990 )

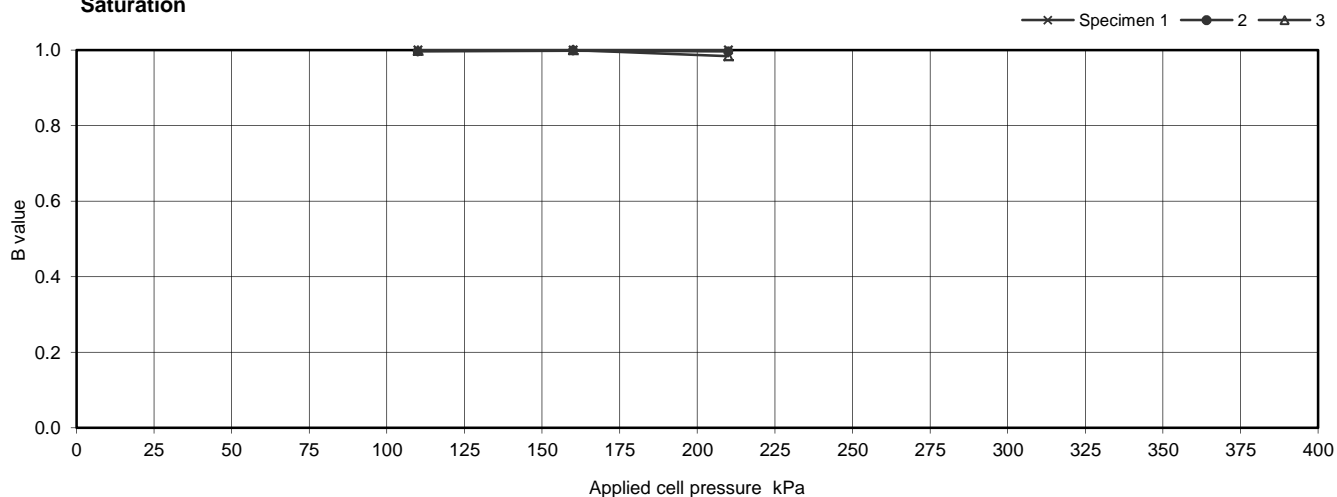
Project No	N4263-14	Sample Details:	Hole No	G8
Project Name	Dellimana		Depth (m BGL)	8.90 - 9.90
			No	3
			Type	
			ID	
			Spec Ref	

Specimen Details		1	2	3
Initial	Length mm	140.2	140.8	141.0
	Diameter mm	71.2	72.2	71.4
	Bulk Density Mg/m³	1.69	1.62	1.60
	Water Content %	61.0	71.8	75.6
	Dry density Mg/m³	1.05	0.94	0.91
After consolidation	Length mm	128.5	126.0	122.3
	Diameter mm	65.0	63.0	61.2
	Bulk Density Mg/m³	1.87	1.90	1.87
	Water Content %	36.3	37.4	30.9
	Dry density Mg/m³	1.38	1.38	1.43
After test	Bulk Density Mg/m³	1.79	1.80	1.80
	Water Content %	43.6	46.1	40.3
	Dry density Mg/m³	1.25	1.23	1.28

Soil Description	Soft to firm brownish grey slightly sandy slightly gravelly silty CLAY with occasional rootlets.
Specimen Type /Preparation	UNDISTURBED

Saturation Details		Method of Saturation		
		Increments of cell pressure only		
Cell pressure increments	kPa	50	50	50
Differential Pressure	kPa	10	10	10
Final Cell Pressure	kPa	210	210	210
Final pore water pressure	kPa	208	205.7	207.5
Final B Value		1.00	1.00	0.98

## Saturation



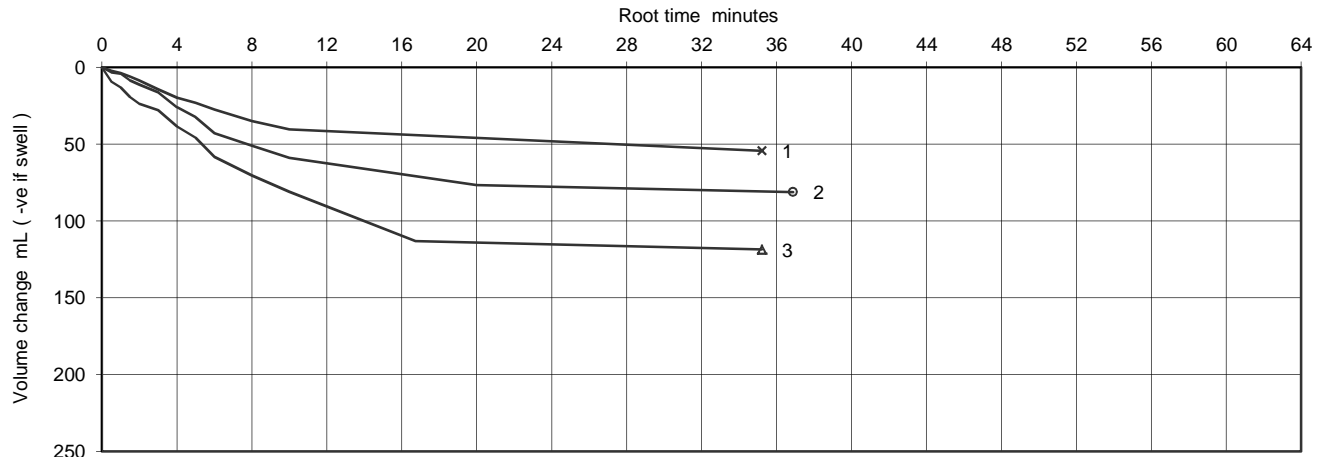
Consolidation Details see sheet 2 for plots	Drainage Conditions		From radial boundary and one end			
	Specimen No.		1	2	3	
	Cell Pressure applied		350	400	500	kPa
	Back Pressure applied		300	300	300	kPa
	Effective Pressure		50	100	200	kPa
	Pore pressure at start of consolidation		354	376	496	kPa
	Pore pressure at end of consolidation		302	301	302	kPa
	Pore pressure dissipation at end of consolidation		96	99	99	%
Consolidation parameters ( see note to BS1377 : pt 8, clause 6.3.4 )	Coefficient of Consolidation	C <sub>vi</sub>	0.61	0.60	0.46	m²/year
	Coefficient of Compressibility	M <sub>vi</sub>	2.19	2.32	1.32	m²/MN
	Coefficient of Permeability ( calculated )	k <sub>vi</sub>	4.1E-10	4.3E-10	1.9E-10	m/s

Ref SLR8.2 Rev 85 Jan 10			Printed:18/11/2014 10:06	Figure <b>CD</b> sheet 1 of 3
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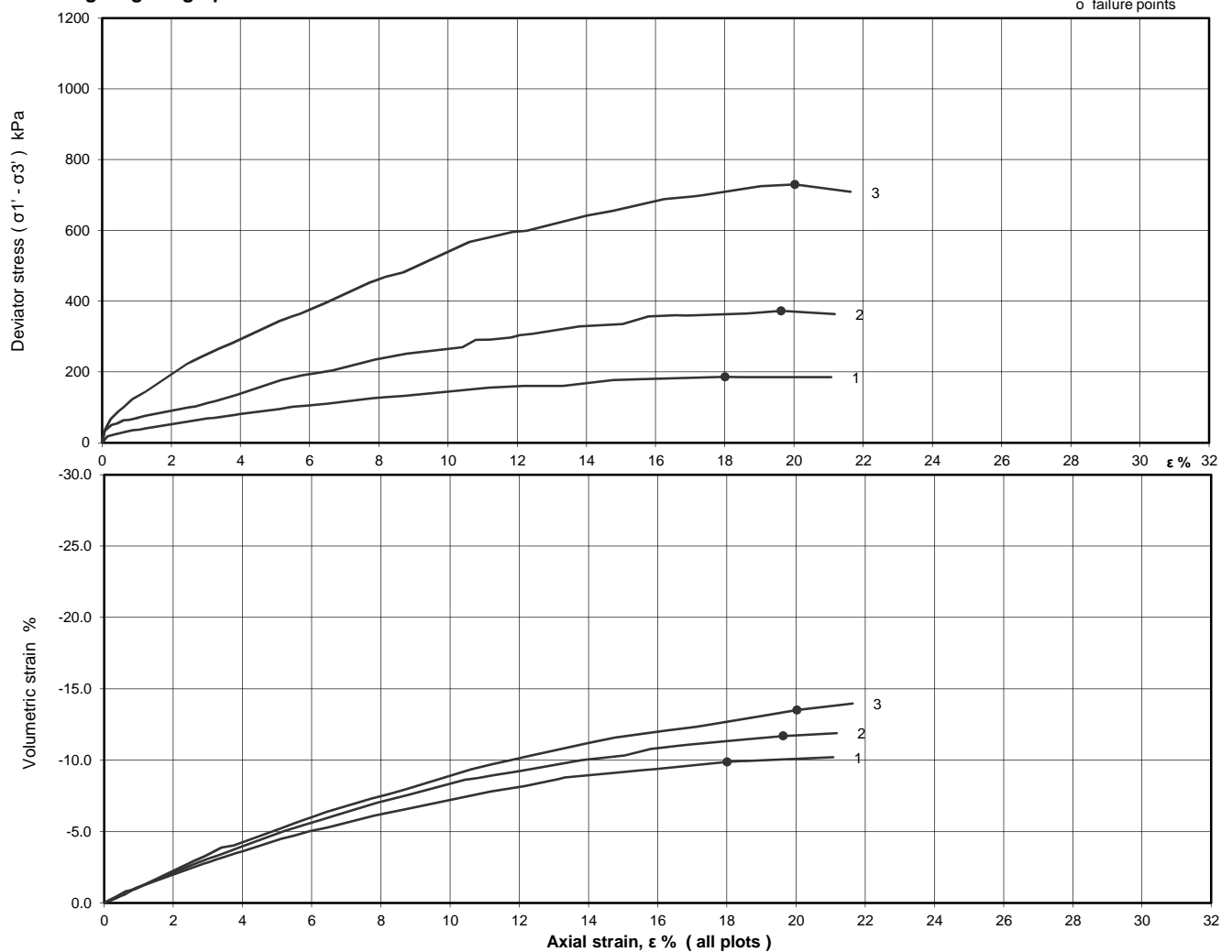
# **Consolidated Drained Triaxial Compression test with Measurement of Volume Change ( BS1377 : Part 8 : 1990 )**

Project No	N4263-14	Sample Details:	Hole No	G8		
Project Name	Dellimana		Depth (m BGL)	8.90 - 9.90		
			No	3	Type	
			ID			
			Spec Ref			

## **Consolidation**



## **Shearing stages - graphical data**



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Figure

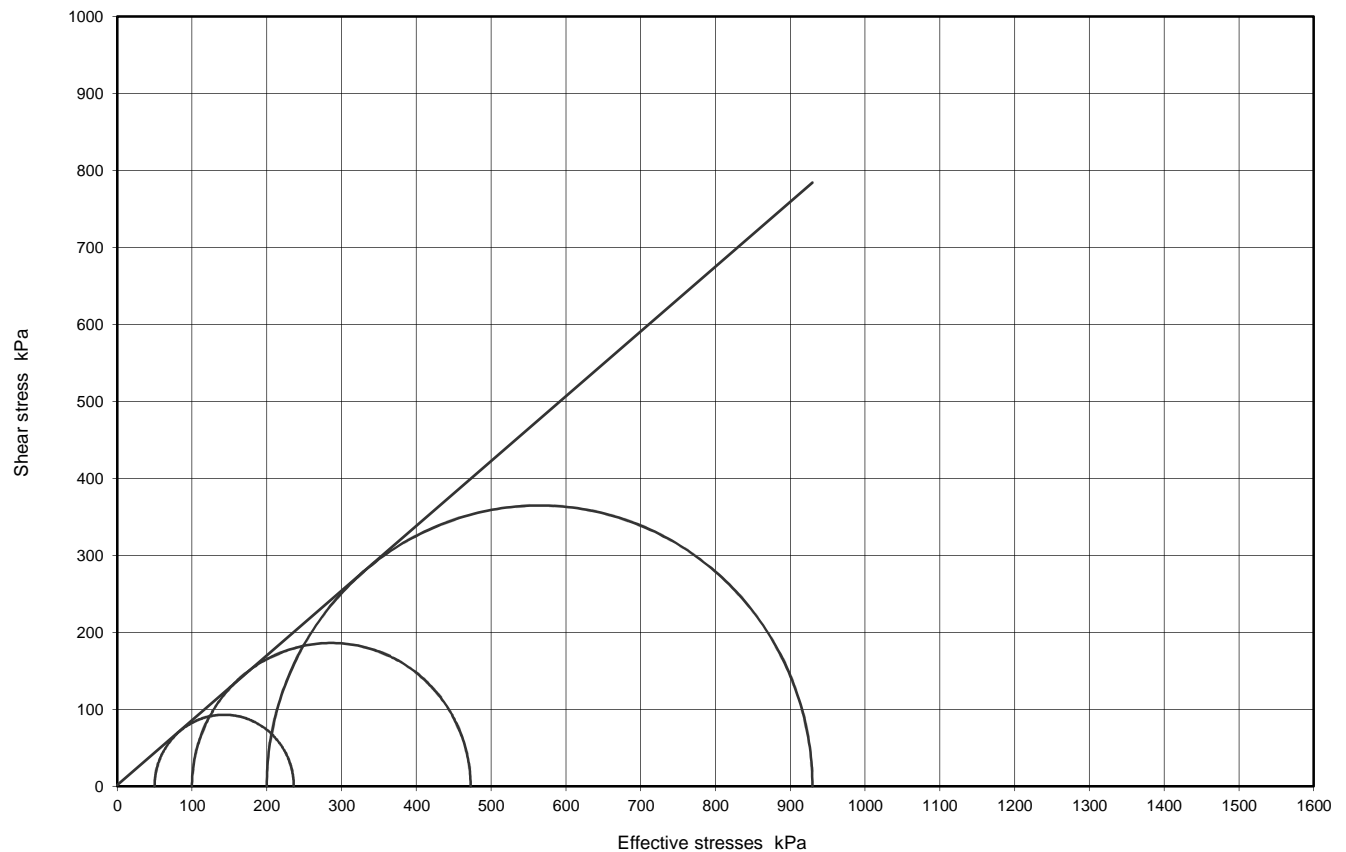
**CD**

sheet 2 of 3

# Consolidated Drained Triaxial Compression test with Measurement of Volume Change ( BS1377 : Part 8 : 1990 )

Project No	N4263-14	Sample Details:	Hole No	G8
Project Name	Dellimana		Depth (m BGL)	8.90 - 9.90
			No	3
			Type	
			ID	
			Spec Ref	

## Mohr Circles



## Compression stages

Specimen	1	2	3	
Cell pressure	350	400	500	kPa
Initial pwp	300	300	300	kPa
Initial $\sigma_3'$	50	100	200	kPa
Rate of strain	0.21	0.21	0.21	%/hr

## Shear Strength Parameters

### Linear regression

$c'$	kPa	1.8
$\phi'$	degrees	40.1

### Manual re-assessment

$c'$	kPa	-
$\phi'$	degrees	-

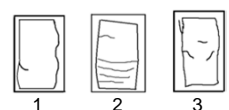
## Failure conditions

Criterion	Maximum deviator stress			
Axial strain	18.01	19.63	20.03	%
$(\sigma_1' - \sigma_3')_f$	186.1	372.6	729.6	kPa
Volumetric strain	-9.87	-11.69	-13.51	%
$\sigma_3' f$	50	100	200	kPa
$\sigma_1' f$	236	473	930	kPa
Time to failure	85.8	93.5	95.4	hrs

## Notes :

Deviator stresses corrected for area change, vertical side drains and 0.4 mm thick rubber membrane(s)

Mode of failure



Ref SLR8.2 Rev 85 Jan 10	ESG Environmental Scientifics Group	UKAS 1157	Printed:18/11/2014 10:06	Figure CD sheet 3 of 3
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# Consolidated Drained Triaxial Compression test with Measurement of Volume Change ( BS1377 : Part 8 : 1990 )

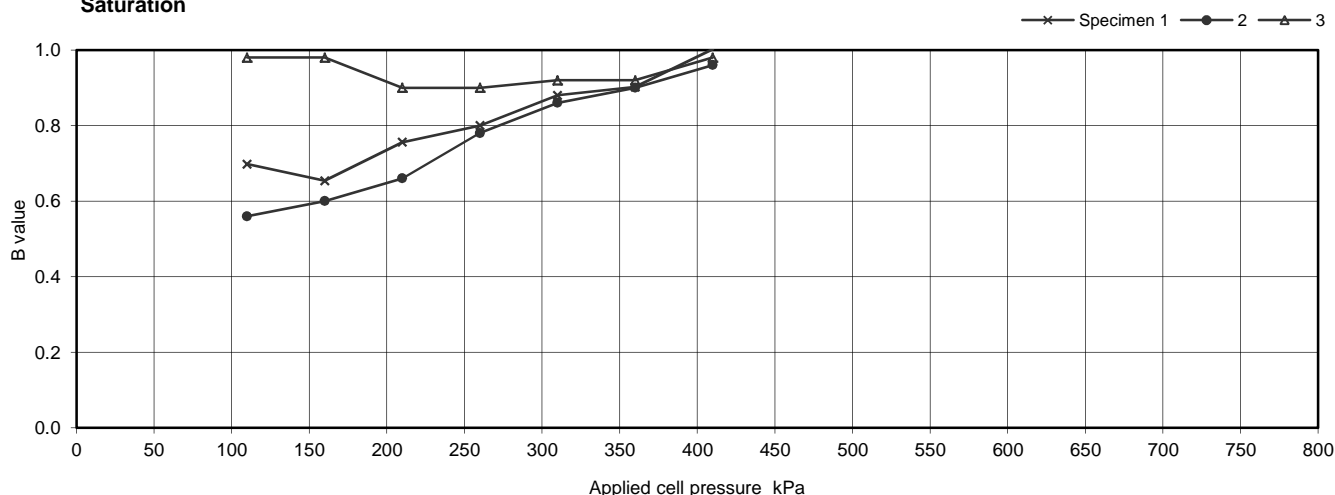
Project No	N4263-14	Sample Details:	Hole No	G9
Project Name	Dellimana		Depth (m BGL)	7.75 - 8.65
			No	2
			Type	
			ID	
			Spec Ref	

Specimen Details		1	2	3
Initial	Length mm	140.7	140.7	140.7
	Diameter mm	73.3	73.3	73.3
	Bulk Density Mg/m³	1.51	1.54	1.63
	Water Content %	51.0	48.1	52.1
	Dry density Mg/m³	1.00	1.04	1.07
After consolidation	Length mm	133.7	131.5	126.0
	Diameter mm	69.5	68.3	65.2
	Bulk Density Mg/m³	1.72	1.79	1.91
	Water Content %	47.1	39.5	26.3
	Dry density Mg/m³	1.17	1.28	1.51
After test	Bulk Density Mg/m³	1.70	1.74	1.82
	Water Content %	49.8	44.8	35.9
	Dry density Mg/m³	1.14	1.20	1.34

Soil Description	Firm grey slightly gravelly sandy clayey SILT. Gravel is shell fragments.
Specimen Type /Preparation	UNDISTURBED

Saturation Details		Method of Saturation		
		Increments of cell and back pressure		
Cell pressure increments	kPa	50	50	50
Differential Pressure	kPa	10	10	10
Final Cell Pressure	kPa	410	410	410
Final pore water pressure	kPa	400.1	396	399
Final B Value		1.00	0.96	0.98

**Saturation**

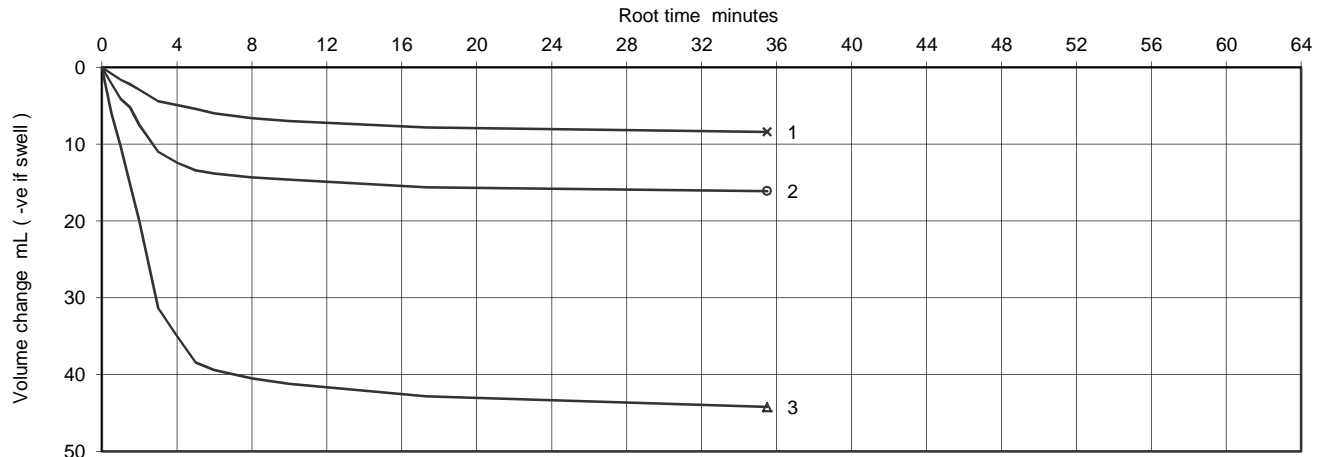


<b>Consolidation Details</b> see sheet 2 for plots	Drainage Conditions		From radial boundary and one end			
	Specimen No.		1	2	3	
	Cell Pressure applied		440	480	560	kPa
	Back Pressure applied		400	400	400	kPa
	Effective Pressure		40	80	160	kPa
	Pore pressure at start of consolidation		434	465	551	kPa
	Pore pressure at end of consolidation		400	400	404	kPa
	Pore pressure dissipation at end of consolidation		99	100	97	%
Consolidation parameters ( see note to BS1377 : pt 8, clause 6.3.4 )	Coefficient of Consolidation	C <sub>vi</sub>	3.19	5.38	5.57	m²/year
	Coefficient of Compressibility	M <sub>vi</sub>	0.49	0.50	0.65	m²/MN
	Coefficient of Permeability ( calculated )	k <sub>vi</sub>	4.8E-10	8.3E-10	1.1E-09	m/s

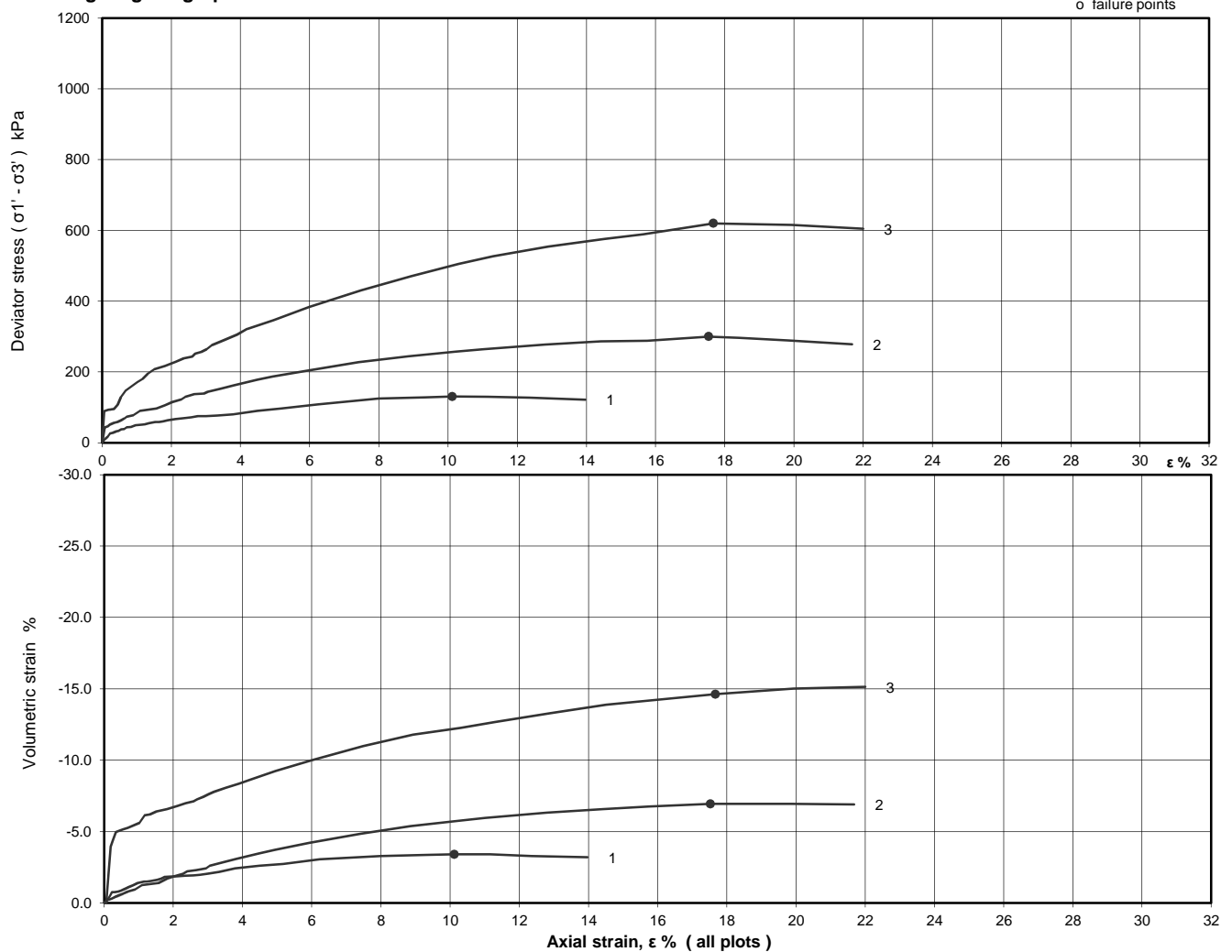
# **Consolidated Drained Triaxial Compression test with Measurement of Volume Change ( BS1377 : Part 8 : 1990 )**

Project No	N4263-14	Sample Details:	Hole No		G9		
Project Name	Dellimana		Depth (m BGL)		7.75 - 8.65		
			No	2	Type		
			ID				
			Spec Ref				

## **Consolidation**



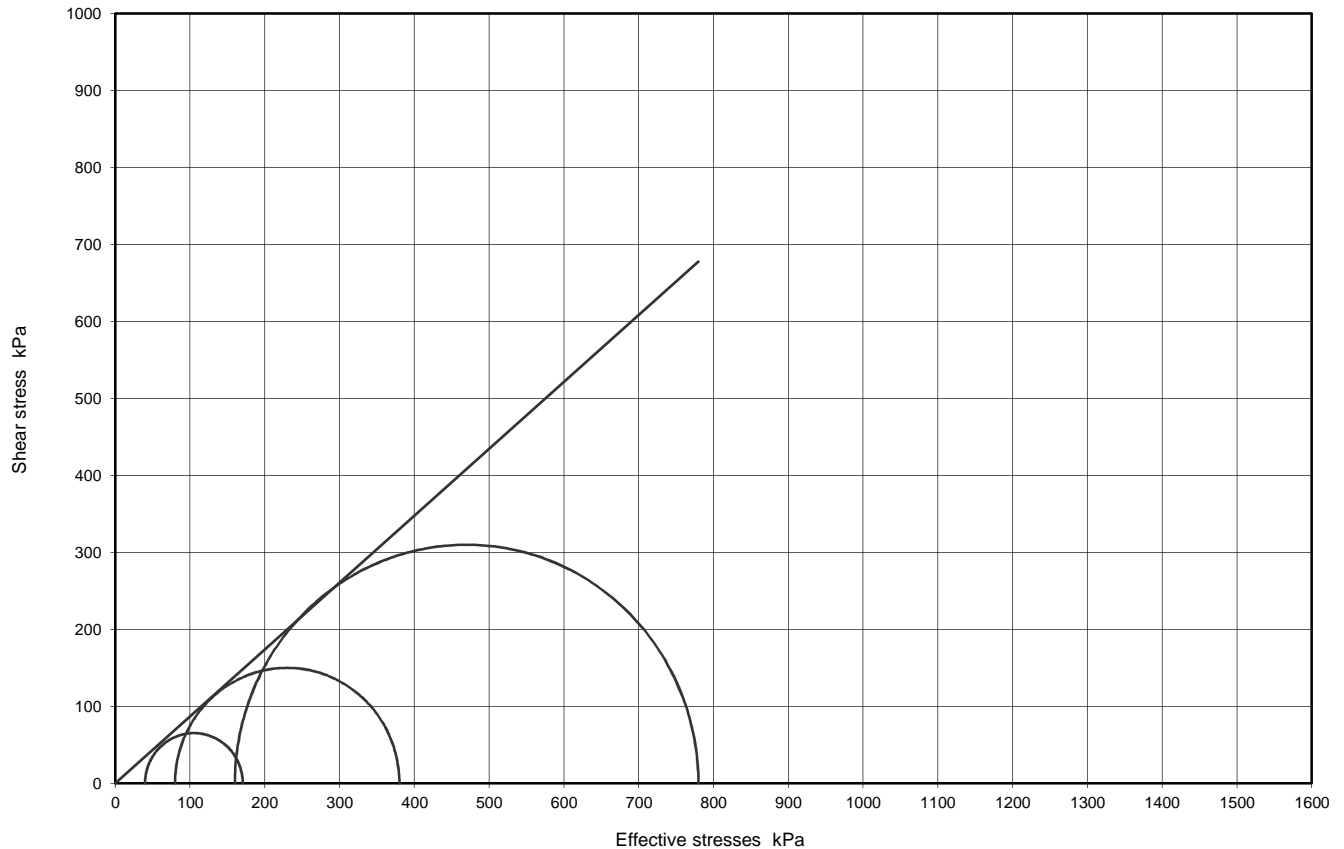
## **Shearing stages - graphical data**



# **Consolidated Drained Triaxial Compression test with Measurement of Volume Change ( BS1377 : Part 8 : 1990 )**

Project No	N4263-14	Sample Details:	Hole No	G9	
Project Name	Dellimana		Depth (m BGL)	7.75 - 8.65	
		No	2	Type	
		ID			
		Spec Ref			

## **Mohr Circles**



## **Compression stages**

Specimen	1	2	3	
Cell pressure	440	480	560	kPa
Initial pwp	400	400	400	kPa
Initial $\sigma_3'$	40	80	160	kPa
Rate of strain	2.00	2.00	2.00	%/hr

## **Shear Strength Parameters**

### Linear regression

$c'$	kPa	(-6.5)
$\phi'$	degrees	(42.1)

### Manual re-assessment

$c'$	kPa	0
$\phi'$	degrees	41.0

## **Failure conditions**

Criterion	Maximum deviator stress			
Axial strain	10.13	17.53	17.67	%
$(\sigma_1' - \sigma_3')_f$	130.6	300.1	619.9	kPa
Volumetric strain	-3.41	-6.94	-14.62	%
$\sigma_3'_f$	40	80	160	kPa
$\sigma_1'_f$	171	380	780	kPa
Time to failure	5.1	8.8	8.8	hrs

### **Notes :**

Deviator stresses corrected for area change, vertical side drains and 0.4 mm thick rubber membrane(s)

Please note that specimen 3 is softer.

Mode of failure



<b>Ref</b> SLR8.2 Rev 85 Jan 10		 1157	Printed: 17/11/2014 10:10	<b>Figure</b>  <b>CD</b> sheet 3 of 3
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# Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure ( BS1377 : Part 8 : 1990 )

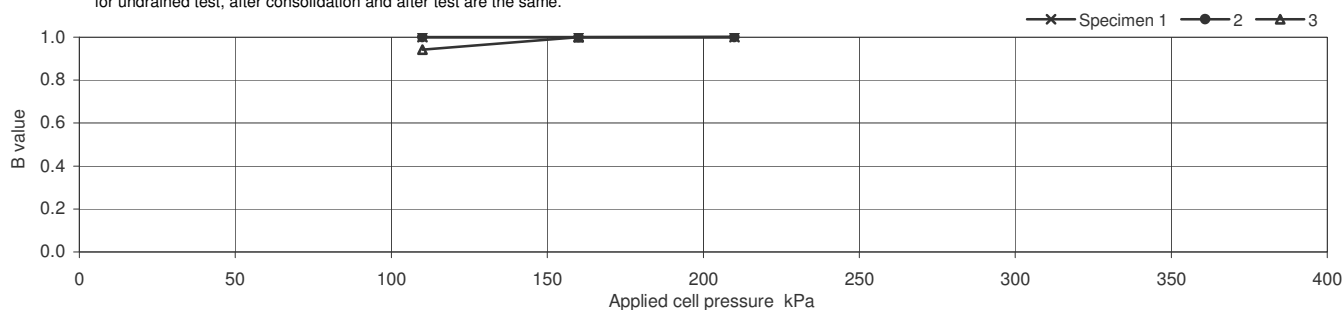
Project No	N4263-14	Sample Details:	Hole No	G1
Project Name	Dellimana		Depth (m BGL)	2.45 - 3.45
			No	3
			ID	
			Spec Ref	

Specimen Details		1	2	3
Initial	Length mm	139.03	138.74	135.98
	Diameter mm	72.74	72.07	73.30
	Bulk Density Mg/m³	1.87	1.85	1.91
	Water Content %	37	40	33
	Dry density Mg/m³	1.36	1.32	1.43
After consolidation	Length mm	134.80	133.50	131.78
	Diameter mm	70.49	69.99	71.00
	Bulk Density* Mg/m³	1.95	1.91	2.00
	Water Content* %	31	31	27
	Dry density* Mg/m³	1.50	1.46	1.58

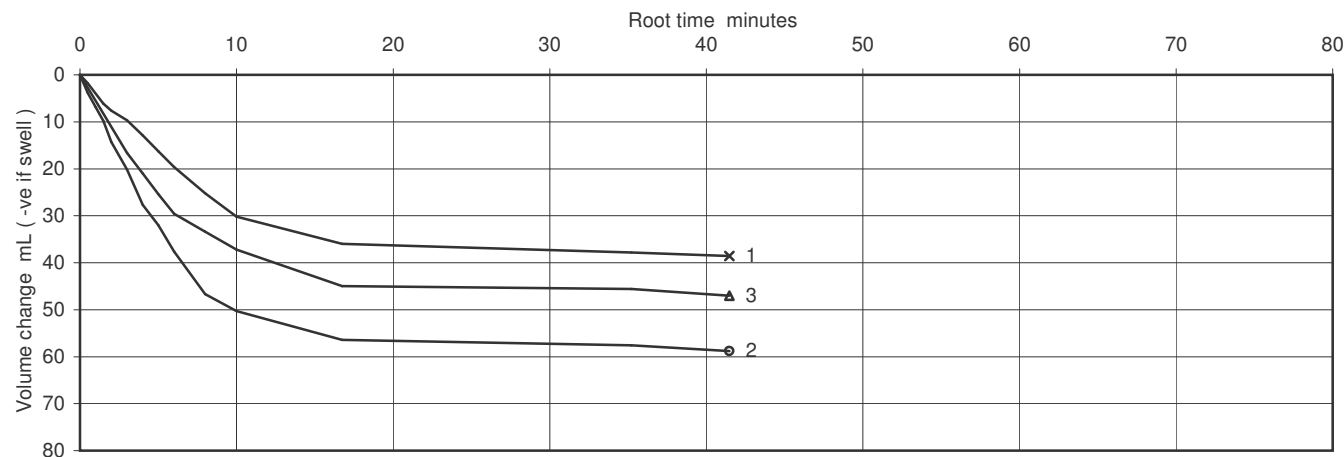
Soil Description	Soft creamish grey slightly sandy slightly gravelly CLAY with occasional rootlets
Specimen Type /Preparation	UNDISTURBED

Saturation Details		Method of Saturation		
		Increments of cell pressure only		
Cell pressure increments	kPa	50	50	50
Differential Pressure	kPa	0	0	0
Final Cell Pressure	kPa	207	208	210
Final pore water pressure	kPa	207	208	202.1
Final B Value		1.00	1.00	1.00

\* for undrained test, after consolidation and after test are the same.



Consolidation Details	Drainage Conditions		From radial boundary and one end			
	Specimen No.		1	2	3	
	Cell Pressure applied		340	380	460	kPa
	Back Pressure applied		300	300	300	kPa
	Effective Pressure		40	80	160	kPa
	Pore pressure at start of consolidation		339	378	452	kPa
	Pore pressure at end of consolidation		300	300	300	kPa
	Pore pressure dissipation at end of consolidation		100	100	100	%
Consolidation parameters ( see note to BS1377 : pt 8, clause 6.3.4 )	Coefficient of Consolidation	C <sub>vi</sub>	0.77	1.61	1.50	m <sup>2</sup> /year
	Coefficient of Compressibility	M <sub>vi</sub>	1.76	1.32	0.54	m <sup>2</sup> /MN
	Coefficient of Permeability ( calculated )	k <sub>vi</sub>	4.2E-10	6.6E-10	2.5E-10	m/s



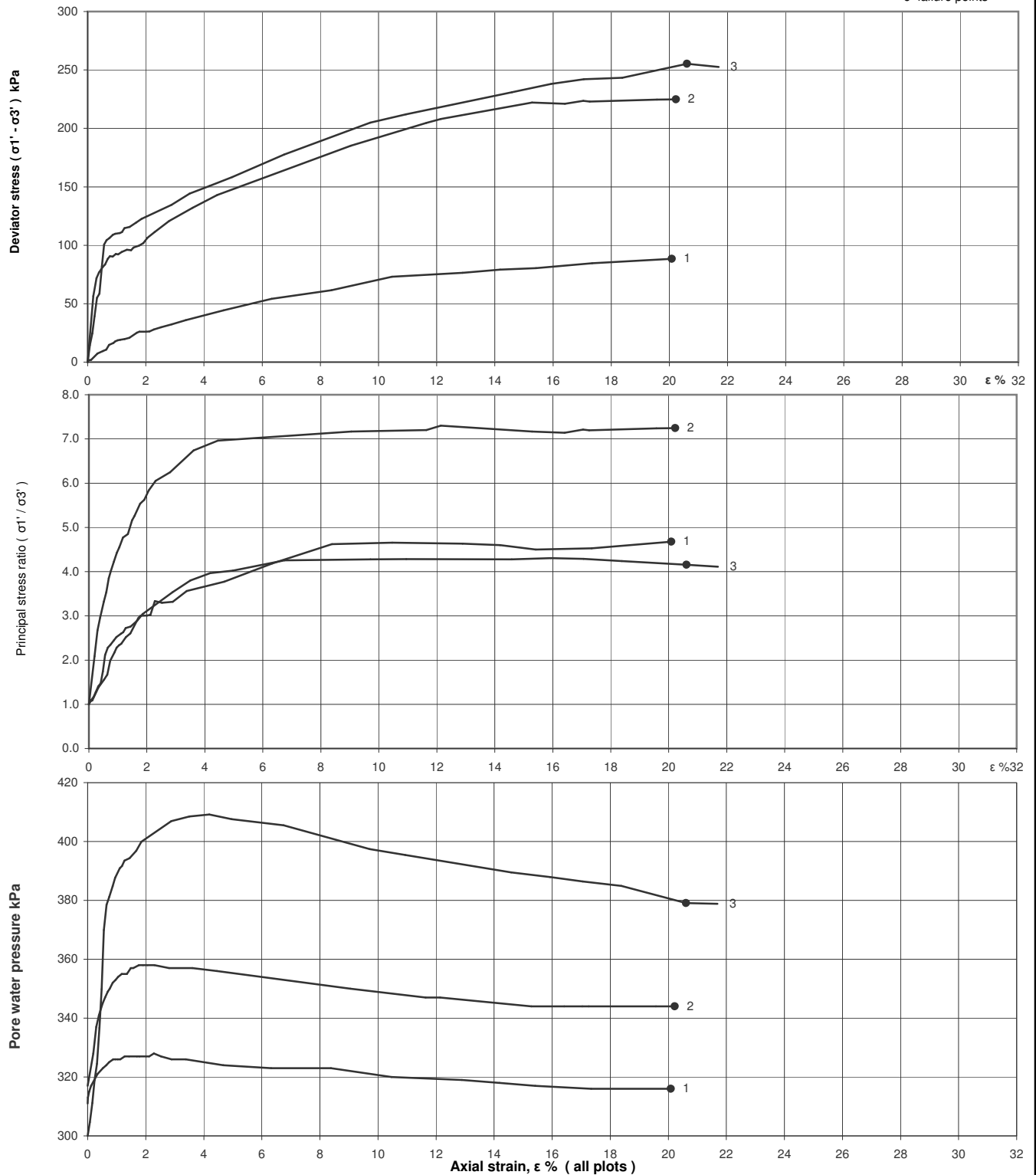


# **Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure ( BS1377 : Part 8 : 1990 )**

Project No	N4263-14	Sample Details:	Hole No	G1
Project Name	Dellimana		Depth (m BGL)	2.45 - 3.45
			No	3
			ID	
			Spec Ref	

## **Shearing stages - graphical data**

o failure points



Ref

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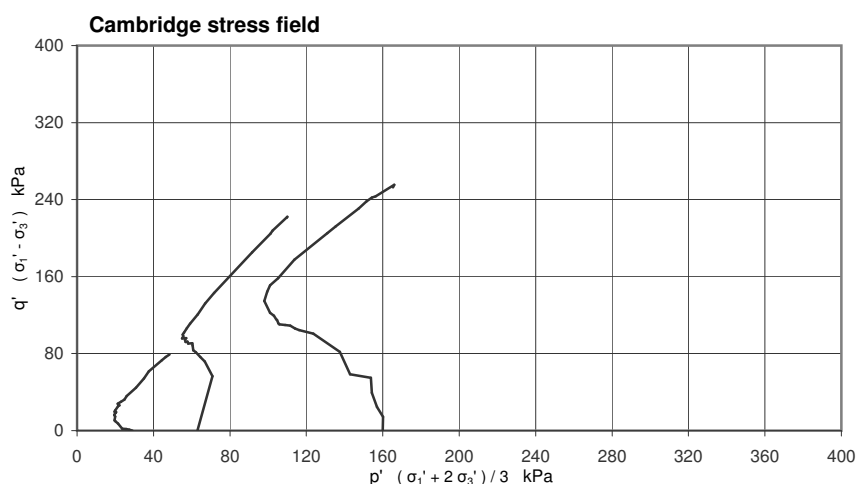
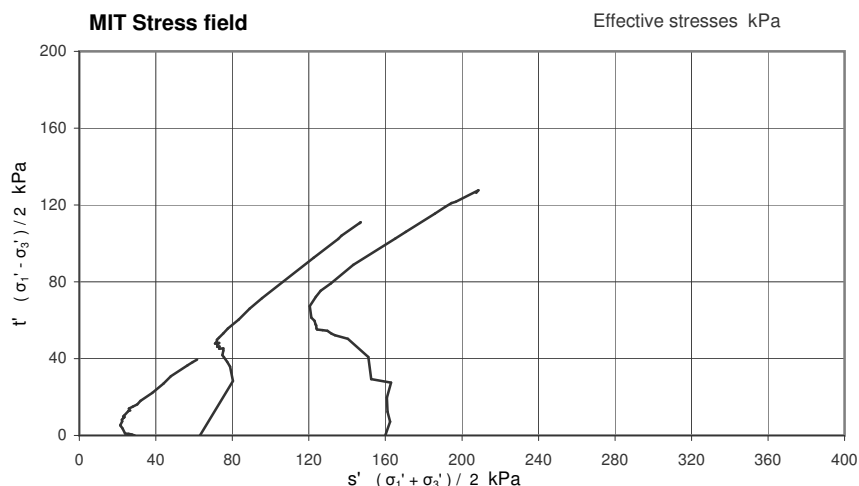
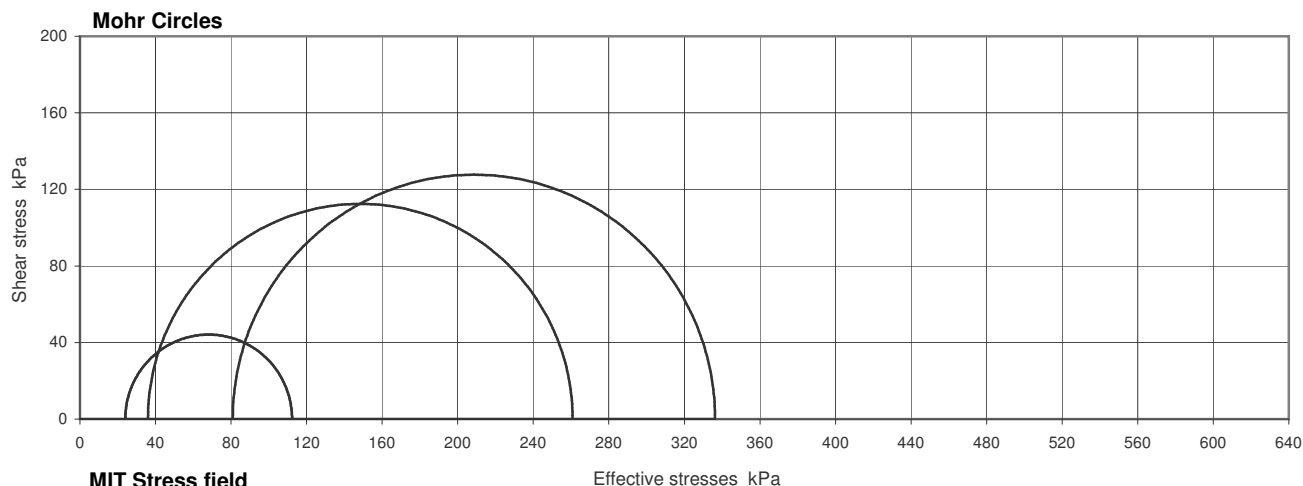
Figure

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sheet 2 of 3

# Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure ( BS1377 : Part 8 : 1990 )

Project No	N4263-14	Sample Details:	Hole No	G1
Project Name	Dellimana		Depth (m BGL)	2.45 - 3.45
			No	3
			ID	
			Spec Ref	



## Compression stages

Specimen	1	2	3	
Cell pressure	340	380	460	kPa
Initial pwp	311	317	300	kPa
Initial $\sigma_3'$	29	63	160	kPa
Rate of strain	1.12	1.12	1.12	%/hr

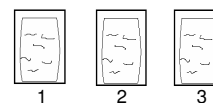
## Failure conditions

Criterion	Maximum deviator stress			
Axial strain	20.09	20.23	20.61	%
$(\sigma_1' / \sigma_3')_f$	4.679	7.245	4.157	
$(\sigma_1' - \sigma_3')_f$	88.3	224.8	255.4	kPa
$u_f$	316	344	379	kPa
$\sigma_3'_f$	24	36	81	kPa
$\sigma_1'_f$	112	261	336	kPa
$A_f$	0.06	0.12	0.31	
Time to failure	17.9	18.1	18.4	hrs

## Shear Strength Parameters

		Linear regression
$c'$	kPa	not assessed
$\phi'$	degrees	not assessed
		Manual re-assessment
$c'$	kPa	-
$\phi'$	degrees	-

## Mode of failure



Notes : Deviator stresses corrected for area change, vertical side drains and 0.4 mm thick rubber membrane(s)  
Please note that specimen three is firmer.  
Unable to perform true linear regression, hence no shear strength parameters.

Ref SLR8.1 Rev 85 May 09	ESG Environmental Scientifics Group	UKAS TESTING 1157	Printed:30/10/2014 11:18	Figure  <b>CU</b> sheet 3 of 3
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# Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure ( BS1377 : Part 8 : 1990 )

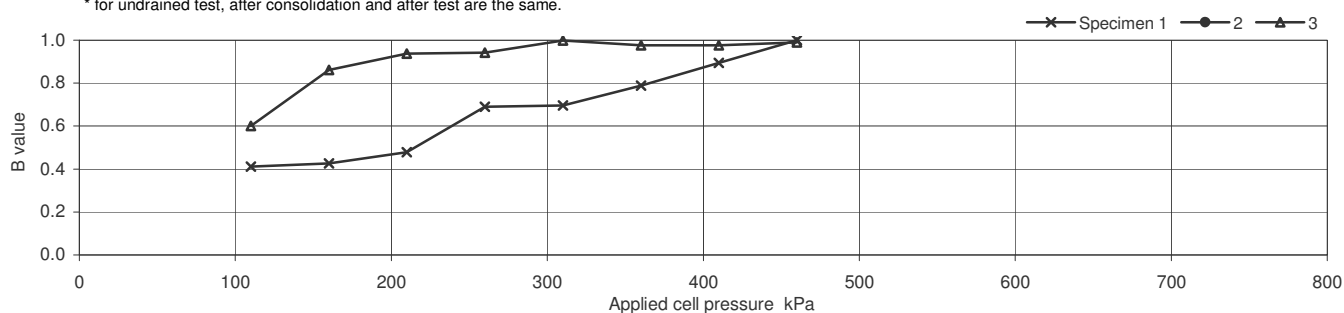
Project No	N4263-14	Sample Details:	Hole No	G3
Project Name	Dellimana		Depth (m BGL)	6.45-7.45
			No	4
			ID	
			Spec Ref	

Specimen Details		1	2	3
Initial	Length mm	141.37		142.96
	Diameter mm	72.14		71.01
	Bulk Density Mg/m³	1.66		1.63
	Water Content %	42		51
	Dry density Mg/m³	1.17		1.08
After consolidation	Length mm	138.71		137.66
	Diameter mm	70.77		68.33
	Bulk Density* Mg/m³	1.77		1.75
	Water Content* %	43		44
	Dry density* Mg/m³	1.24		1.21

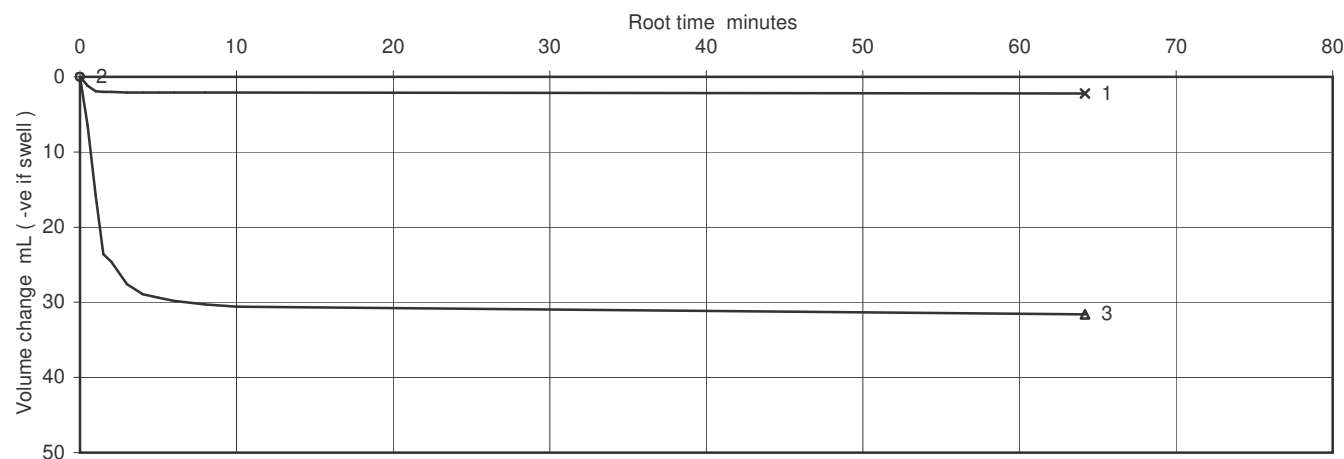
Soil Description	Soft grey silty SAND with frequent rootlets
Specimen Type /Preparation	UNDISTURBED

Saturation Details		Method of Saturation		
		Increments of cell and back pressure		
Cell pressure increments	kPa	50		50
Differential Pressure	kPa	10		10
Final Cell Pressure	kPa	460		460
Final pore water pressure	kPa	400		400
Final B Value		1.00		0.99

\* for undrained test, after consolidation and after test are the same.



Consolidation Details		Drainage Conditions			
		From one end			
		1	2	3	
		490		610	kPa
		450		450	kPa
		40		160	kPa
		475		599	kPa
		450		451	kPa
Consolidation parameters ( see note to BS1377 : pt 8, clause 6.3.4 )					
Coefficient of Consolidation		C <sub>vi</sub>	8132.34	1436.51	m²/year
Coefficient of Compressibility		M <sub>vi</sub>	0.16	0.40	m²/MN
Coefficient of Permeability ( calculated )		k <sub>vi</sub>	4.1E-07	1.8E-07	m/s

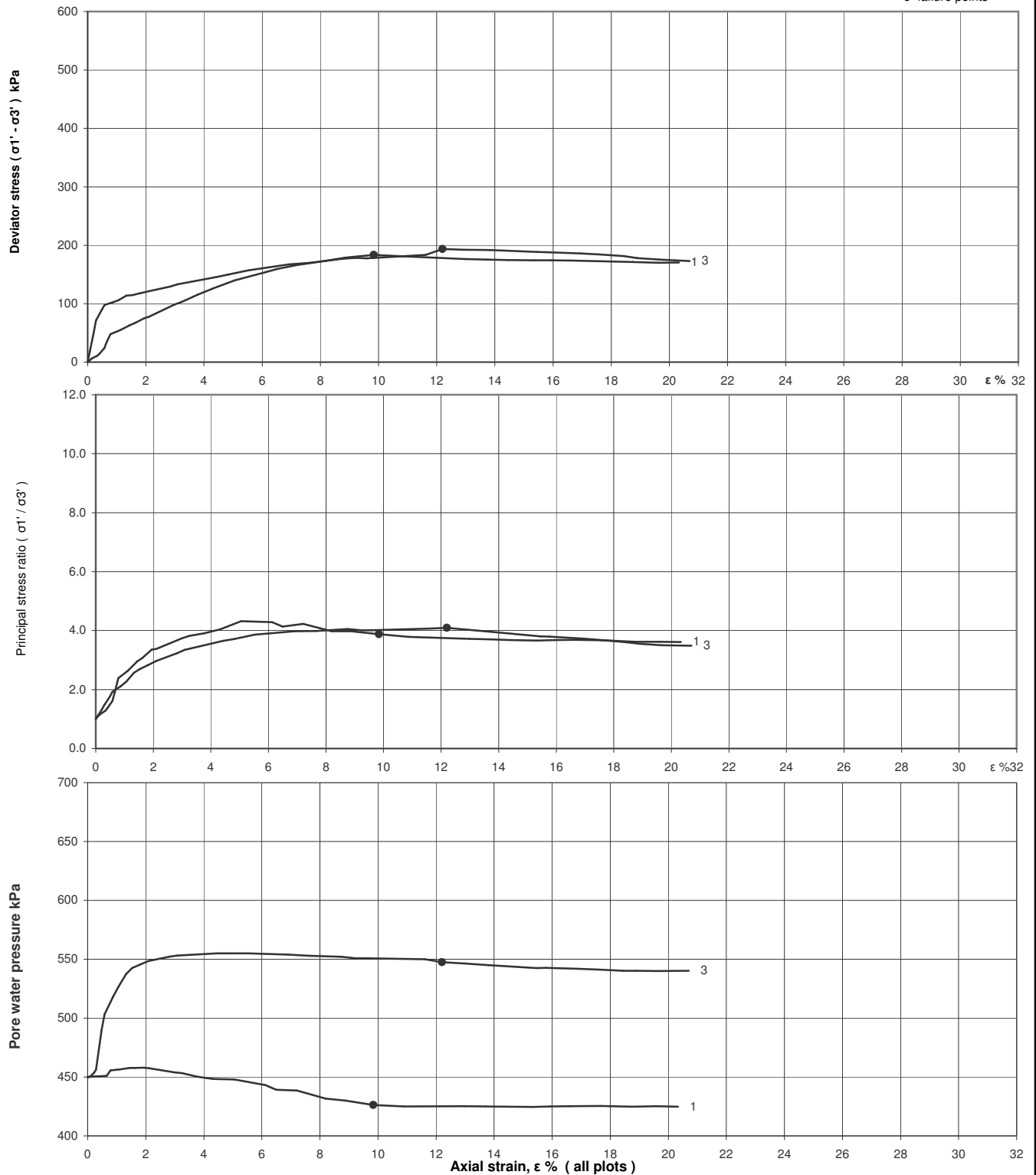


**Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure  
( BS1377 : Part 8 : 1990 )**

Project No	N4263-14	Sample Details:	Hole No	G3
Project Name	Dellimana		Depth (m BGL)	6.45-7.45
			No	4
			Type	
			ID	
			Spec Ref	

**Shearing stages - graphical data**

o failure points



Ref

SLR8.1  
Rev 85  
May 09



Printed:07/11/2014 11:56

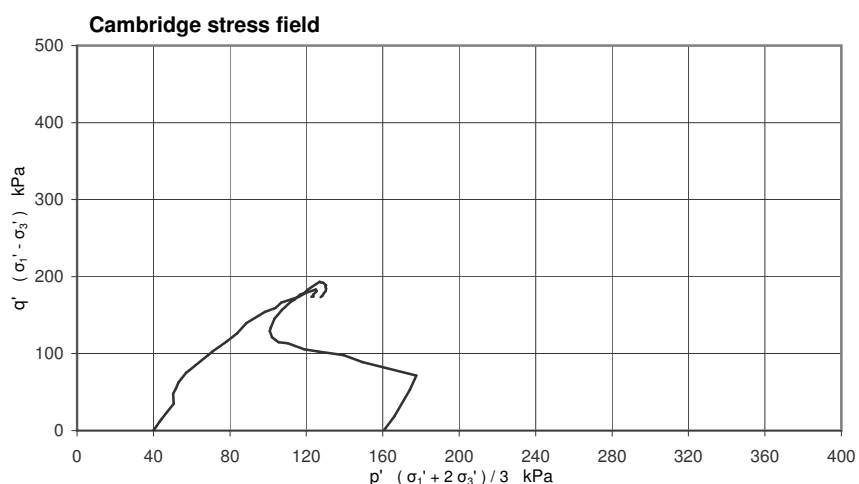
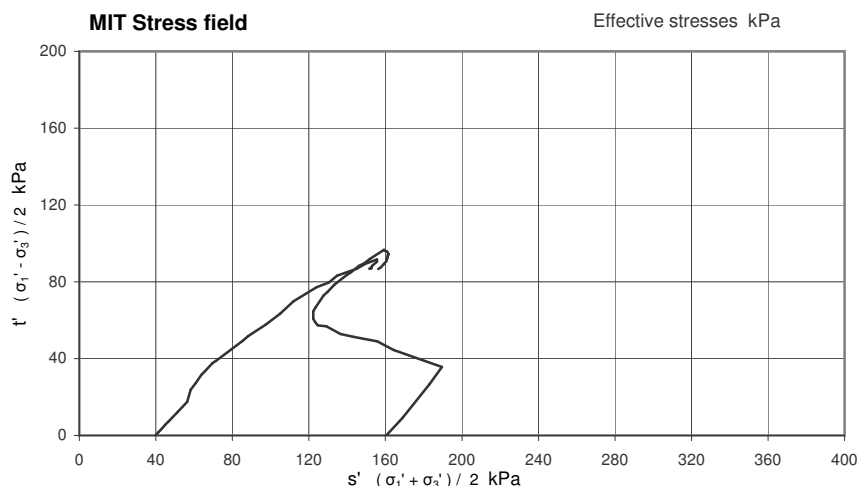
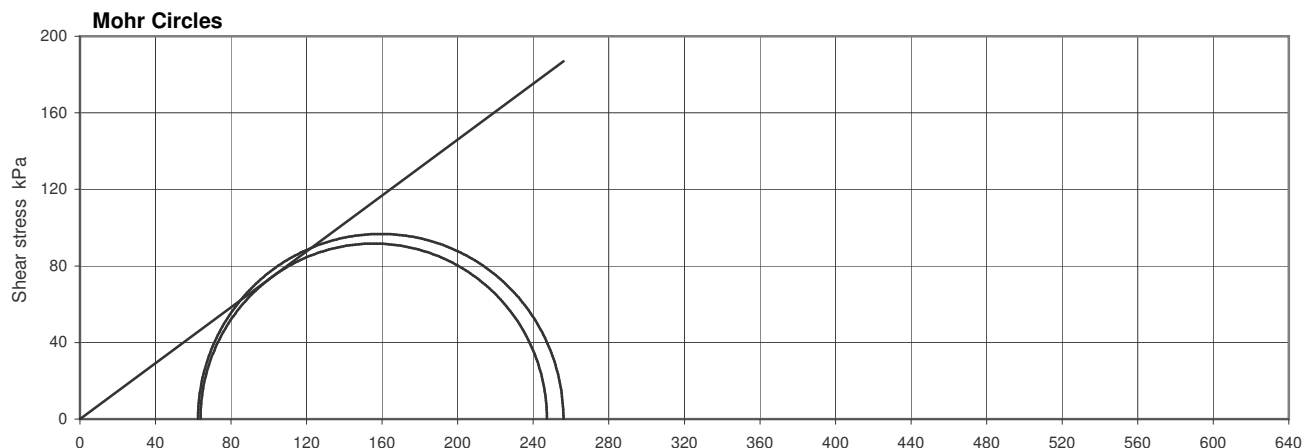
Figure

**CU**

sheet 2 of 3

# Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure ( BS1377 : Part 8 : 1990 )

Project No	N4263-14	Sample Details:	Hole No	G3
Project Name	Dellimana		Depth (m BGL)	6.45-7.45
			No	4
			Type	
			ID	
			Spec Ref	



## Compression stages

Specimen	1	2	3	
Cell pressure	490		610	kPa
Initial pwp	450		450	kPa
Initial $\sigma_3'$	40		160	kPa
Rate of strain	2.00		2.00	%/hr

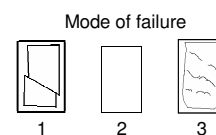
## Failure conditions

Criterion	Maximum deviator stress			
Axial strain	9.84		12.20	%
$(\sigma_1' / \sigma_3')_f$	3.875		4.095	
$(\sigma_1' - \sigma_3')_f$	183.4		193.5	kPa
$u_f$	426		548	kPa
$\sigma_3'_f$	64		63	kPa
$\sigma_1'_f$	247		256	kPa
$A_f$	-0.13		0.51	
Time to failure	4.9		6.1	hrs

## Shear Strength Parameters

		Linear regression	
$c'$	kPa	0.0	
$\phi'$	degrees	36.1	
		Manual re-assessment	
$c'$	kPa	-	
$\phi'$	degrees	-	

Notes : Deviator stresses corrected for area change, vertical side drains and 0.4 mm thick rubber membrane(s)  
Shear strength parameters interpreted as best fit line and through zero cohesion.



Ref SLR8.1 Rev 85 May 09	ESG Environmental Scientifics Group	UKAS TESTING 1157	Printed:07/11/2014 11:56	Figure <b>CU</b> sheet 3 of 3
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BS1377 : Part 8 : Clause 7 <b>Consolidated Undrained Triaxial Compression Test</b> <b>with Measurement of Pore Pressure</b>																															
Borehole Number: G4 Sample Number: 3 Depth (m): -		Description: Firm brownish grey clayey SAND with abundant shell fragments and organic material. Sand is fine to medium.																													
<b>SPECIMEN DETAILS</b> Depth within original sample Orientation within original sample		50mm from top Vertical																													
<b>TEST DETAILS</b> Specimen Preparation Cell Preparation Specimen Number Initial Diameter <span style="float: right;">mm</span> Initial Length <span style="float: right;">mm</span> Initial Moisture Content <span style="float: right;">%</span> Initial Wet Density <span style="float: right;">Mg/m<sup>3</sup></span> Drainage Conditions		Undisturbed Checks performed in accordance with Clause 3.5 <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th style="width: 25%;">Specimen No 1</th> <th style="width: 25%;">Specimen No 2</th> <th style="width: 25%;">Specimen No 3</th> </tr> </thead> <tbody> <tr> <td>37.9</td> <td>37.5</td> <td>37.4</td> </tr> <tr> <td>76.1</td> <td>75.8</td> <td>75.8</td> </tr> <tr> <td>55</td> <td>73</td> <td>60</td> </tr> <tr> <td>1.63</td> <td>1.68</td> <td>1.63</td> </tr> </tbody> </table> One end and radial boundary			Specimen No 1	Specimen No 2	Specimen No 3	37.9	37.5	37.4	76.1	75.8	75.8	55	73	60	1.63	1.68	1.63												
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<b>CONSOLIDATION STAGE</b> Cell Pressure <span style="float: right;">kPa</span> Back Pressure <span style="float: right;">kPa</span> Effective Pressure <span style="float: right;">kPa</span> Final Pore Pressure <span style="float: right;">kPa</span> Final Pore Pressure Dissipation <span style="float: right;">%</span> Duration <span style="float: right;">day(s)</span>		<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 25%;">350</td> <td style="width: 25%;">400</td> <td style="width: 25%;">500</td> </tr> <tr> <td>300</td> <td>300</td> <td>300</td> </tr> <tr> <td>50</td> <td>100</td> <td>200</td> </tr> <tr> <td>300</td> <td>300</td> <td>300</td> </tr> <tr> <td>100</td> <td>100</td> <td>100</td> </tr> <tr> <td>1</td> <td>1</td> <td>1</td> </tr> </tbody> </table>			350	400	500	300	300	300	50	100	200	300	300	300	100	100	100	1	1	1									
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1	1	1																													
<b>SHEARING STAGE</b> Cell Pressure <span style="float: right;">kPa</span> Rate of Axial Displacement <span style="float: right;">mm/min</span> Initial Pore Pressure <span style="float: right;">kPa</span> Initial Effective Stress <span style="float: right;">kPa</span>		<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 25%;">350</td> <td style="width: 25%;">400</td> <td style="width: 25%;">500</td> </tr> <tr> <td>0.012</td> <td>0.012</td> <td>0.012</td> </tr> <tr> <td>300</td> <td>300</td> <td>300</td> </tr> <tr> <td>50</td> <td>100</td> <td>200</td> </tr> </tbody> </table>			350	400	500	0.012	0.012	0.012	300	300	300	50	100	200															
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<b>CONDITIONS AT FAILURE</b> <span style="float: right;">criteria</span> Pore Pressure <span style="float: right;">kPa</span> Minor Effective Principal Stress <span style="float: right;">kPa</span> Deviator Stress <span style="float: right;">kPa</span> Major Effective Principal Stress <span style="float: right;">kPa</span> Effective Principal Stress Ratio Pore Pressure Parameter A Axial Strain <span style="float: right;">%</span> Correction applied to Deviator Stress <span style="float: right;">kPa</span> Duration <span style="float: right;">day(s)</span>		Maximum Principal Stress Ratio <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 25%;">325</td> <td style="width: 25%;">374</td> <td style="width: 25%;">459</td> </tr> <tr> <td>25</td> <td>26</td> <td>41</td> </tr> <tr> <td>164</td> <td>182</td> <td>320</td> </tr> <tr> <td>189</td> <td>208</td> <td>361</td> </tr> <tr> <td>7.48</td> <td>7.88</td> <td>8.82</td> </tr> <tr> <td>0.15</td> <td>0.41</td> <td>0.50</td> </tr> <tr> <td>20.1</td> <td>19.9</td> <td>20.0</td> </tr> <tr> <td>13</td> <td>14</td> <td>14</td> </tr> <tr> <td>1</td> <td>1</td> <td>1</td> </tr> </tbody> </table>			325	374	459	25	26	41	164	182	320	189	208	361	7.48	7.88	8.82	0.15	0.41	0.50	20.1	19.9	20.0	13	14	14	1	1	1
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<b>FAILURE SKETCHES</b>		<div style="display: flex; justify-content: space-around; align-items: center;"> </div>																													

Checked and Approved

Initials:

RJP

Date: 25/11/14

Project Number:

**GEO / 21936**

Project Name:

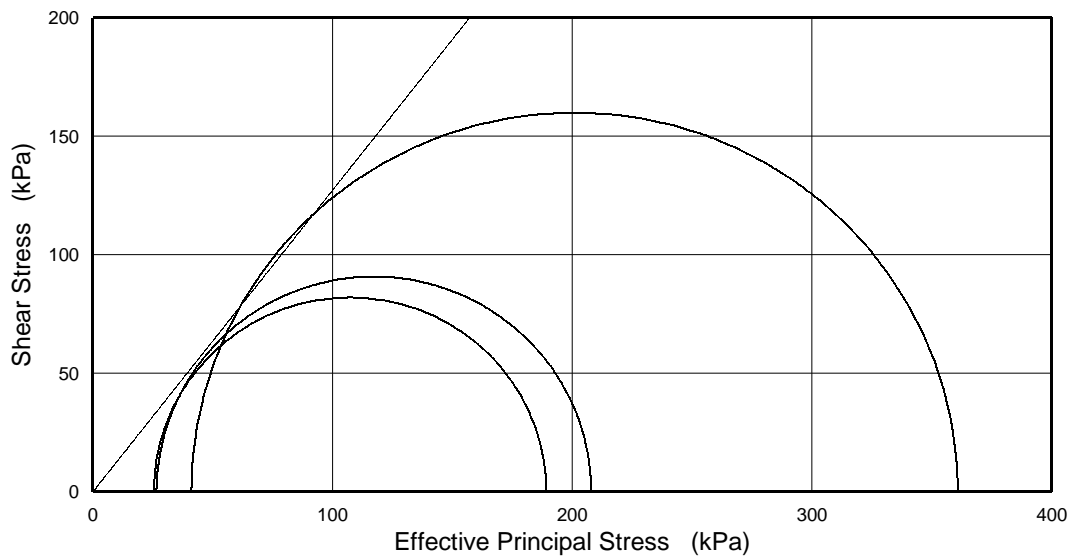
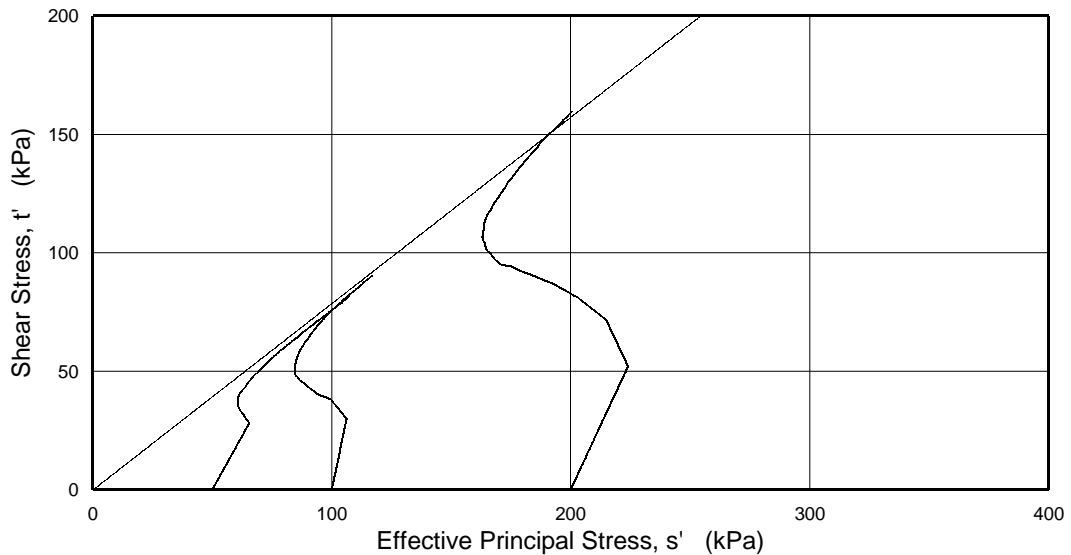
**DELIMARA REGASIFICATION PLANT**

**Project Number J2094**

BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
with Measurement of Pore Pressure

Borehole Number: G4  
Sample Number: 3  
Depth (m): -

Description:  
Firm brownish grey clayey SAND with abundant shell fragments and organic material. Sand is fine to medium.



Checked and  
Approved

Initials:

*RJP*

Date: 25/11/14

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**GEO / 21936**

Project Name:

**DELIMARA REGASIFICATION PLANT**

**Project Number J2094**

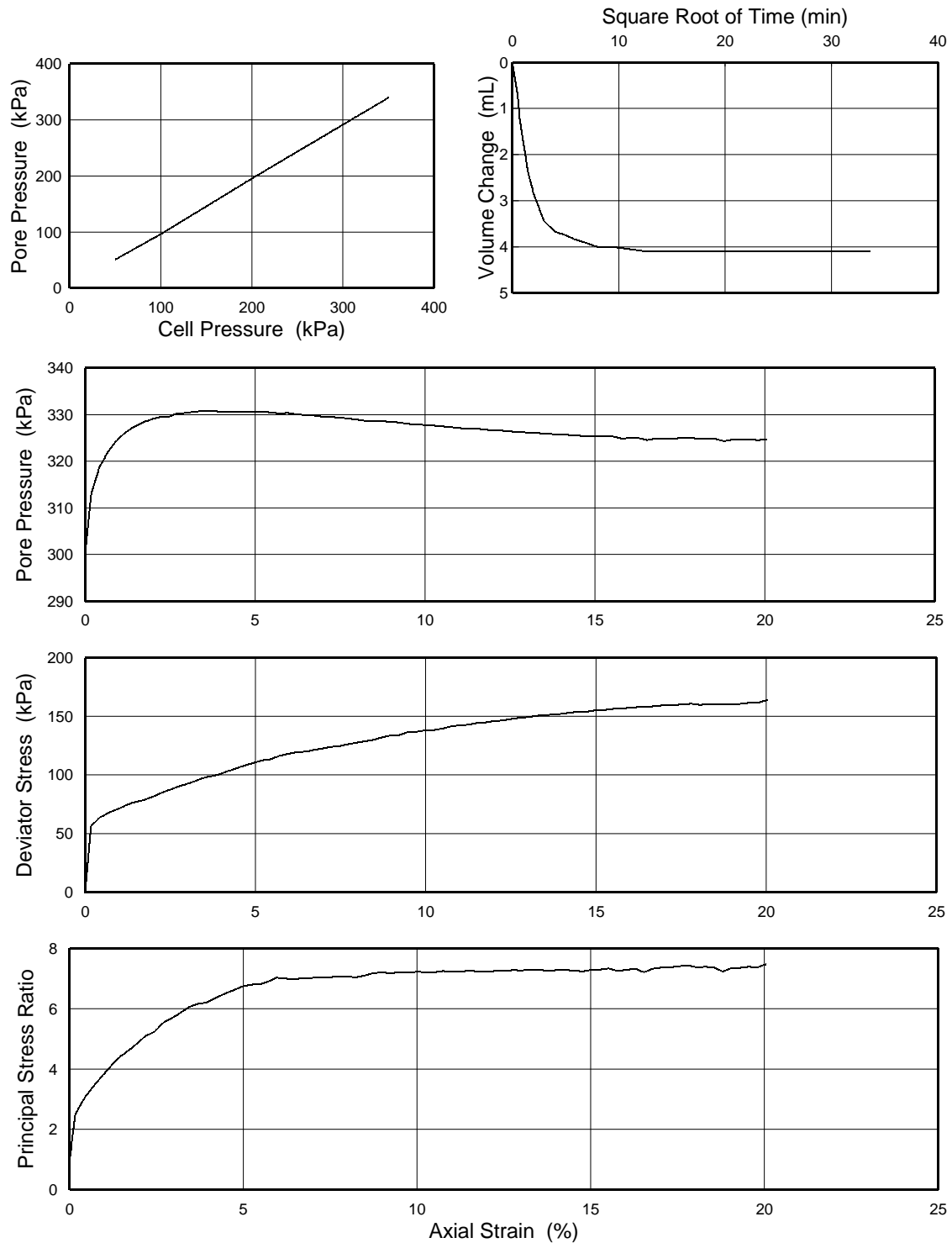


**GEOLABS**®

BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
with Measurement of Pore Pressure

Borehole Number: G4  
Sample Number: 3  
Depth (m): -

**Specimen No 1**



Checked and  
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Initials:

*RJP*

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**DELIMARA REGASIFICATION PLANT**  
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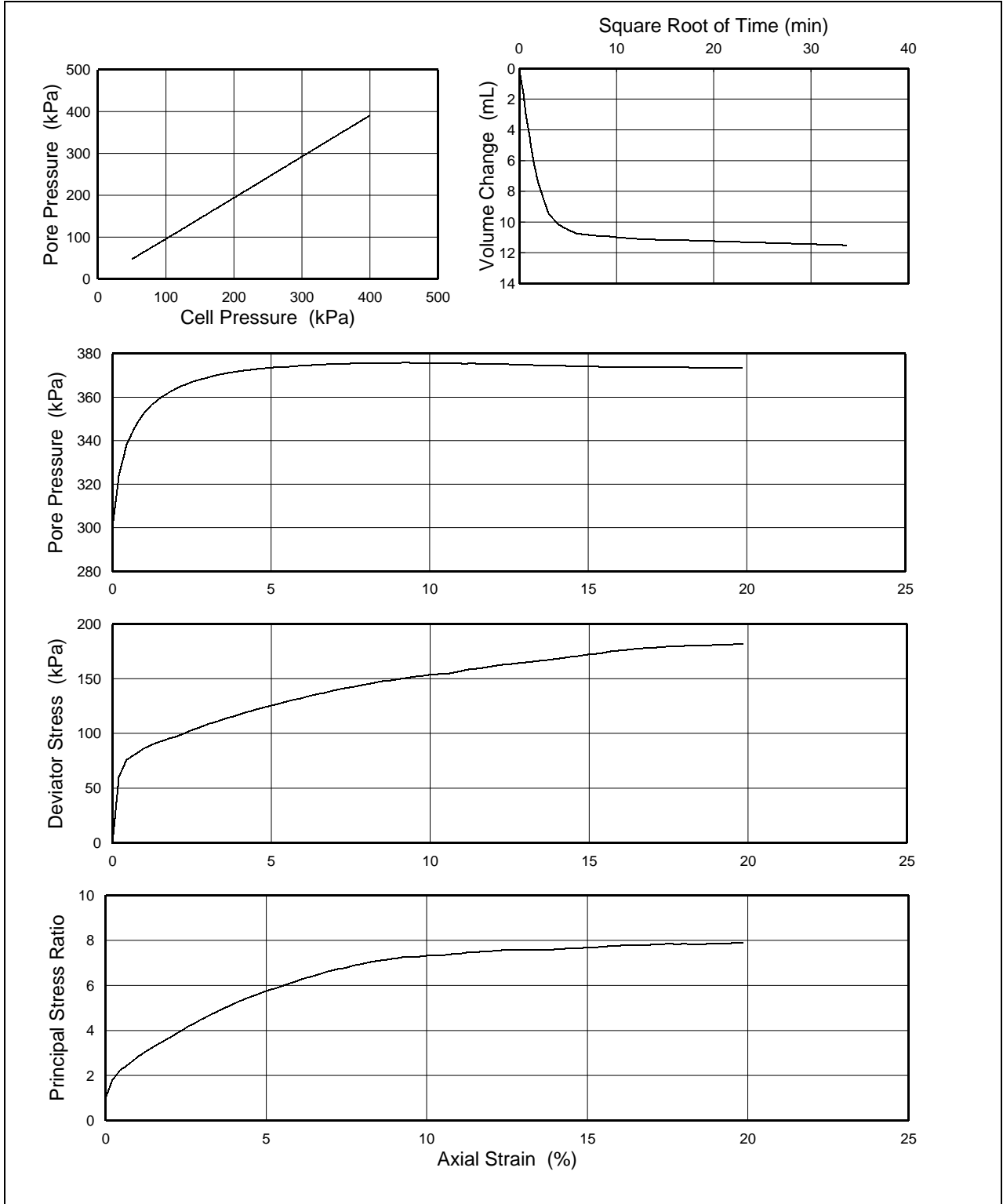
**GEOLABS**



BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
 with Measurement of Pore Pressure

Borehole Number: G4  
 Sample Number: 3  
 Depth (m): -

**Specimen No 2**



**Checked and Approved**

Initials:

*RJP*

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Project Name:

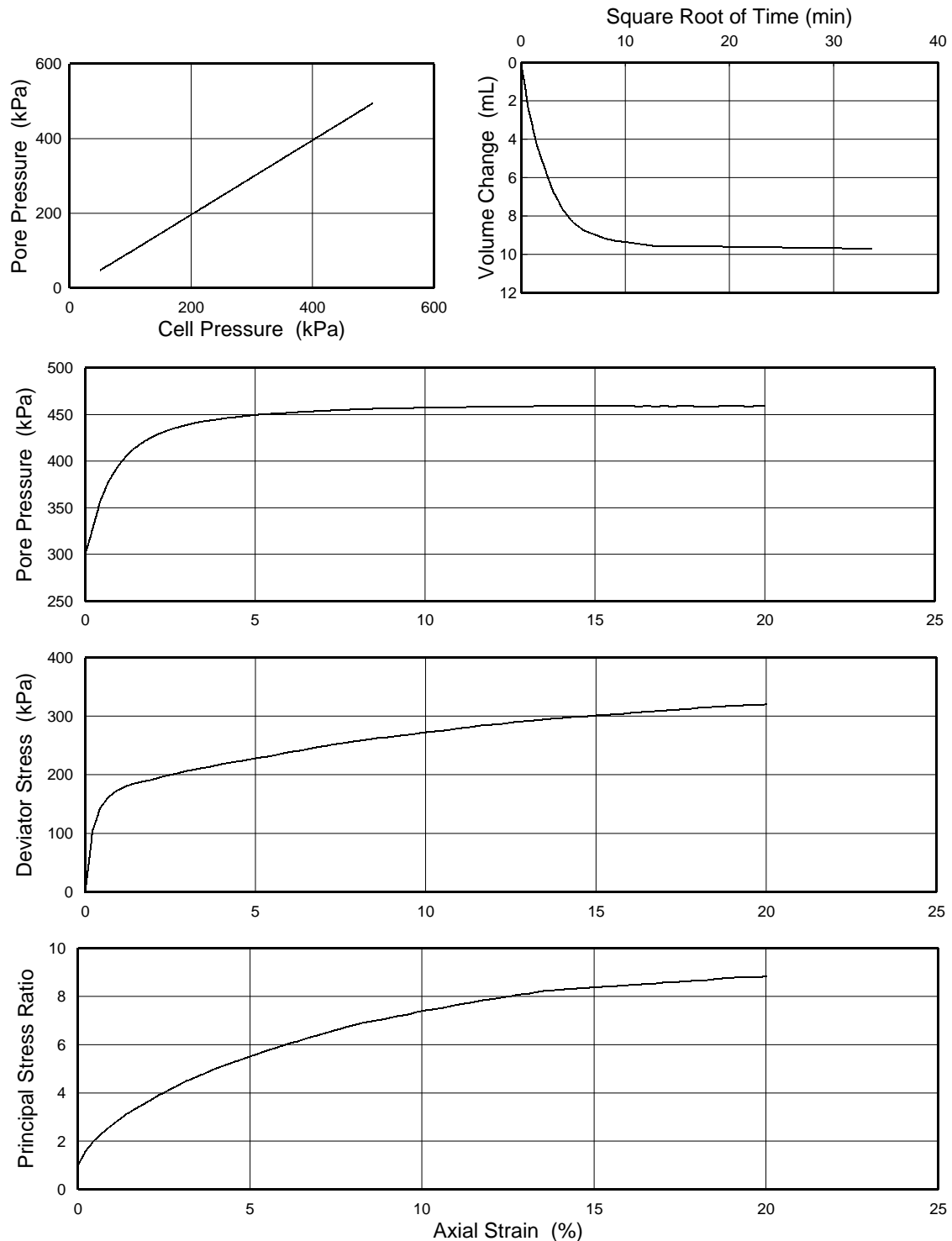
**DELIMARA REGASIFICATION PLANT**  
**Project Number J2094**



BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
 with Measurement of Pore Pressure

Borehole Number: G4  
 Sample Number: 3  
 Depth (m): -

**Specimen No 3**



**Checked and Approved**

Initials:

*RJP*

Date: 25/11/14

Project Number:

**GEO / 21936**

Project Name:

**DELIMARA REGASIFICATION PLANT**  
**Project Number J2094**



BS1377 : Part 8 : Clause 7 <b>Consolidated Undrained Triaxial Compression Test</b> <b>with Measurement of Pore Pressure</b>																																												
Borehole Number: G5 Sample Number: S3 Depth (m): 3.00 - 4.00		Description: Very soft grey sandy CLAY with shell fragments																																										
<b>SPECIMEN DETAILS</b> Depth within original sample Orientation within original sample		mm from top Vertical																																										
<b>TEST DETAILS</b> Specimen Preparation Cell Preparation Specimen Number Initial Diameter Initial Length Initial Moisture Content Initial Wet Density Drainage Conditions		Undisturbed Checks performed in accordance with Clause 3.5 <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 25%;">Specimen No 1</th> <th style="width: 25%;">Specimen No 2</th> <th style="width: 25%;">Specimen No 3</th> </tr> </thead> <tbody> <tr> <td>38.7</td> <td>38.6</td> <td>38.3</td> </tr> <tr> <td>73.6</td> <td>74.0</td> <td>74.0</td> </tr> <tr> <td>43</td> <td>44</td> <td>46</td> </tr> <tr> <td>1.80</td> <td>1.79</td> <td>1.81</td> </tr> </tbody> </table>			Specimen No 1	Specimen No 2	Specimen No 3	38.7	38.6	38.3	73.6	74.0	74.0	43	44	46	1.80	1.79	1.81																									
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<b>CONSOLIDATION STAGE</b> Cell Pressure Back Pressure Effective Pressure Final Pore Pressure Final Pore Pressure Dissipation Duration		<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr><td>340</td><td>380</td><td>460</td></tr> <tr><td>300</td><td>300</td><td>300</td></tr> <tr><td>40</td><td>80</td><td>160</td></tr> <tr><td>301</td><td>300</td><td>300</td></tr> <tr><td>98</td><td>100</td><td>100</td></tr> <tr><td>2</td><td>2</td><td>1</td></tr> </tbody> </table>			340	380	460	300	300	300	40	80	160	301	300	300	98	100	100	2	2	1																						
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<b>SHEARING STAGE</b> Cell Pressure Rate of Axial Displacement Initial Pore Pressure Initial Effective Stress		<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr><td>340</td><td>380</td><td>460</td></tr> <tr><td>0.012</td><td>0.012</td><td>0.012</td></tr> <tr><td>301</td><td>300</td><td>300</td></tr> <tr><td>39</td><td>80</td><td>160</td></tr> </tbody> </table>			340	380	460	0.012	0.012	0.012	301	300	300	39	80	160																												
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<b>CONDITIONS AT FAILURE</b> Pore Pressure Minor Effective Principal Stress Deviator Stress Major Effective Principal Stress Effective Principal Stress Ratio Pore Pressure Parameter A Axial Strain Correction applied to Deviator Stress Duration		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">Maximum Principal Stress Ratio</th> <th style="width: 25%;"></th> <th style="width: 25%;"></th> <th style="width: 25%;"></th> </tr> </thead> <tbody> <tr><td>304</td><td>329</td><td>388</td><td></td></tr> <tr><td>36</td><td>51</td><td>72</td><td></td></tr> <tr><td>177</td><td>211</td><td>312</td><td></td></tr> <tr><td>213</td><td>262</td><td>384</td><td></td></tr> <tr><td>5.86</td><td>5.15</td><td>5.34</td><td></td></tr> <tr><td>0.02</td><td>0.14</td><td>0.28</td><td></td></tr> <tr><td>6.0</td><td>6.9</td><td>7.7</td><td></td></tr> <tr><td>11</td><td>11</td><td>12</td><td></td></tr> <tr><td>1</td><td>1</td><td>1</td><td></td></tr> </tbody> </table>			Maximum Principal Stress Ratio				304	329	388		36	51	72		177	211	312		213	262	384		5.86	5.15	5.34		0.02	0.14	0.28		6.0	6.9	7.7		11	11	12		1	1	1	
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Final Moisture Content Final Wet Density		<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr><td>35</td><td>35</td><td>35</td></tr> <tr><td>1.85</td><td>1.84</td><td>1.86</td></tr> </tbody> </table>			35	35	35	1.85	1.84	1.86																																		
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<b>FAILURE SKETCHES</b>		<div style="display: flex; justify-content: space-around; align-items: center;"> </div>																																										

Checked and Approved

Initials:

RJP

Date: 05/12/14

Project Number:

GEO / 22008

Project Name:

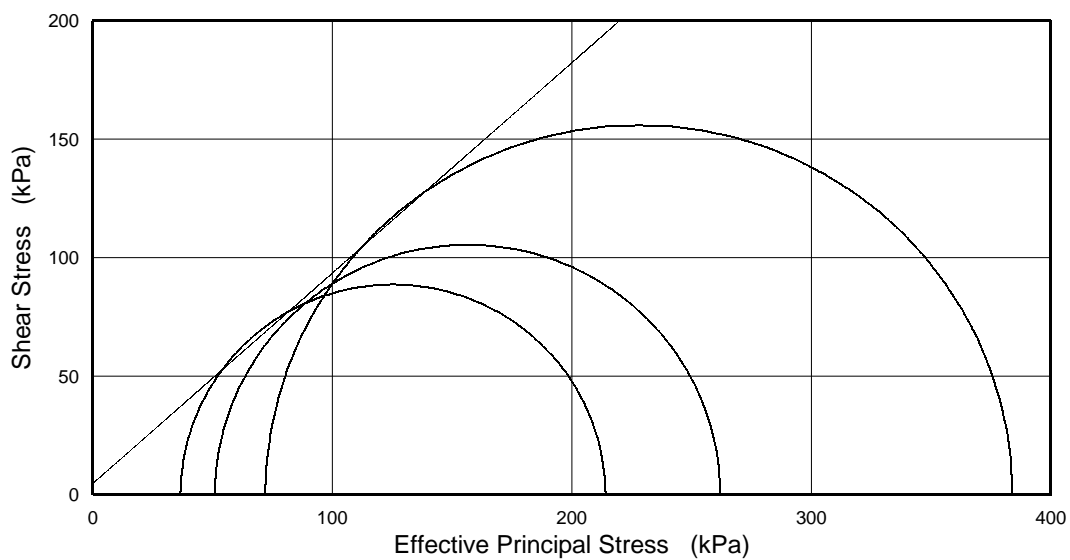
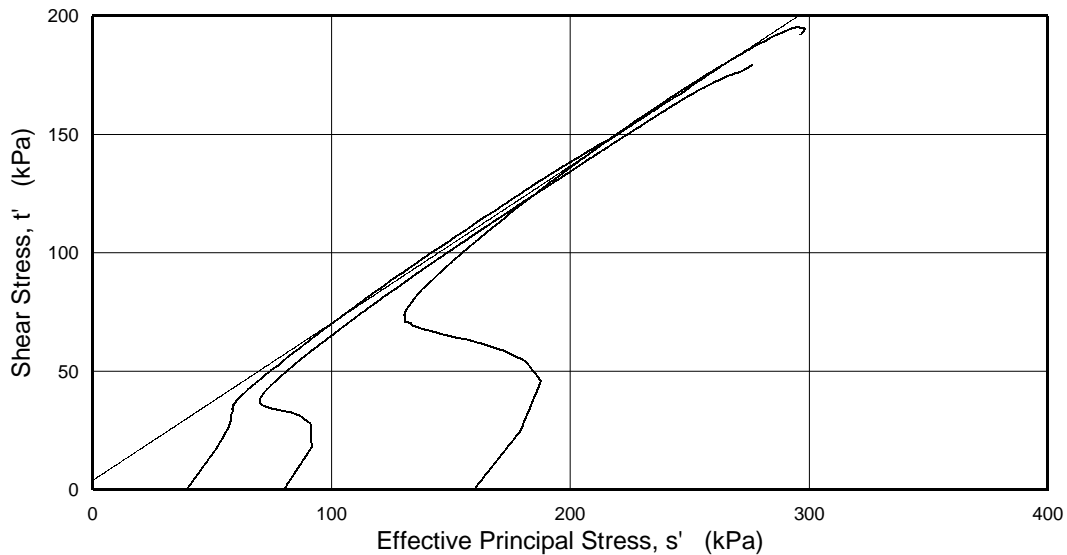
DELIMARA REGASIFICATION PLANT

Project Number J2094

BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
 with Measurement of Pore Pressure

Borehole Number: G5  
 Sample Number: S3  
 Depth (m): 3.00 - 4.00

Description:  
 Very soft grey sandy CLAY with shell fragments



Checked and  
Approved

Initials:

*RJP*

Date: 05/12/14

Project Number:

**GEO / 22008**

Project Name:

**DELIMARA REGASIFICATION PLANT**  
**Project Number J2094**

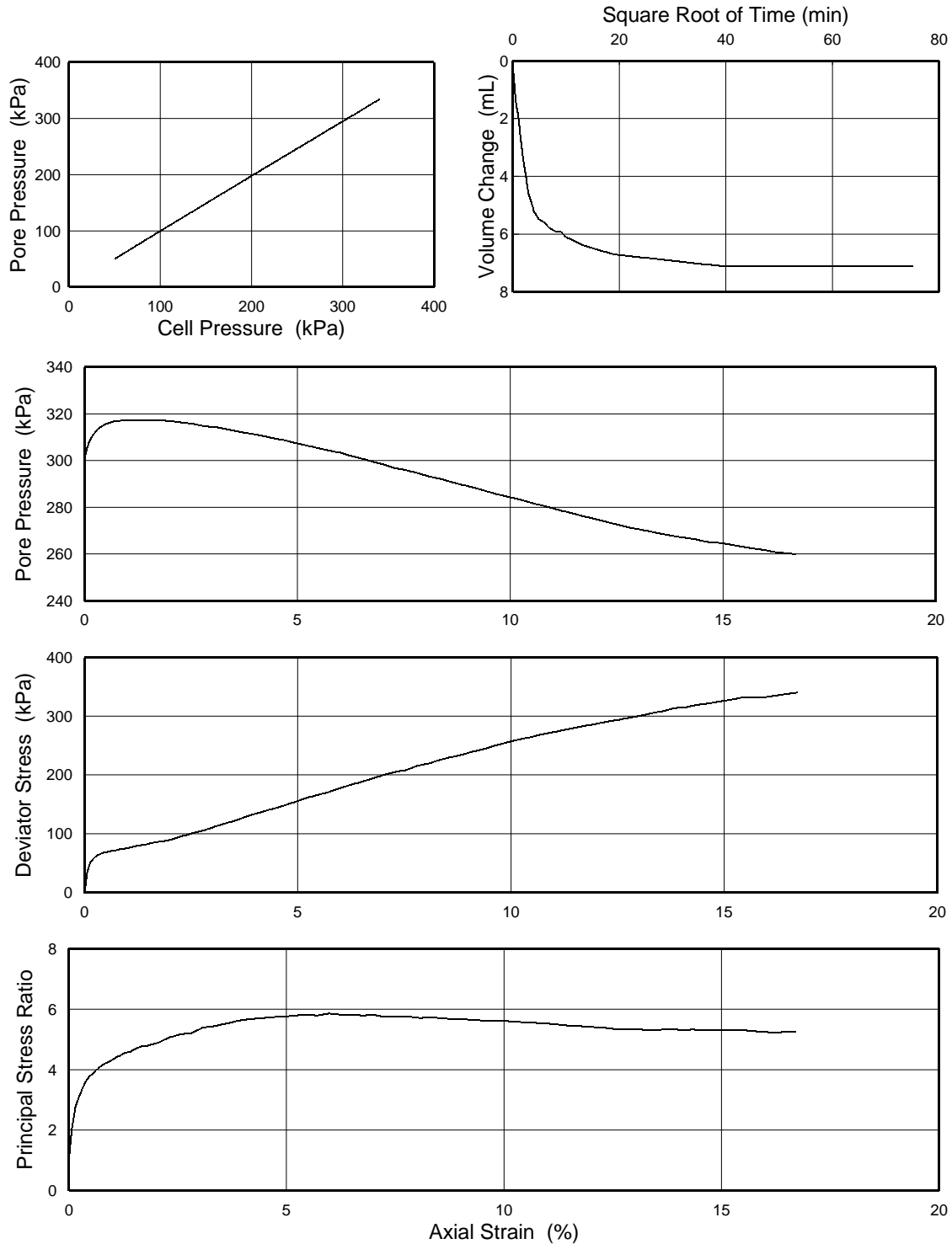


**GEOLABS®**

BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
with Measurement of Pore Pressure

Borehole Number: G5  
Sample Number: S3  
Depth (m): 3.00 - 4.00

**Specimen No 1**



**Checked and Approved**

Initials:

*RJP*

Date: 05/12/14

Project Number:

**GEO / 22008**

Project Name:

**DELIMARA REGASIFICATION PLANT**

**Project Number J2094**



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Test Report by GEOLABS Limited Bucknalls Lane, Garston, Watford, Hertfordshire, WD25 9XX

Authorised Signatories: [] J R Masters (Qual Mgr) [] C F Wallace (Tech Mgr) [] P T Heritage (Ops Mgr) [X] R J Platt (Lead Tech)

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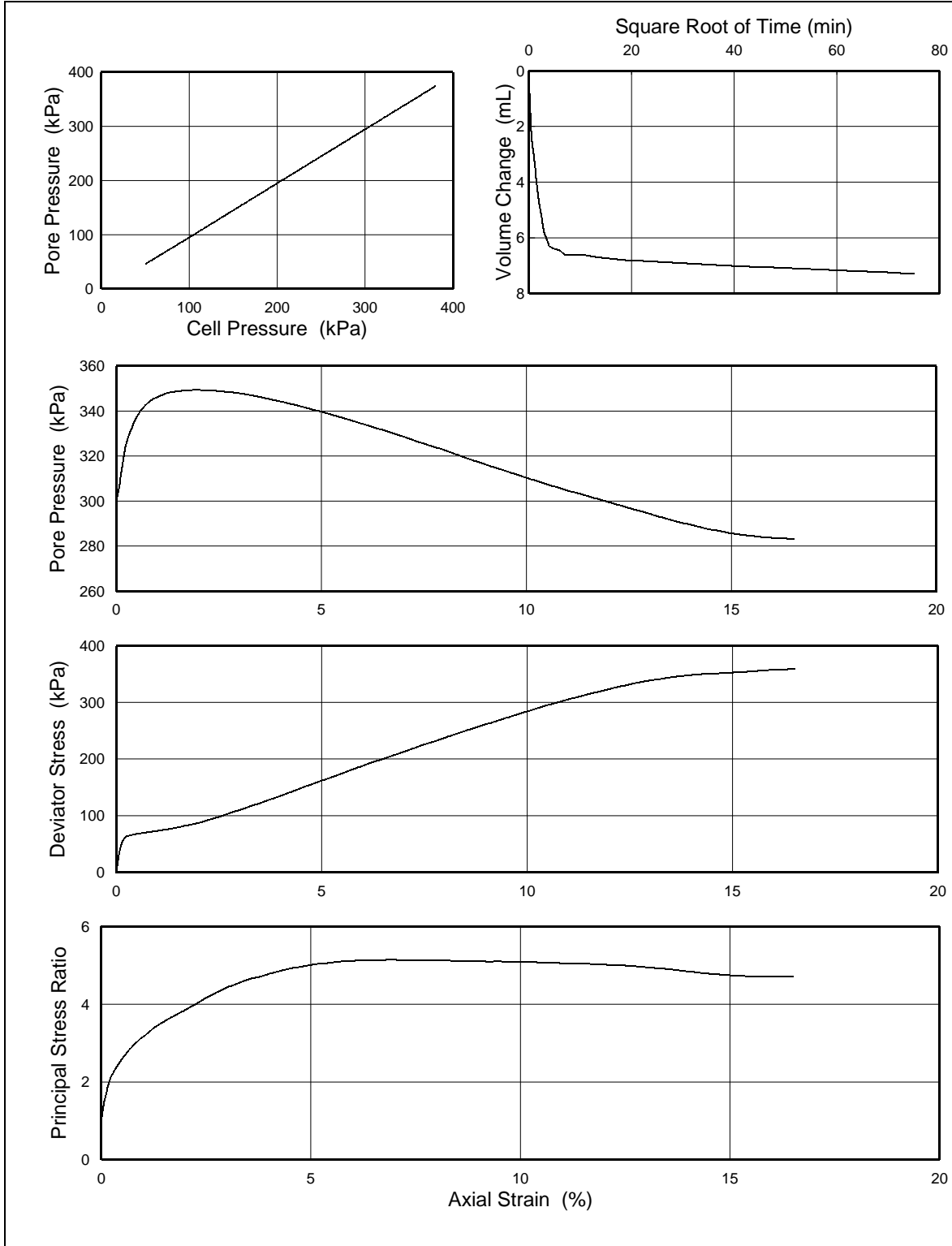
(Ref6011.460289) Page 3 of 5

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BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
 with Measurement of Pore Pressure

Borehole Number: G5  
 Sample Number: S3  
 Depth (m): 3.00 - 4.00

**Specimen No 2**



**Checked and Approved**

Initials:

*RJP*

Date: 05/12/14

Project Number:

**GEO / 22008**

Project Name:

**DELIMARA REGASIFICATION PLANT**

**Project Number J2094**



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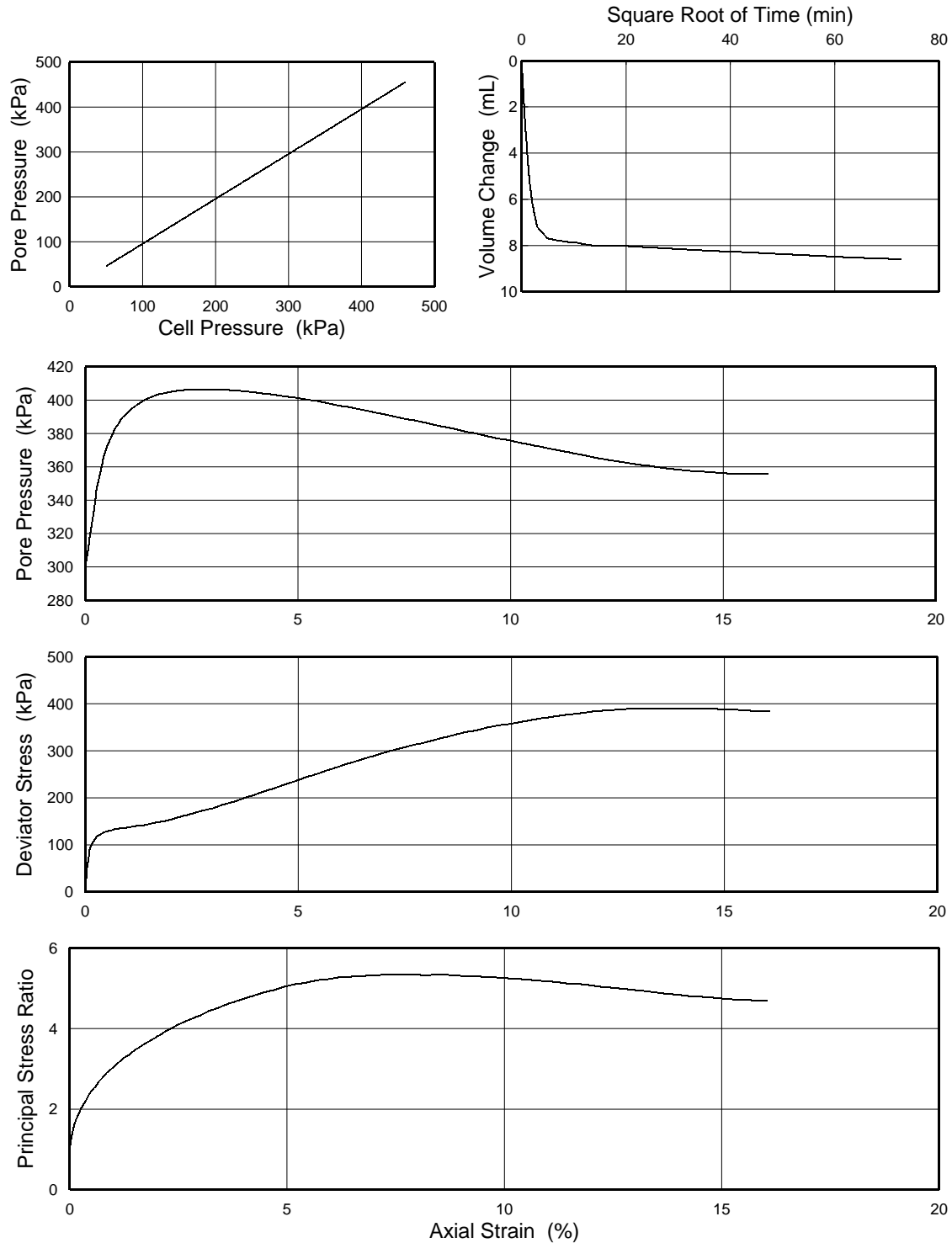
(Ref6011.460532) Page 4 of 5

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BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
 with Measurement of Pore Pressure

Borehole Number: G5  
 Sample Number: S3  
 Depth (m): 3.00 - 4.00

**Specimen No 3**



**Checked and Approved**

Initials:

*RJP*

Date: 05/12/14

Project Number:

**GEO / 22008**

Project Name:

**DELIMARA REGASIFICATION PLANT**  
**Project Number J2094**



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(Ref6011.460764) Page 5 of 5

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BS1377 : Part 8 : Clause 7 <b>Consolidated Undrained Triaxial Compression Test</b> <b>with Measurement of Pore Pressure</b>																															
Borehole Number: G5 Sample Number: 4 Depth (m): 3.00		Description: Soft grey sandy CLAY with abundant shell fragments																													
<b>SPECIMEN DETAILS</b> Depth within original sample Orientation within original sample		20mm from top Vertical																													
<b>TEST DETAILS</b> Specimen Preparation Cell Preparation Specimen Number Initial Diameter <span style="float: right;">mm</span> Initial Length <span style="float: right;">mm</span> Initial Moisture Content <span style="float: right;">%</span> Initial Wet Density <span style="float: right;">Mg/m<sup>3</sup></span> Drainage Conditions		Undisturbed Checks performed in accordance with Clause 3.5 <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th style="width: 25%;">Specimen No 1</th> <th style="width: 25%;">Specimen No 2</th> <th style="width: 25%;">Specimen No 3</th> </tr> </thead> <tbody> <tr> <td>37.5</td> <td>37.3</td> <td>37.8</td> </tr> <tr> <td>68.3</td> <td>68.2</td> <td>73.4</td> </tr> <tr> <td>40</td> <td>43</td> <td>41</td> </tr> <tr> <td>2.10</td> <td>2.14</td> <td>1.94</td> </tr> </tbody> </table> One end and radial boundary			Specimen No 1	Specimen No 2	Specimen No 3	37.5	37.3	37.8	68.3	68.2	73.4	40	43	41	2.10	2.14	1.94												
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339	379	449																													
0.95	0.99	0.95																													
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325	340	401																													
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<b>FAILURE SKETCHES</b>		<div style="display: flex; justify-content: space-around; align-items: center;"> </div>																													

Checked and Approved

Initials:

RJP

Date: 27/11/14

Project Number:

GEO / 21936

Project Name:

DELIMARA REGASIFICATION PLANT

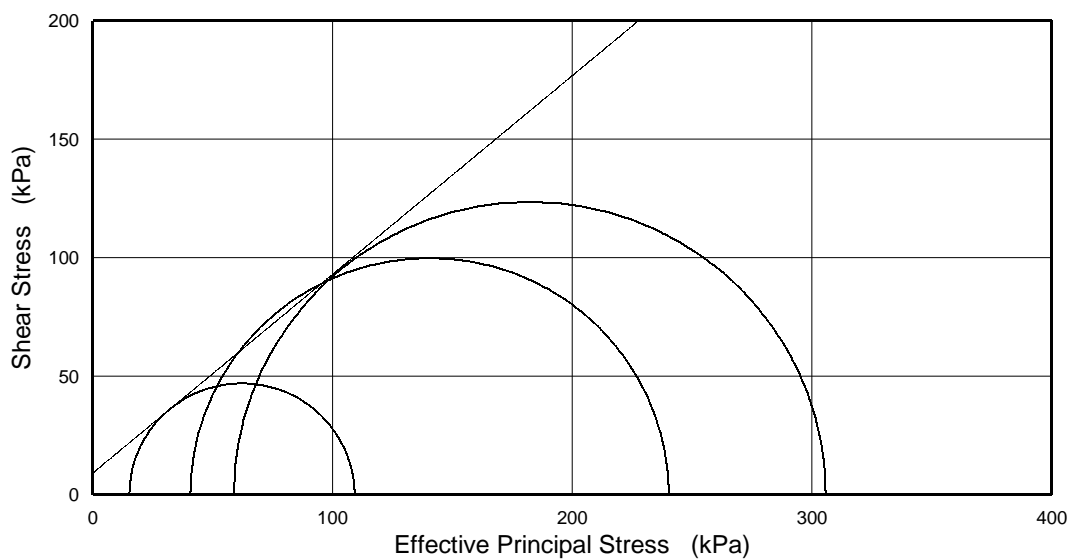
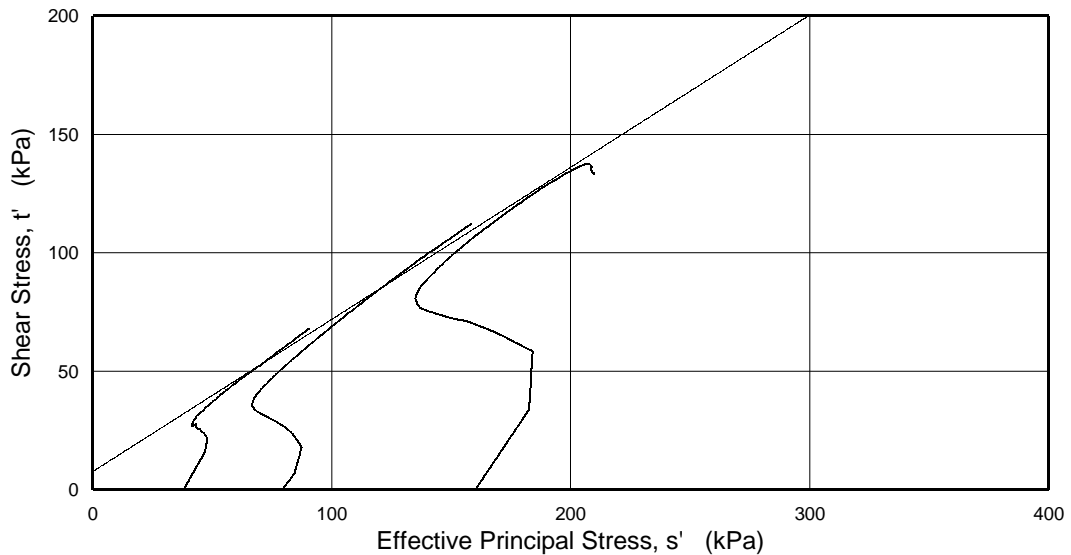
Project Number J2094



BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
with Measurement of Pore Pressure

Borehole Number: G5  
Sample Number: 4  
Depth (m): 3.00

Description:  
Soft grey sandy CLAY with abundant shell fragments



Checked and  
Approved

Initials:

*RJP*

Date: 27/11/14

Project Number:

**GEO / 21936**

Project Name:

**DELIMARA REGASIFICATION PLANT**  
**Project Number J2094**

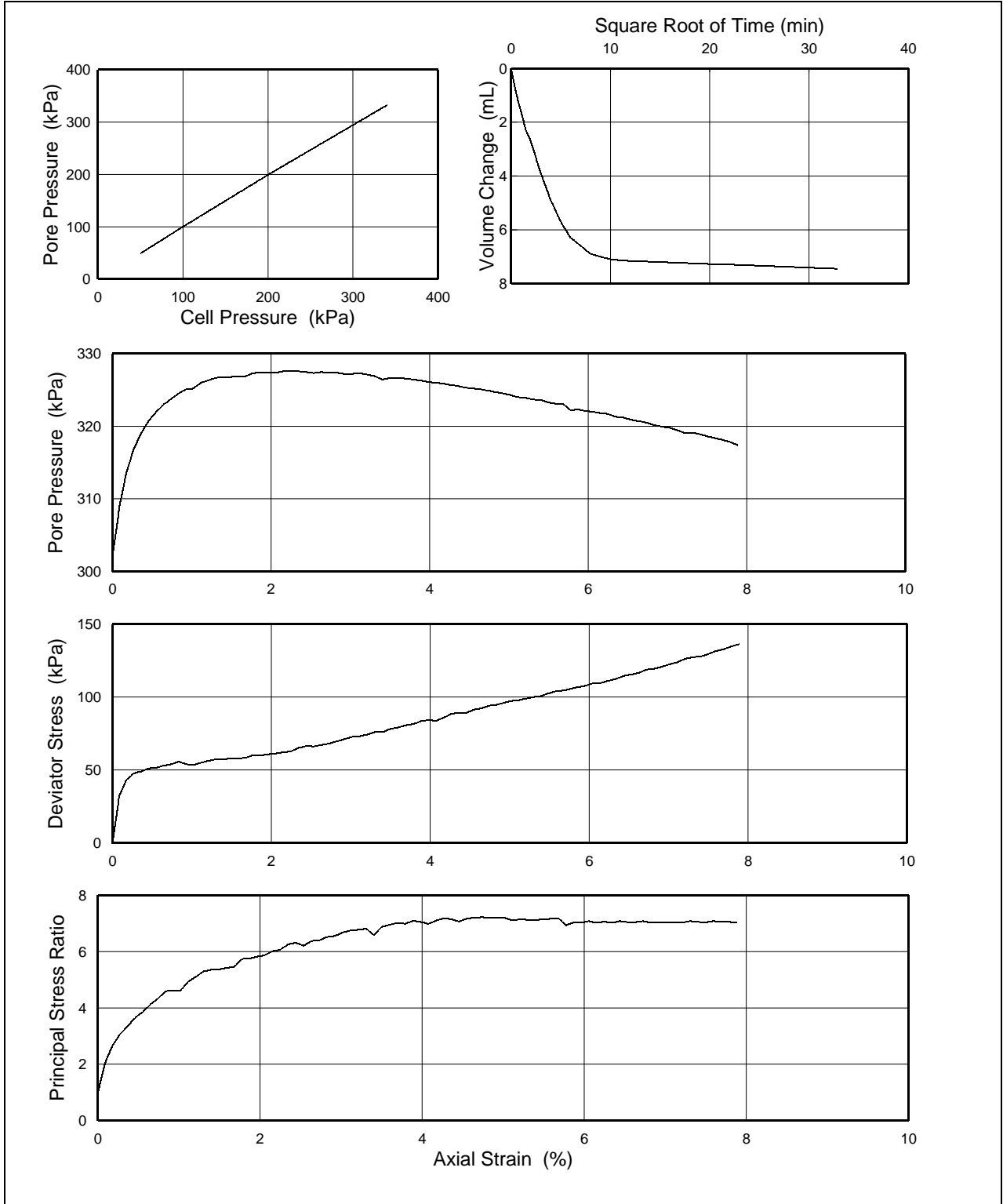


**GEOLABS**®

BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
 with Measurement of Pore Pressure

Borehole Number: G5  
 Sample Number: 4  
 Depth (m): 3.00

**Specimen No 1**



**Checked and Approved**

Initials:

*RJP*

Date: 27/11/14

Project Number:

**GEO / 21936**

Project Name:

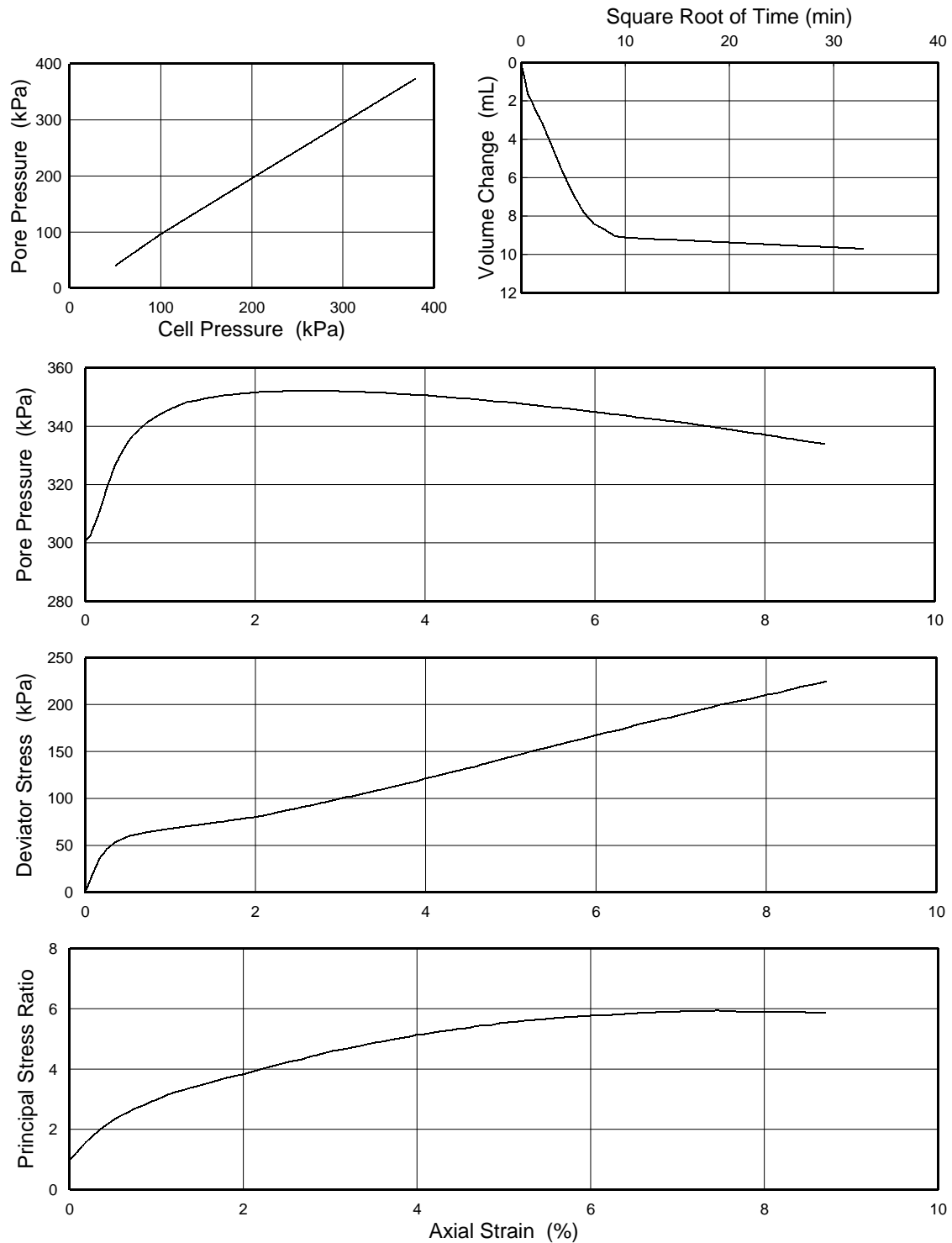
**DELIMARA REGASIFICATION PLANT**  
**Project Number J2094**



BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
 with Measurement of Pore Pressure

Borehole Number: G5  
 Sample Number: 4  
 Depth (m): 3.00

**Specimen No 2**



**Checked and Approved**

Initials:

*RJP*

Date: 27/11/14

Project Number:

**GEO / 21936**

Project Name:

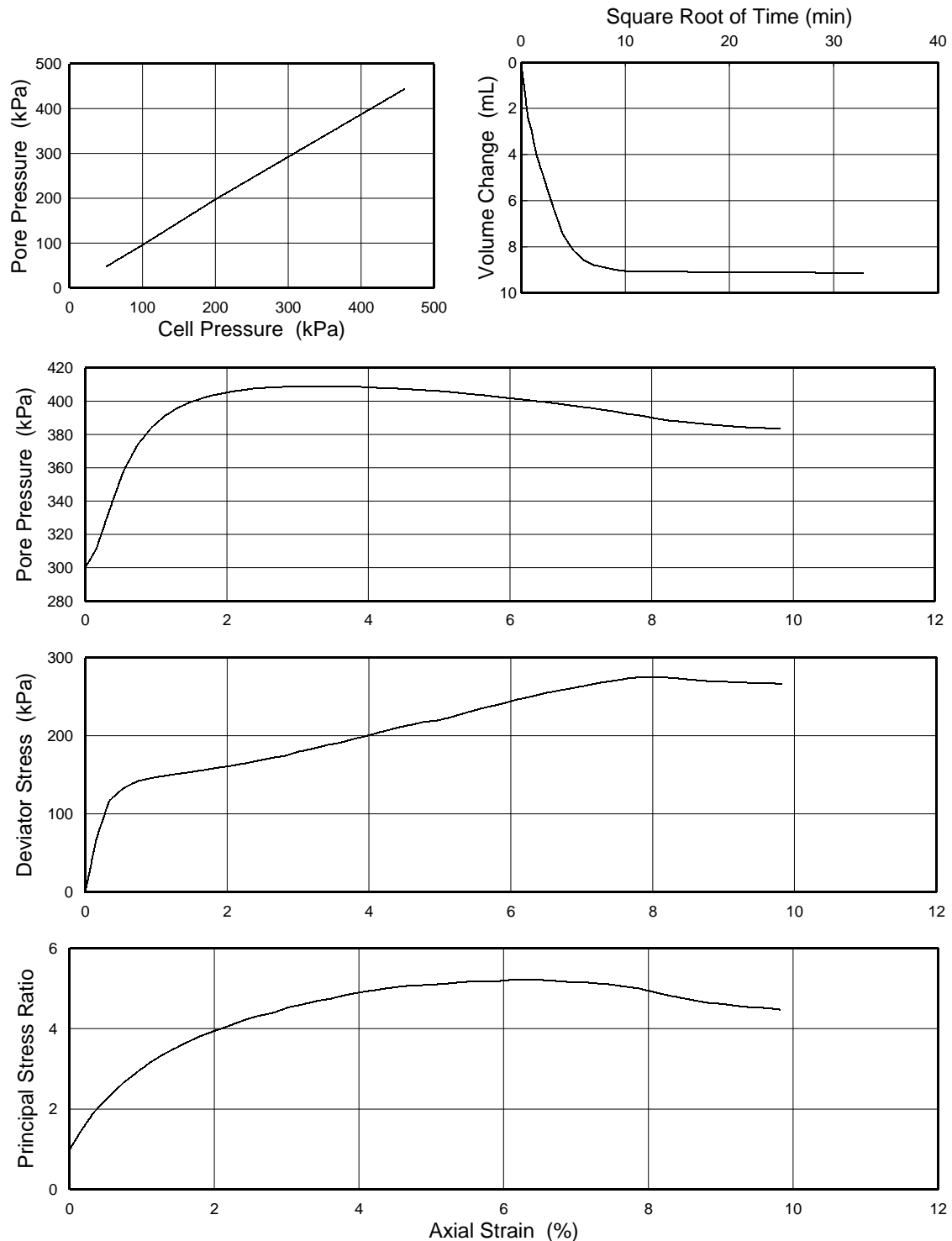
**DELIMARA REGASIFICATION PLANT**  
**Project Number J2094**



BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
 with Measurement of Pore Pressure

Borehole Number: G5  
 Sample Number: 4  
 Depth (m): 3.00

**Specimen No 3**



**Checked and Approved**

Initials:

*RJP*

Date: 27/11/14

Project Number:

**GEO / 21936**

Project Name:

**DELIMARA REGASIFICATION PLANT**  
**Project Number J2094**



BS1377 : Part 8 : Clause 7 <b>Consolidated Undrained Triaxial Compression Test</b> <b>with Measurement of Pore Pressure</b>																															
Borehole Number: G6 Sample Number: 3 Depth (m): 19.40		Description: Soft grey sandy organic gravelly CLAY with roots. Gravel is fine.																													
<b>SPECIMEN DETAILS</b> Depth within original sample Orientation within original sample		15mm from top Vertical																													
<b>TEST DETAILS</b> Specimen Preparation Cell Preparation Specimen Number Initial Diameter <span style="float: right;">mm</span> Initial Length <span style="float: right;">mm</span> Initial Moisture Content <span style="float: right;">%</span> Initial Wet Density <span style="float: right;">Mg/m³</span> Drainage Conditions		Undisturbed Checks performed in accordance with Clause 3.5 <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th style="width: 25%;">Specimen No 1</th> <th style="width: 25%;">Specimen No 2</th> <th style="width: 25%;">Specimen No 3</th> </tr> </thead> <tbody> <tr> <td>37.5</td> <td>37.5</td> <td>37.6</td> </tr> <tr> <td>74.5</td> <td>74.5</td> <td>74.5</td> </tr> <tr> <td>80</td> <td>78</td> <td>66</td> </tr> <tr> <td>1.62</td> <td>1.60</td> <td>1.71</td> </tr> </tbody> </table> One end and radial boundary			Specimen No 1	Specimen No 2	Specimen No 3	37.5	37.5	37.6	74.5	74.5	74.5	80	78	66	1.62	1.60	1.71												
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Checked and Approved

Initials:

RJP

Date: 19/11/14

Project Number:

GEO / 21813

Project Name:

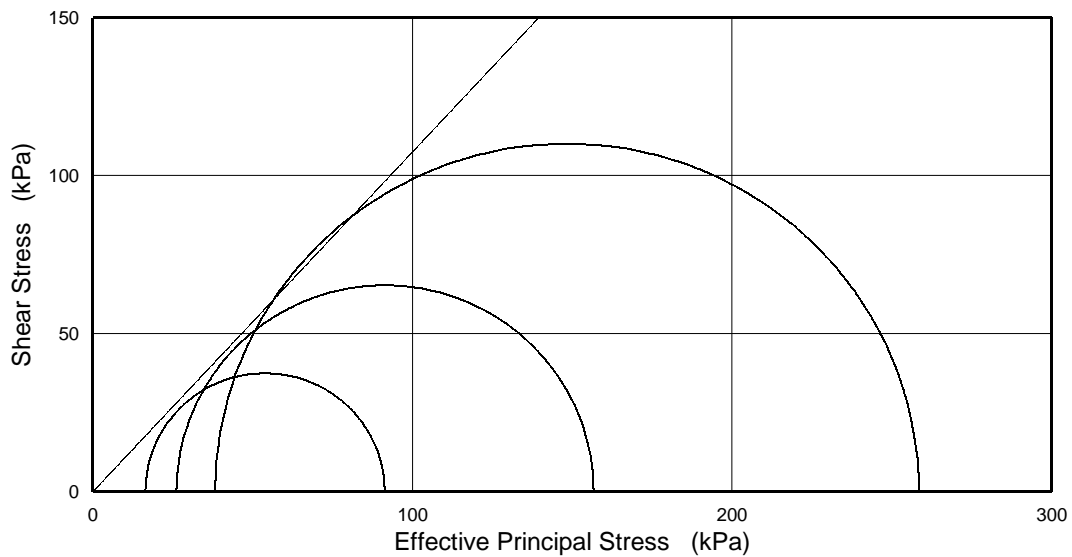
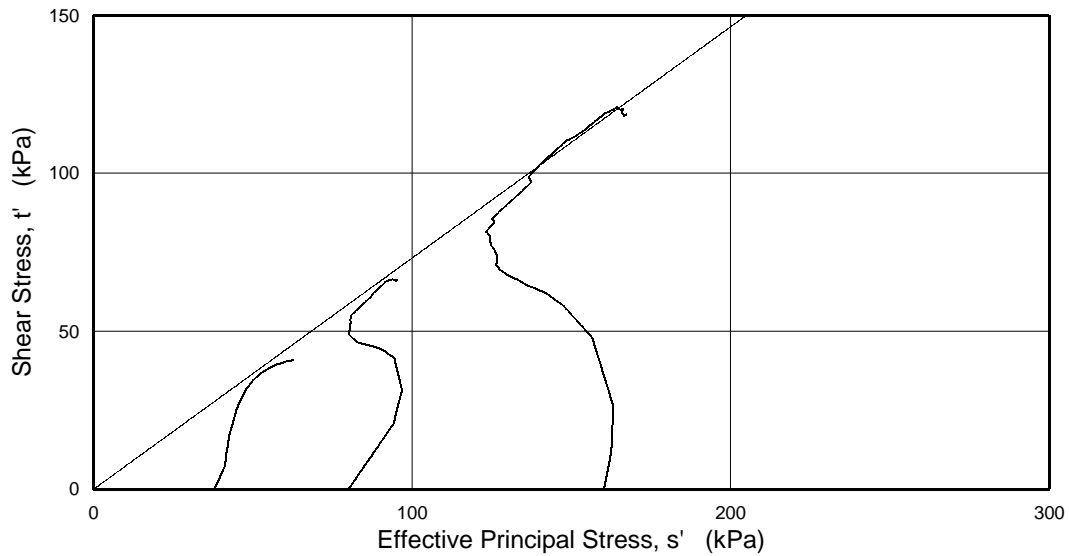
DELIMARA POWER STATION GEOTECHNICAL INVESTIGATION

Project Number J2094

BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
**with Measurement of Pore Pressure**

Borehole Number: G6  
 Sample Number: 3  
 Depth (m): 19.40

Description:  
 Soft grey sandy organic gravelly CLAY with roots.  
 Gravel is fine.



**Checked and  
Approved**

Initials:

*RJP*

Date: 19/11/14

Project Number:

**GEO / 21813**

Project Name:

**DELIMARA POWER STATION GEOTECHNICAL INVESTIGATION**

**Project Number J2094**

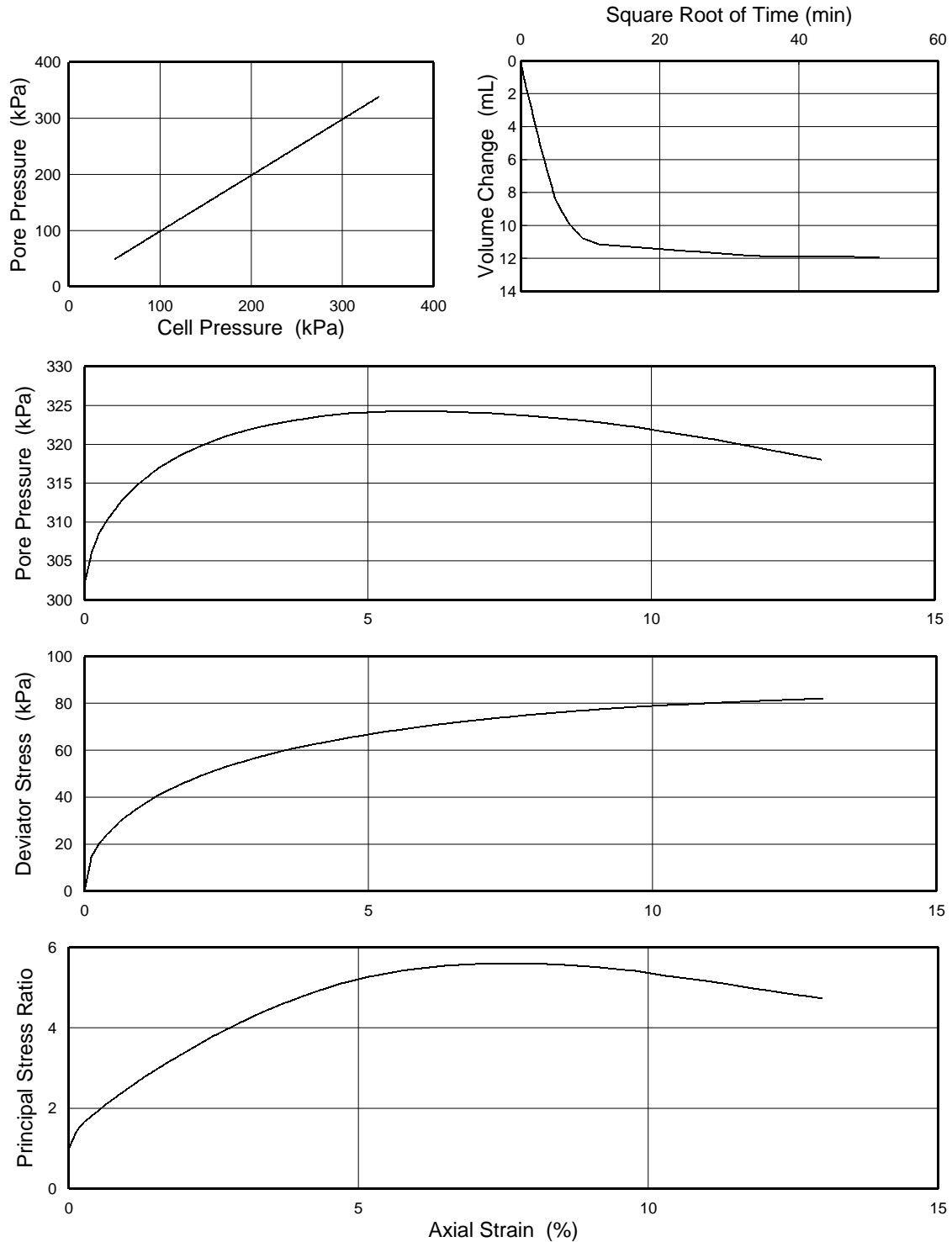


**GEOLABS**®

BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
 with Measurement of Pore Pressure

Borehole Number: G6  
 Sample Number: 3  
 Depth (m): 19.40

**Specimen No 1**



**Checked and Approved**

Initials:

*RJP*

Date: 19/11/14

Project Number:

**GEO / 21813**

Project Name:

**DELIMARA POWER STATION GEOTECHNICAL INVESTIGATION**

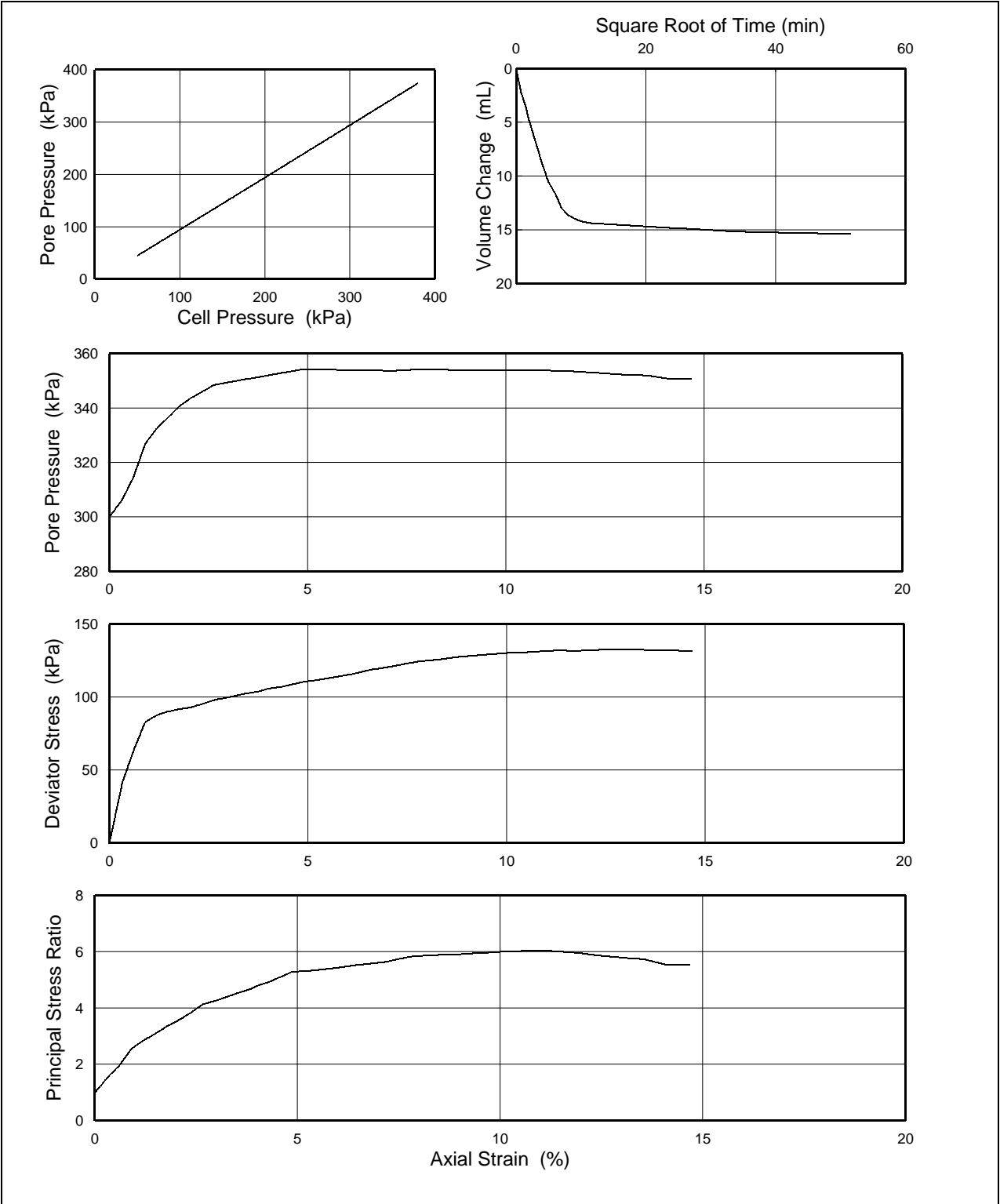
**Project Number J2094**



BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
 with Measurement of Pore Pressure

Borehole Number: G6  
 Sample Number: 3  
 Depth (m): 19.40

**Specimen No 2**



**Checked and Approved**

Initials:

*RJP*

Date: 19/11/14

Project Number:

**GEO / 21813**

Project Name:

**DELIMARA POWER STATION GEOTECHNICAL INVESTIGATION**

**Project Number J2094**

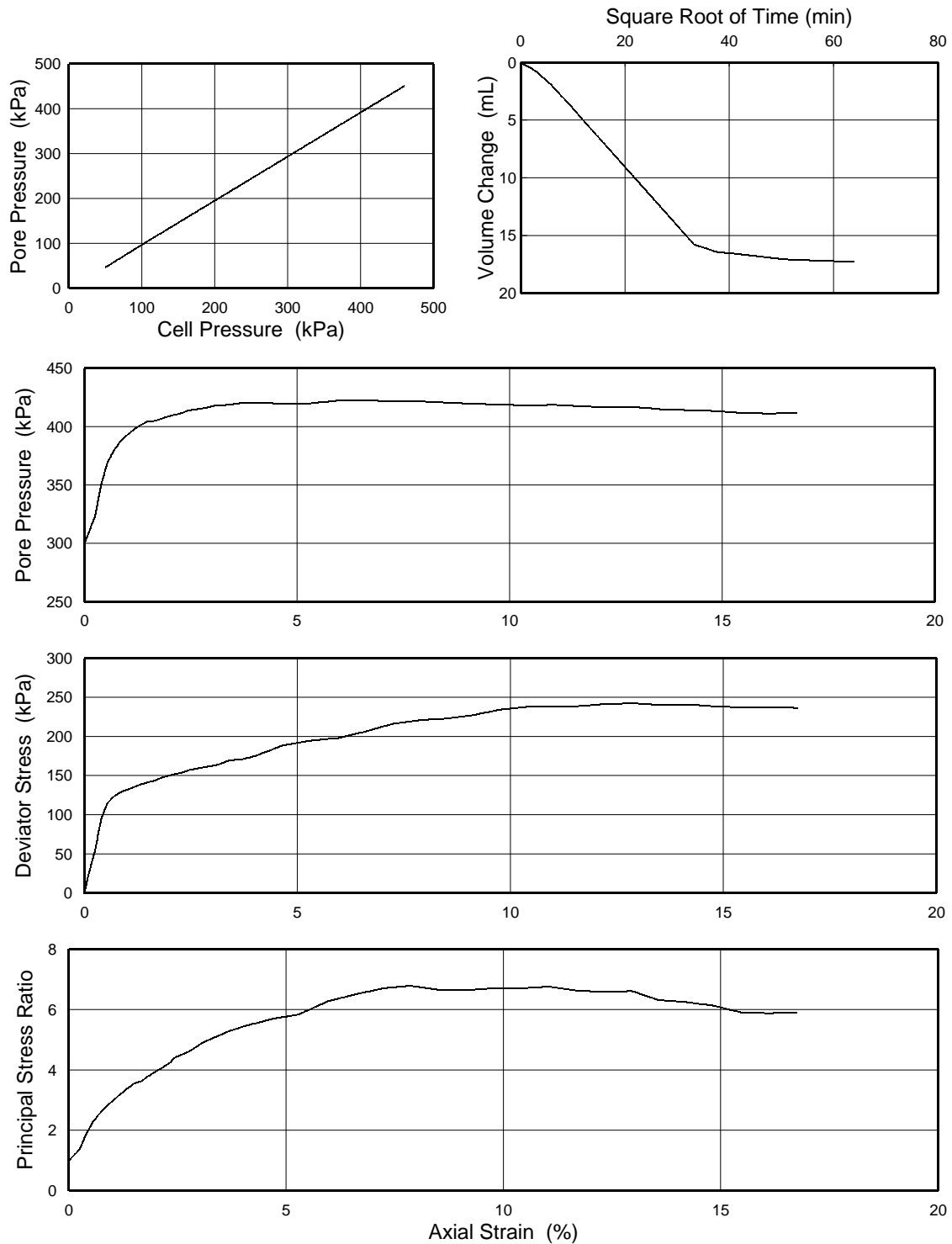




BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
 with Measurement of Pore Pressure

Borehole Number: G6  
 Sample Number: 3  
 Depth (m): 19.40

**Specimen No 3**



**Checked and Approved**

Initials:

*RJP*

Date: 19/11/14

Project Number:




**GEO / 21813**

Project Name:

**DELIMARA POWER STATION GEOTECHNICAL INVESTIGATION**

**Project Number J2094**



BS1377 : Part 8 : Clause 7 <b>Consolidated Undrained Triaxial Compression Test</b> <b>with Measurement of Pore Pressure</b>																															
Borehole Number: G7 Sample Number: Depth (m): 9.35 - 10.00		Description: Firm greyish brown sandy CLAY. Sand is fine to medium.																													
<b>SPECIMEN DETAILS</b> Depth within original sample Orientation within original sample		50 mm from top Vertical																													
<b>TEST DETAILS</b> Specimen Preparation Cell Preparation Specimen Number Initial Diameter mm Initial Length mm Initial Moisture Content % Initial Wet Density Mg/m <sup>3</sup> Drainage Conditions		Undisturbed Checks performed in accordance with Clause 3.5 <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th style="width: 25%;">Specimen No 1</th> <th style="width: 25%;">Specimen No 2</th> <th style="width: 25%;">Specimen No 3</th> </tr> </thead> <tbody> <tr> <td>37.4</td> <td>37.8</td> <td>38.0</td> </tr> <tr> <td>77.3</td> <td>76.4</td> <td>76.4</td> </tr> <tr> <td>34</td> <td>38</td> <td>40</td> </tr> <tr> <td>1.92</td> <td>1.81</td> <td>1.79</td> </tr> </tbody> </table> One end and radial boundary			Specimen No 1	Specimen No 2	Specimen No 3	37.4	37.8	38.0	77.3	76.4	76.4	34	38	40	1.92	1.81	1.79												
Specimen No 1	Specimen No 2	Specimen No 3																													
37.4	37.8	38.0																													
77.3	76.4	76.4																													
34	38	40																													
1.92	1.81	1.79																													
<b>SATURATION STAGE</b> Final Cell Pressure kPa Final Pore Pressure kPa Final Pore Pressure Parameter B Duration day(s)		<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>350</td> <td>400</td> <td>500</td> </tr> <tr> <td>348</td> <td>387</td> <td>492</td> </tr> <tr> <td>0.99</td> <td>0.98</td> <td>0.99</td> </tr> <tr> <td>2</td> <td>2</td> <td>2</td> </tr> </tbody> </table>			350	400	500	348	387	492	0.99	0.98	0.99	2	2	2															
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348	387	492																													
0.99	0.98	0.99																													
2	2	2																													
<b>CONSOLIDATION STAGE</b> Cell Pressure kPa Back Pressure kPa Effective Pressure kPa Final Pore Pressure kPa Final Pore Pressure Dissipation % Duration day(s)		<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>350</td> <td>400</td> <td>500</td> </tr> <tr> <td>300</td> <td>300</td> <td>300</td> </tr> <tr> <td>50</td> <td>100</td> <td>200</td> </tr> <tr> <td>300</td> <td>300</td> <td>300</td> </tr> <tr> <td>100</td> <td>100</td> <td>100</td> </tr> <tr> <td>1</td> <td>1</td> <td>1</td> </tr> </tbody> </table>			350	400	500	300	300	300	50	100	200	300	300	300	100	100	100	1	1	1									
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<b>SHEARING STAGE</b> Cell Pressure kPa Rate of Axial Displacement mm/min Initial Pore Pressure kPa Initial Effective Stress kPa		<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>350</td> <td>400</td> <td>500</td> </tr> <tr> <td>0.012</td> <td>0.012</td> <td>0.012</td> </tr> <tr> <td>300</td> <td>300</td> <td>300</td> </tr> <tr> <td>50</td> <td>100</td> <td>200</td> </tr> </tbody> </table>			350	400	500	0.012	0.012	0.012	300	300	300	50	100	200															
350	400	500																													
0.012	0.012	0.012																													
300	300	300																													
50	100	200																													
<b>CONDITIONS AT FAILURE</b> criteria		Maximum Principal Stress Ratio																													
Pore Pressure kPa Minor Effective Principal Stress kPa Deviator Stress kPa Major Effective Principal Stress kPa Effective Principal Stress Ratio Pore Pressure Parameter A Axial Strain % Correction applied to Deviator Stress kPa Duration day(s)		<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>326</td> <td>347</td> <td>433</td> </tr> <tr> <td>24</td> <td>53</td> <td>67</td> </tr> <tr> <td>107</td> <td>195</td> <td>235</td> </tr> <tr> <td>131</td> <td>248</td> <td>302</td> </tr> <tr> <td>5.45</td> <td>4.68</td> <td>4.50</td> </tr> <tr> <td>0.24</td> <td>0.24</td> <td>0.56</td> </tr> <tr> <td>3.4</td> <td>2.8</td> <td>5.3</td> </tr> <tr> <td>11</td> <td>11</td> <td>11</td> </tr> <tr> <td>1</td> <td>1</td> <td>1</td> </tr> </tbody> </table>			326	347	433	24	53	67	107	195	235	131	248	302	5.45	4.68	4.50	0.24	0.24	0.56	3.4	2.8	5.3	11	11	11	1	1	1
326	347	433																													
24	53	67																													
107	195	235																													
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5.45	4.68	4.50																													
0.24	0.24	0.56																													
3.4	2.8	5.3																													
11	11	11																													
1	1	1																													
Final Moisture Content % Final Wet Density Mg/m <sup>3</sup>		<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>29</td> <td>35</td> <td>35</td> </tr> <tr> <td>1.98</td> <td>1.85</td> <td>1.85</td> </tr> </tbody> </table>			29	35	35	1.98	1.85	1.85																					
29	35	35																													
1.98	1.85	1.85																													
<b>EFFECTIVE STRESS PARAMETERS</b> Cohesion kPa Angle of Shear Resistance degrees		<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>8</td> <td></td> <td></td> </tr> <tr> <td>37</td> <td></td> <td></td> </tr> </tbody> </table>			8			37																							
8																															
37																															
<b>FAILURE SKETCHES</b>		<div style="display: flex; justify-content: space-around; align-items: center;">    </div>																													

Checked and Approved


Initials: RJP

Date: 27/11/14

Project Number: GEO / 21936

Project Name: DELIMARA REGASIFICATION PLANT

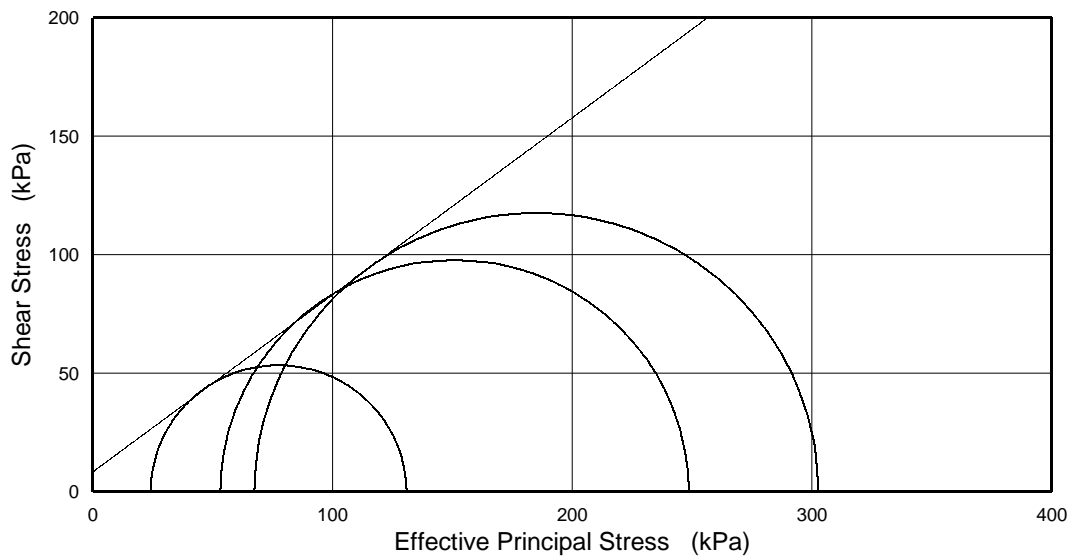
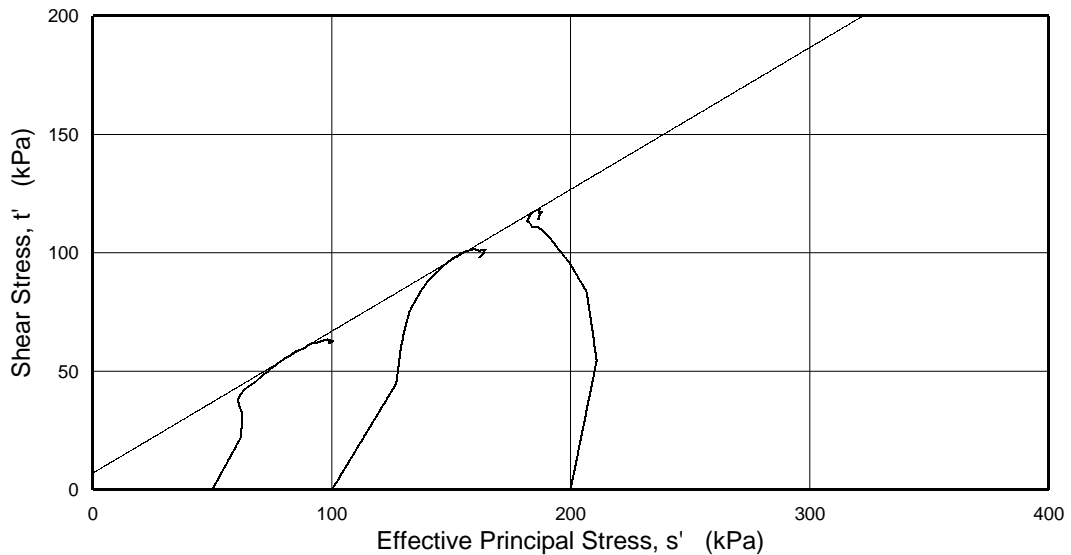
Project Number J2094



BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
 with Measurement of Pore Pressure

Borehole Number: G7  
 Sample Number:  
 Depth (m): 9.35 - 10.00

Description:  
 Firm greyish brown sandy CLAY.  
 Sand is fine to medium.



Checked and  
Approved

Initials:

*RJP*

Date: 27/11/14

Project Number:

**GEO / 21936**

Project Name:

**DELIMARA REGASIFICATION PLANT**  
**Project Number J2094**

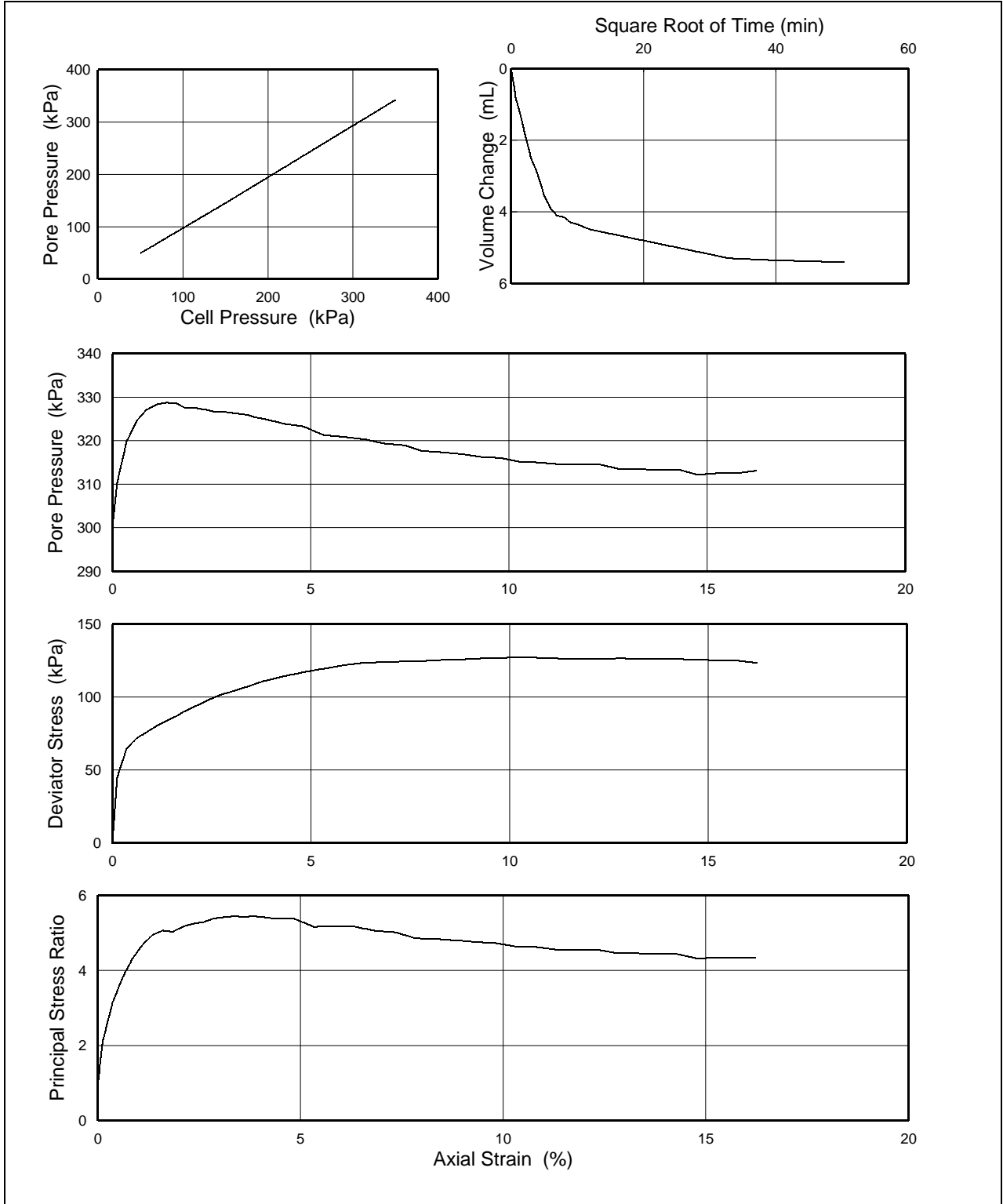


**GEOLABS**®

BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
 with Measurement of Pore Pressure

Borehole Number: G7  
 Sample Number:  
 Depth (m): 9.35 - 10.00

**Specimen No 1**



**Checked and Approved**

Initials:

*RJP*

Date: 27/11/14

Project Number:

**GEO / 21936**

Project Name:

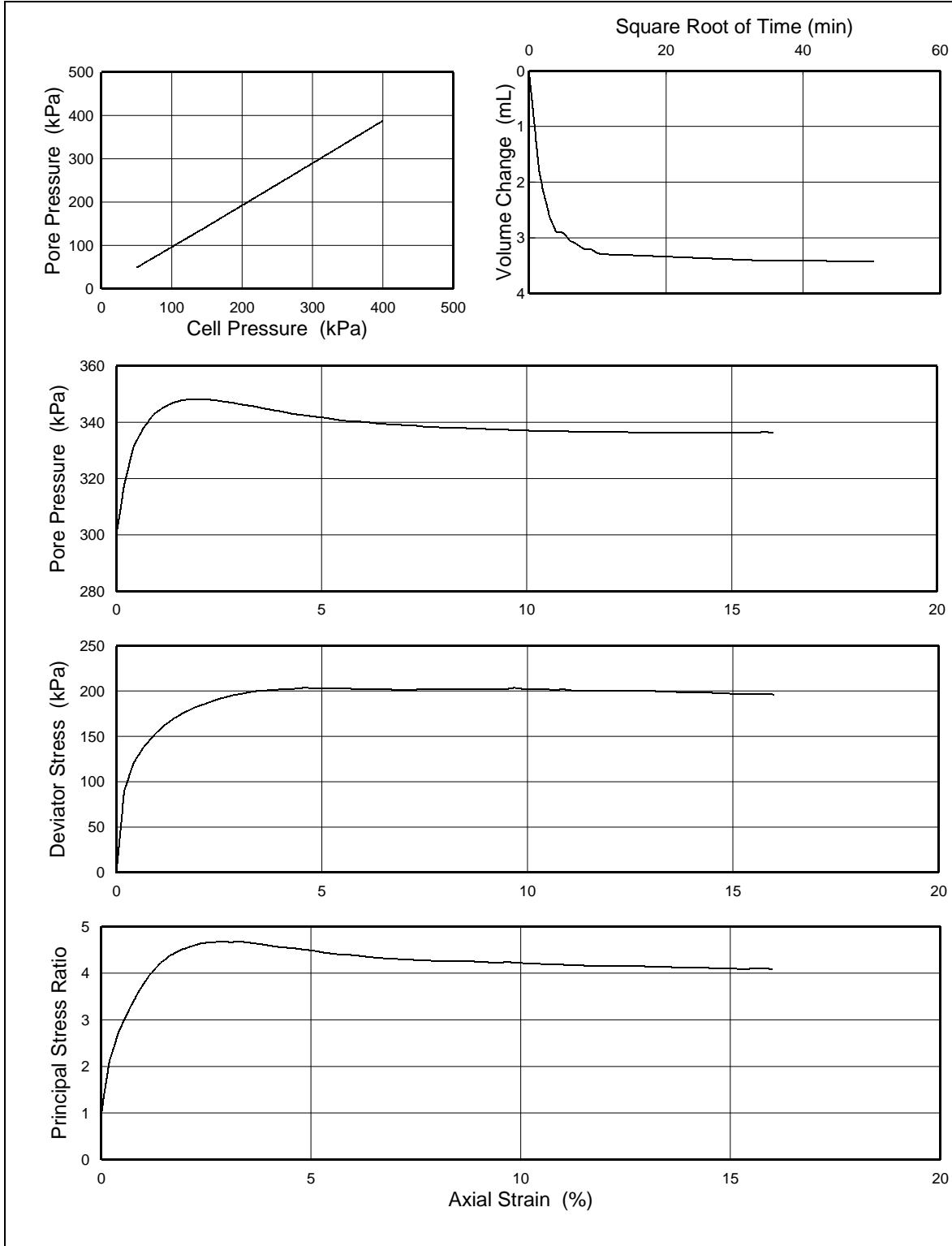
**DELIMARA REGASIFICATION PLANT**  
**Project Number J2094**



BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
 with Measurement of Pore Pressure

Borehole Number: G7  
 Sample Number:  
 Depth (m): 9.35 - 10.00

**Specimen No 2**



**Checked and Approved**

Initials:

*RJP*

Date: 27/11/14

Project Number:

**GEO / 21936**

Project Name:

**DELIMARA REGASIFICATION PLANT**

**Project Number J2094**

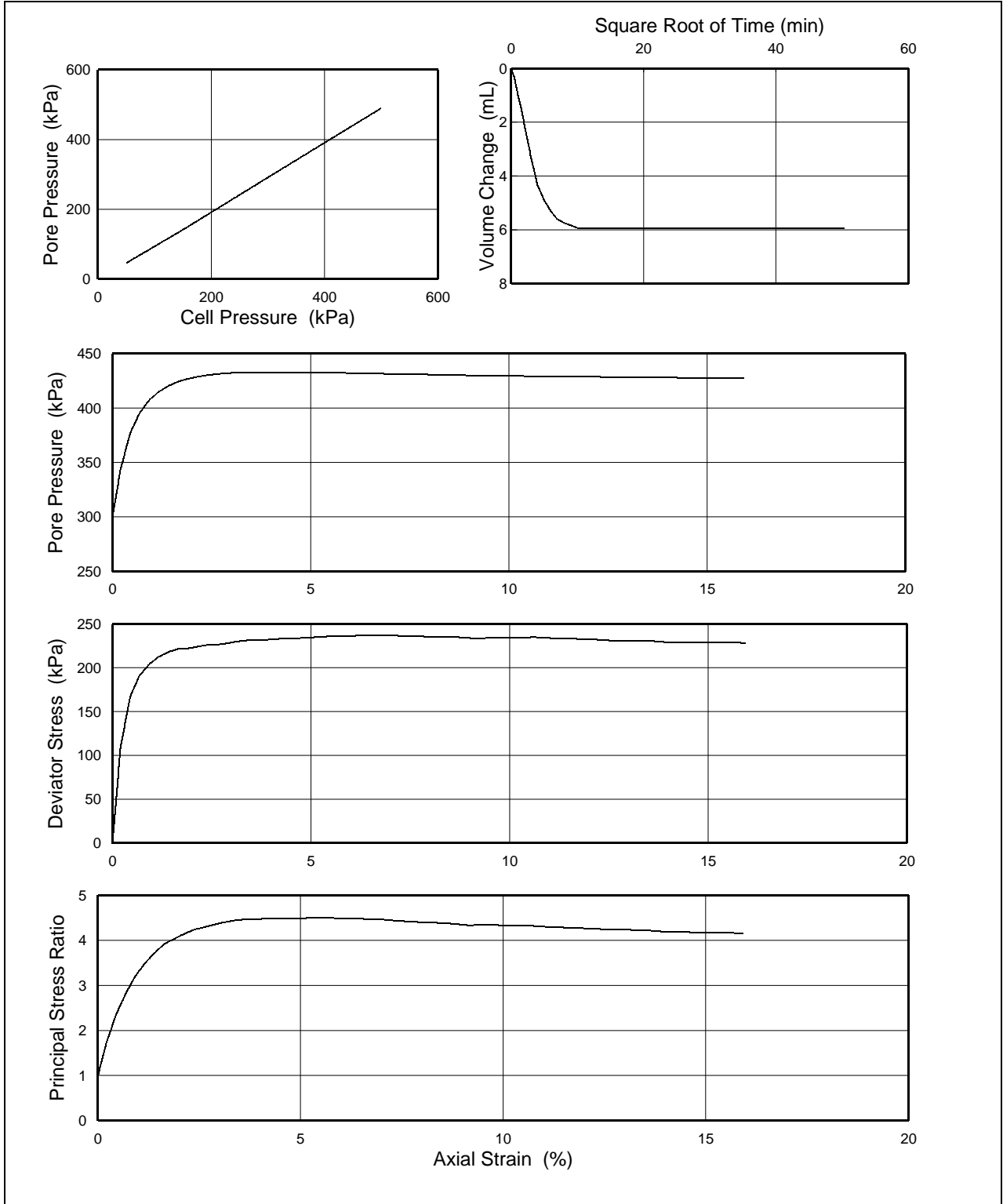


**GEOLABS**

BS1377 : Part 8 : Clause 7  
**Consolidated Undrained Triaxial Compression Test**  
 with Measurement of Pore Pressure

Borehole Number: G7  
 Sample Number:  
 Depth (m): 9.35 - 10.00

**Specimen No 3**



**Checked and Approved**

Initials:

*RJP*

Date: 27/11/14

Project Number:

**GEO / 21936**

Project Name:

**DELIMARA REGASIFICATION PLANT**

**Project Number J2094**



# Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure ( BS1377 : Part 8 : 1990 )

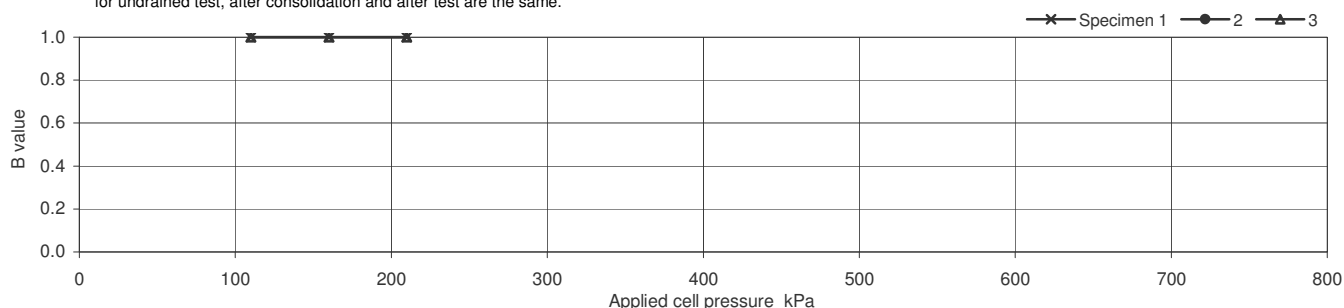
Project No	N4263-14	Sample Details:	Hole No	G8
Project Name	Dellimana		Depth (m BGL)	10.90 - 11.50
			No	4
			ID	
			Spec Ref	

Specimen Details		1	2	3
Initial	Length mm	113.46		139.66
	Diameter mm	70.25		70.34
	Bulk Density Mg/m³	1.81		1.78
	Water Content %	39		38
	Dry density Mg/m³	1.30		1.29
After consolidation	Length mm	111.02		134.57
	Diameter mm	68.73		67.72
	Bulk Density* Mg/m³	1.87		1.89
	Water Content* %	34		32
	Dry density* Mg/m³	1.39		1.44

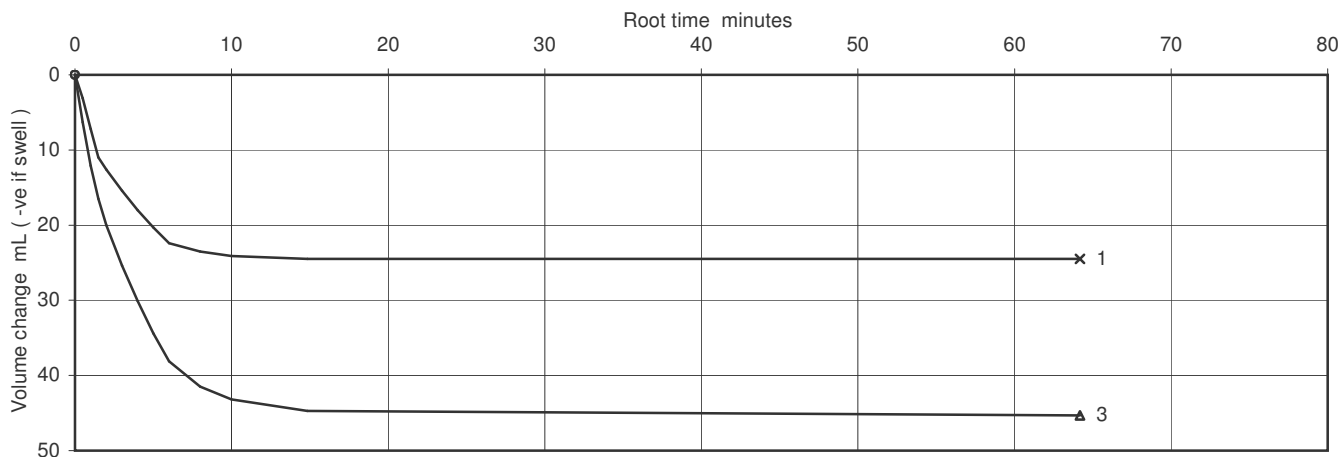
Soil Description	Soft to firm grey slightly sandy slightly gravelly CLAY
Specimen Type /Preparation	UNDISTURBED

Saturation Details		Method of Saturation		
		Increments of cell pressure only		
Cell pressure increments	kPa	50		
Differential Pressure	kPa			
Final Cell Pressure	kPa	210		
Final pore water pressure	kPa	208		
Final B Value		1.00		

\* for undrained test, after consolidation and after test are the same.



Consolidation Details		Drainage Conditions			
		From radial boundary and one end			
	Specimen No.	1	2	3	
	Cell Pressure applied	350		520	kPa
	Back Pressure applied	300		300	kPa
	Effective Pressure	50		220	kPa
	Pore pressure at start of consolidation	352		523	kPa
	Pore pressure at end of consolidation	301		300	kPa
	Pore pressure dissipation at end of consolidation	98		100	%
Consolidation parameters ( see note to BS1377 : pt 8, clause 6.3.4 )	Coefficient of Consolidation	C <sub>vi</sub>	11.88	3.72	m²/year
	Coefficient of Compressibility	M <sub>vi</sub>	1.10	0.38	m²/MN
	Coefficient of Permeability ( calculated )	k <sub>vi</sub>	4.1E-09	4.4E-10	m/s



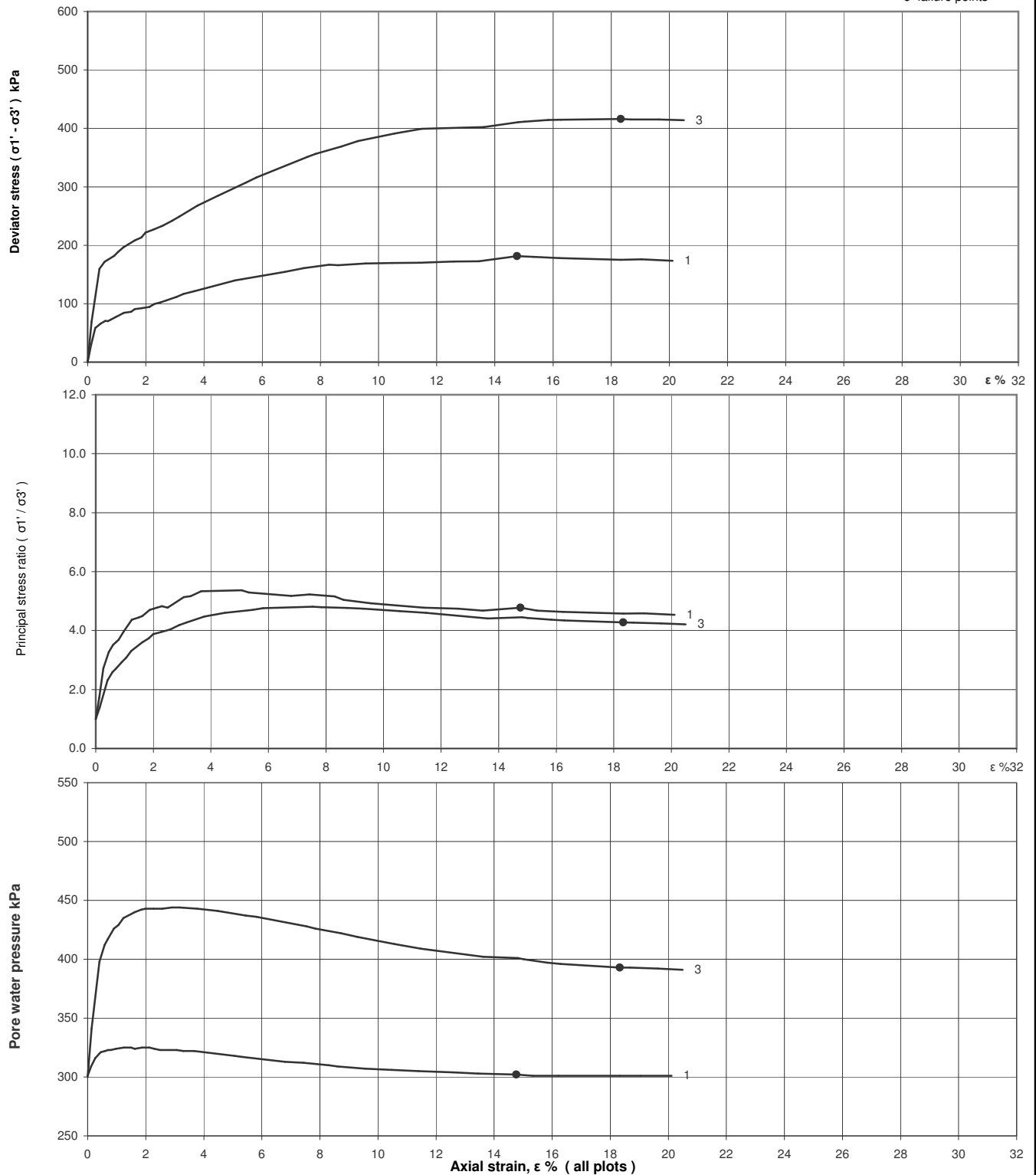
Ref	SLR8.1 Rev 85 May 09	ESG Environmental Scientifics Group	UKAS TESTING 1157	Printed:22/10/2014 15:21	Figure <b>CU</b> sheet 1 of 3
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# **Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure ( BS1377 : Part 8 : 1990 )**

Project No	N4263-14	Sample Details:	Hole No	G8
Project Name	Dellimana		Depth (m BGL)	10.90 - 11.50
			No	4
			Type	
			ID	
			Spec Ref	

## **Shearing stages - graphical data**

o failure points

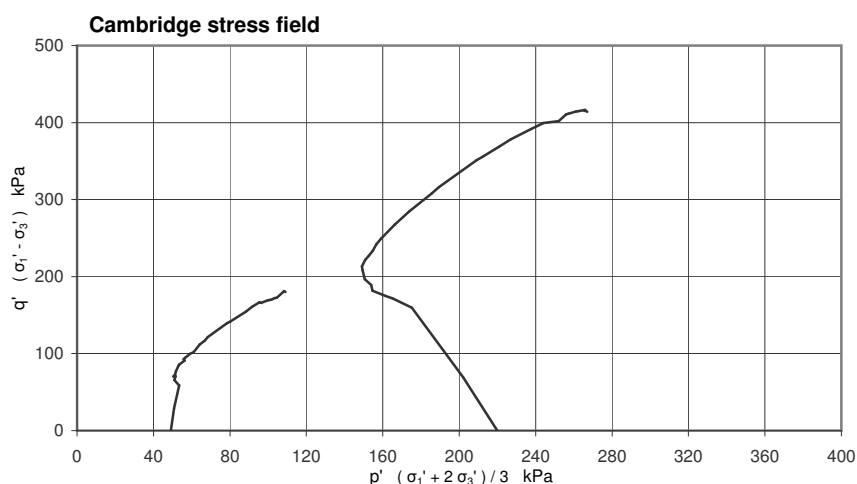
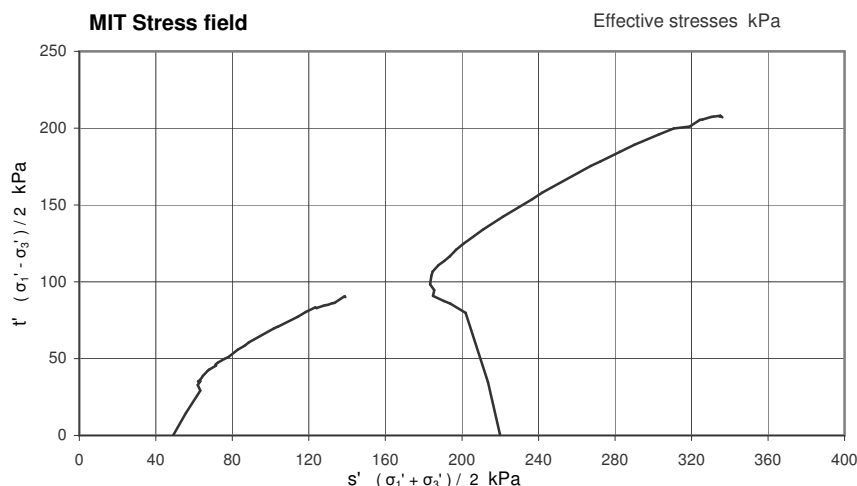
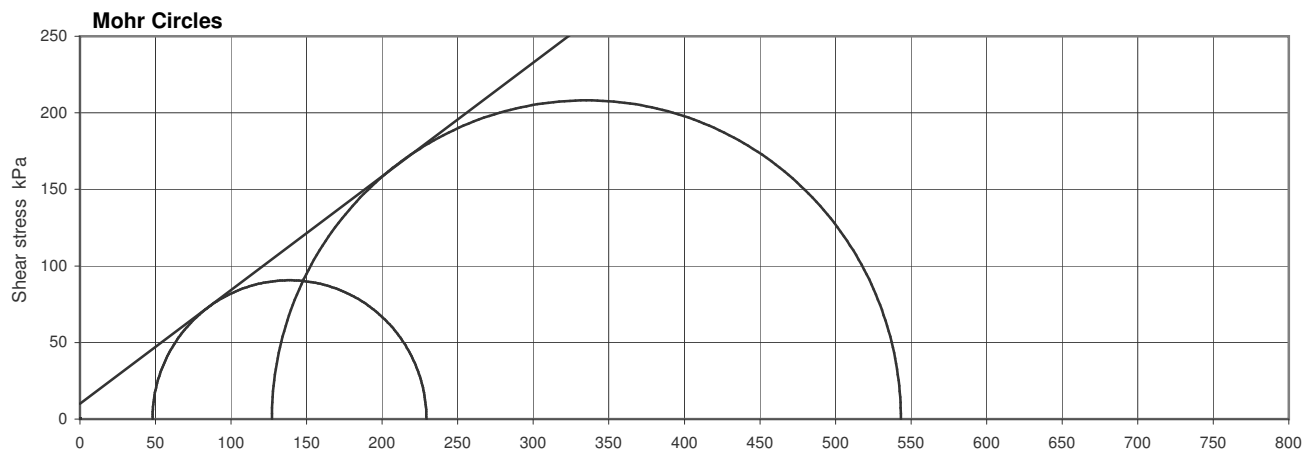


Ref	ESG	UKAS TESTING	Printed:22/10/2014 15:21	Figure
SLR8.1 Rev 85 May 09	Environmental Scientifics Group	1157		CU sheet 2 of 3



# **Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure** ( BS1377 : Part 8 : 1990 )

Project No	N4263-14	Sample Details:	Hole No	G8
Project Name	Dellimana		Depth (m BGL)	10.90 - 11.50
			No	4
			ID	
			Spec Ref	
			Type	



## **Compression stages**

Specimen	1	2	3	
Cell pressure	350		520	kPa
Initial pwp	301		300	kPa
Initial $\sigma_3'$	49		220	kPa
Rate of strain	2.00		2.00	%/hr

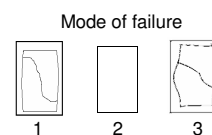
## **Failure conditions**

Criterion	Maximum deviator stress			
Axial strain	14.76		18.33	%
$(\sigma_1' / \sigma_3')_f$	4.777		4.278	
$(\sigma_1' - \sigma_3')_f$	181.3		416.3	kPa
$u_f$	302		393	kPa
$\sigma_3'_f$	48		127	kPa
$\sigma_1'_f$	229		543	kPa
$A_f$	0.01		0.22	
Time to failure	7.4		9.2	hrs

## **Shear Strength Parameters**

		Linear regression
$c'$	kPa	( 0.0 )
$\phi'$	degrees	( 40.8 )
		Manual re-assessment
$c'$	kPa	10
$\phi'$	degrees	36.6

Notes : Deviator stresses corrected for area change, vertical side drains and 0.4 mm thick rubber membrane(s)  
Shear strength parameters manually interpreted as best fit line as there is no third point to perform a true regression.



Ref SLR8.1 Rev 85 May 09	<b>ESG</b> Environmental Scientifics Group		Printed:22/10/2014 15:21	Figure <b>CU</b> sheet 3 of 3
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# Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure ( BS1377 : Part 8 : 1990 )

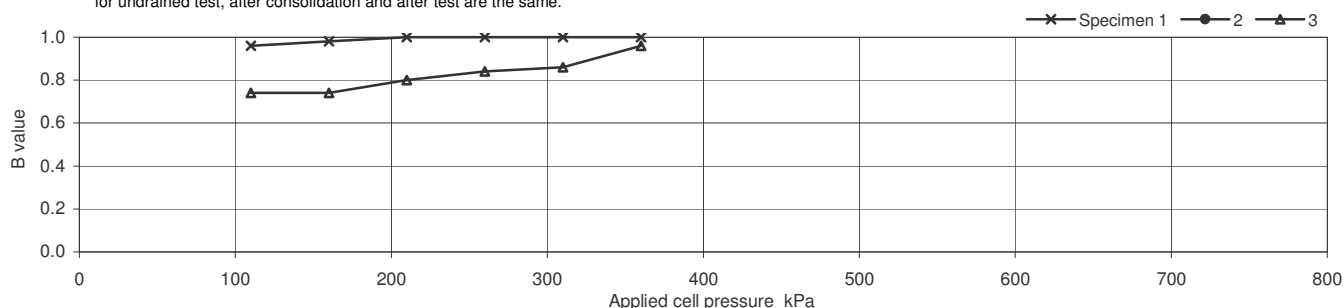
Project No	N4263-14	Sample Details:	Hole No	G10
Project Name	Dellimana		Depth (m BGL)	3.30-4.30
			No	1
			ID	
			Spec Ref	

Specimen Details		1	2	3
Initial	Length mm	142.09		141.07
	Diameter mm	72.51		71.78
	Bulk Density Mg/m³	1.95		1.86
	Water Content %	30		31
	Dry density Mg/m³	1.50		1.42
After consolidation	Length mm	139.45		139.58
	Diameter mm	71.15		71.02
	Bulk Density* Mg/m³	2.00		1.91
	Water Content* %	26		31
	Dry density* Mg/m³	1.58		1.46

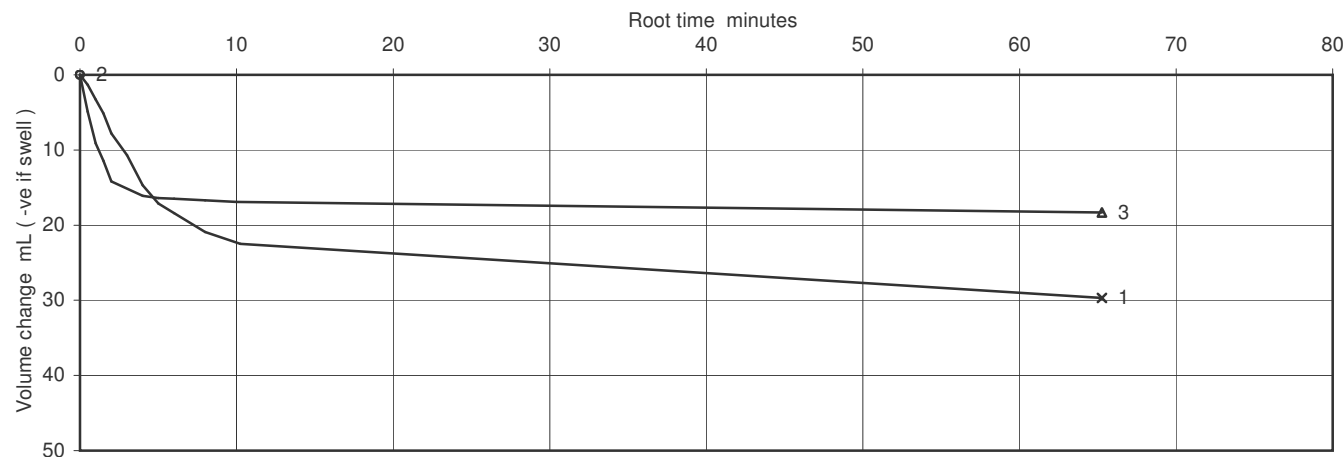
Soil Description	SPEC 1 - Greyish brown very silty SAND. SPEC 2 - Soft greyish brown sandy CLAY.
Specimen Type /Preparation	UNDISTURBED

Saturation Details		Method of Saturation		
		Increments of cell pressure only		
Cell pressure increments	kPa	50		50
Differential Pressure	kPa			10
Final Cell Pressure	kPa	360		360
Final pore water pressure	kPa	356		346
Final B Value		1.00		0.96

\* for undrained test, after consolidation and after test are the same.



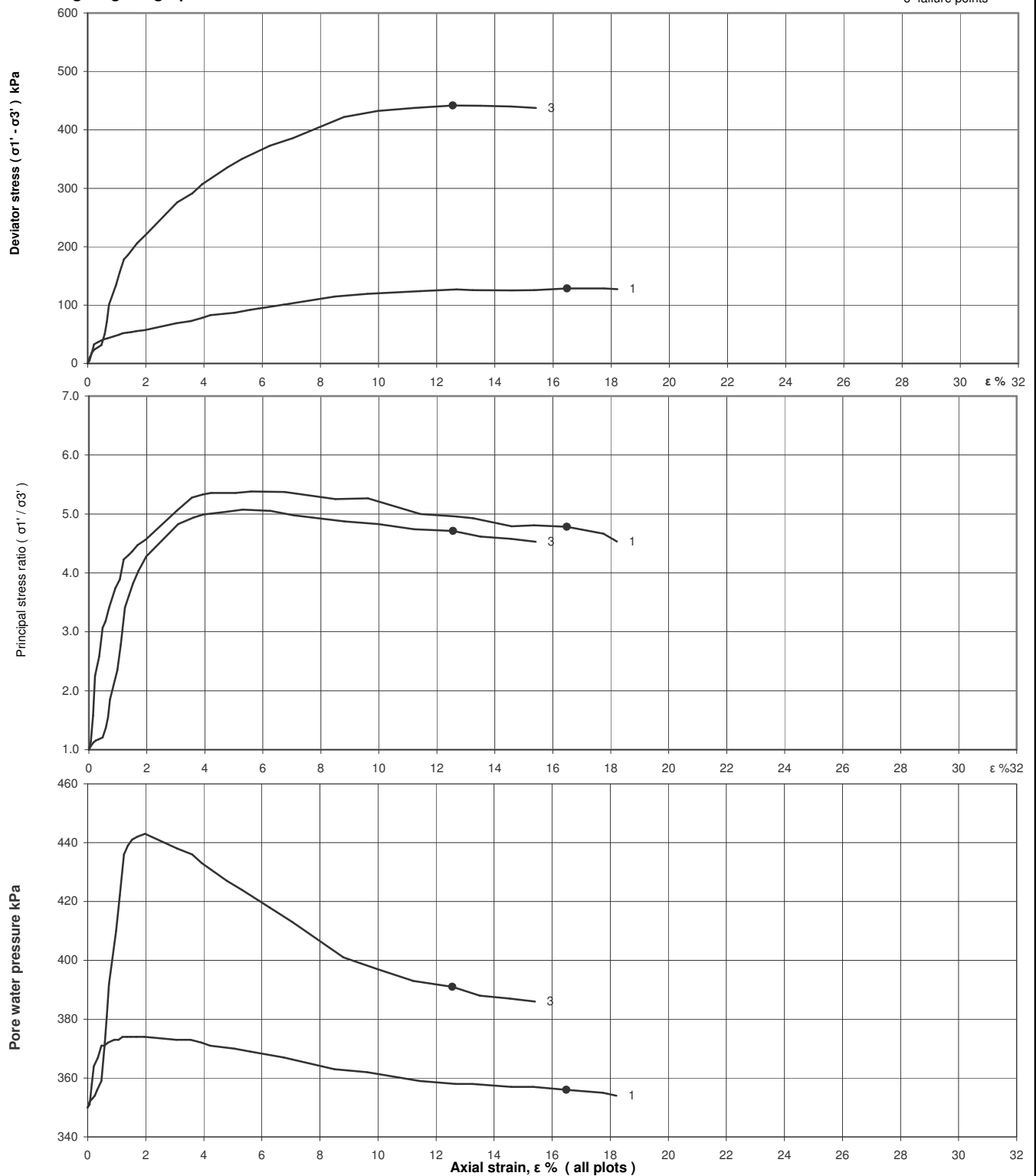
Consolidation Details		From radial boundary and one end			
	Drainage Conditions				
	Specimen No.	1	2	3	
	Cell Pressure applied	390		510	kPa
	Back Pressure applied	350		350	kPa
	Effective Pressure	40	80	160	kPa
	Pore pressure at start of consolidation	387		491	kPa
	Pore pressure at end of consolidation	350		350	kPa
	Pore pressure dissipation at end of consolidation	100		100	%
Consolidation parameters ( see note to BS1377 : pt 8, clause 6.3.4 )	Coefficient of Consolidation	C <sub>vi</sub>	0.44	18.91	m²/year
	Coefficient of Compressibility	M <sub>vi</sub>	1.38	0.23	m²/MN
	Coefficient of Permeability ( calculated )	k <sub>vi</sub>	1.9E-10	1.3E-09	m/s



**Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure  
( BS1377 : Part 8 : 1990 )**

Project No	N4263-14	Sample Details:	Hole No	G10
Project Name	Dellimana		Depth (m BGL)	3.30-4.30
			No	1
			ID	
			Spec Ref	

**Shearing stages - graphical data**



Ref

SLR8.1  
Rev 85  
May 09



Printed:07/11/2014 11:53

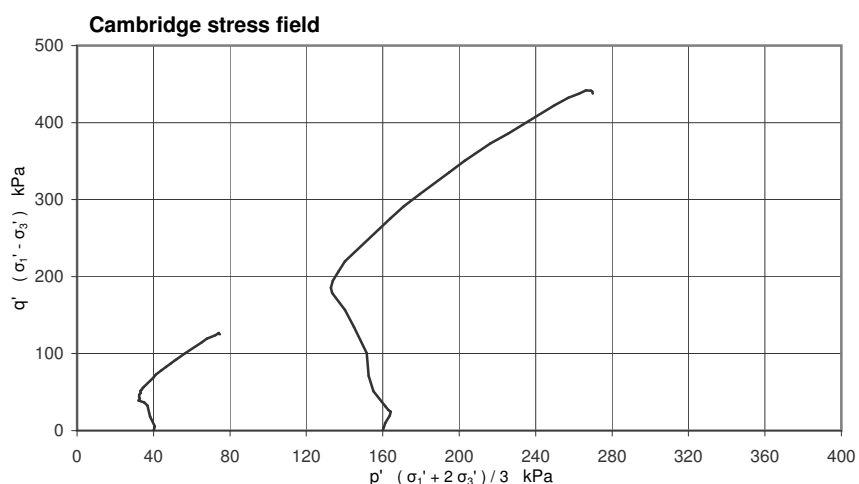
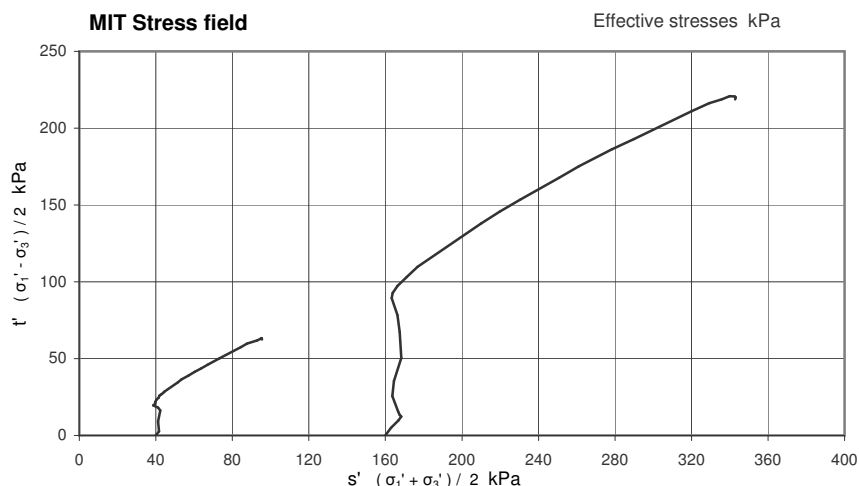
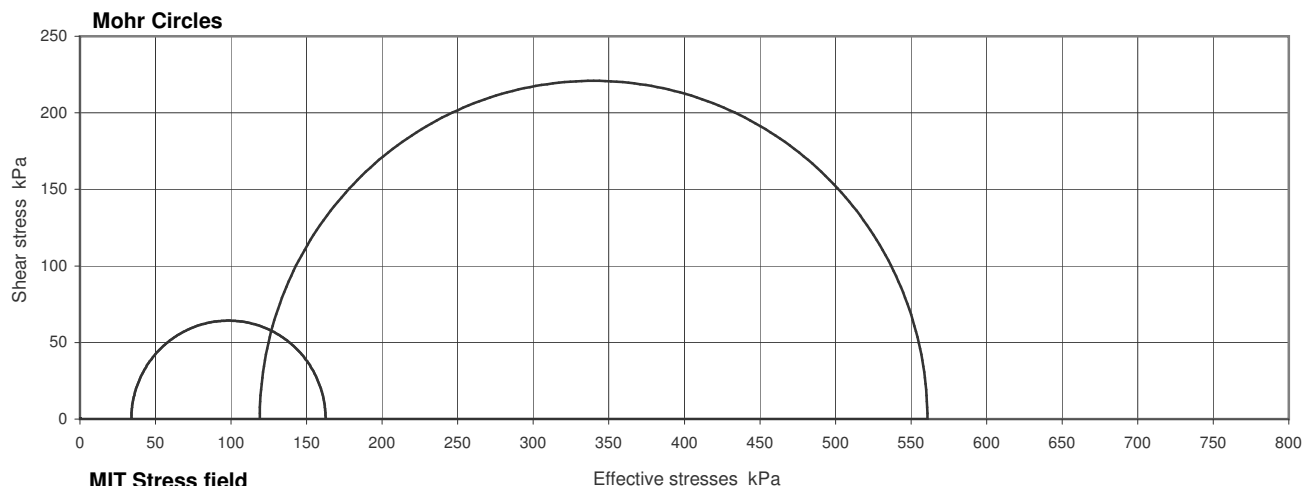
Figure

**CU**

sheet 2 of 3

# Consolidated Undrained Triaxial Compression test with Measurement of Pore Water Pressure ( BS1377 : Part 8 : 1990 )

Project No	N4263-14	Sample Details:	Hole No	G10
Project Name	Dellimana		Depth (m BGL)	3.30-4.30
			No	1
			ID	
			Spec Ref	
			Type	



## Compression stages

Specimen	1	2	3	
Cell pressure	390		510	kPa
Initial pwp	350		350	kPa
Initial $\sigma_3'$	40		160	kPa
Rate of strain	1.33		1.33	%/hr

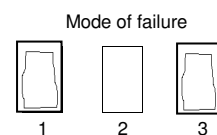
## Failure conditions

Criterion	Maximum deviator stress			
Axial strain	16.49		12.56	%
$(\sigma_1' / \sigma_3')_f$	4.782		4.713	
$(\sigma_1' - \sigma_3')_f$	128.6		441.8	kPa
$u_f$	356		391	kPa
$\sigma_3'_f$	34		119	kPa
$\sigma_1'_f$	163		561	kPa
$A_f$	0.05		0.09	
Time to failure	12.4		9.4	hrs

## Shear Strength Parameters

		Linear regression
$c'$	kPa	not assessed
$\phi'$	degrees	not assessed
		Manual re-assessment
$c'$	kPa	-
$\phi'$	degrees	-

Notes : Deviator stresses corrected for area change, vertical side drains and 0.276 mm thick rubber membrane(s)  
Unable to perform true linear regression hence no shear strength parameters due to only two specimens,  
and specimens also differ so could not be judged as a set.



Ref SLR8.1 Rev 85 May 09	ESG Environmental Scientifics Group	UKAS TESTING 1157	Printed:07/11/2014 11:53	Figure <b>CU</b> sheet 3 of 3
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## Laboratory Test Certificate

### Determination of Undrained Triaxial Compression to BS 1377: Part 7:1990 Clause 8

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR239
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	20/10/2014
Attn:	Sfakianakis Costantinos			Client/Job Nº:	J2094
Client Tel Nº:	3.06972E+11			Test Reference No:	TRI027
				Tested by:	CM
				Date of test:	20/10/2014

#### Test Information

Sample Ref No: 140930 - Clay  
Sampling Location: BH G1  
Sample Depth: Sample 2  
Date of sampling: 30/9/2014  
Type of Material: Grey Silty Soil

#### Equipment Information

Membrane thickness: 0.3  
Load device No: 8750  
Load device calibration: 0.0171703  
Strain Device No: 1  
Strain Device Calibration mm/rev: 1  
Rate of deformation: 1

#### Specimen details

#### Specimen 1

Height of Specimen: mm **76**  
Diameter of Specimen: mm **38.1**  
Mass of specimen: g **176.11**  
Volume: ml **86.65**  
Bulk Density - Wet: Mg/m<sup>3</sup> **2.033**  
Moisture Content: % **22.42**  
Cell pressure: kPa **50**

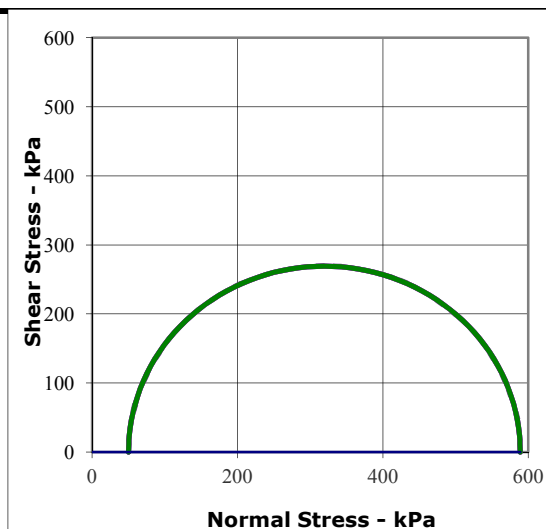
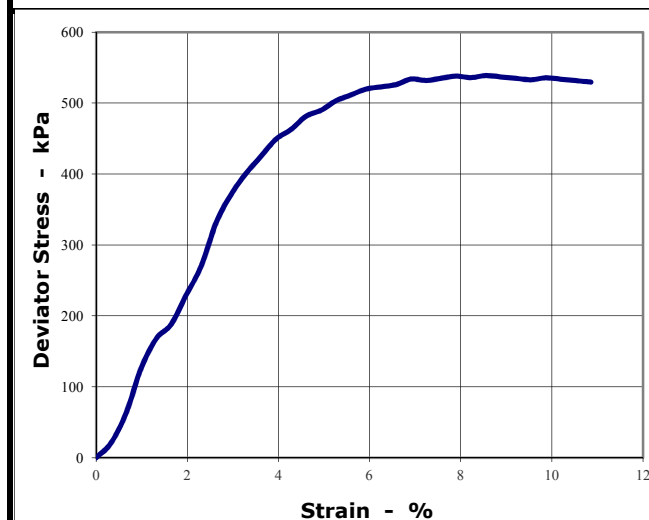
#### Single Stage

#### Shear Strength Parameters

C - kPa  
Phi - °

#### Test details

Membrane correction: kPa **1.58**  
Rate of Axial displacement: %/mm **1.32**  
Strain at Failure: % **8.55**  
Maximum deviator stress: kPa **539**  
Shear strength: kPa **269**  
Mode of failure: Intermediate



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Lab Manager

# TEST CERTIFICATE

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## Laboratory Test Certificate

### Determination of Undrained Triaxial Compression to BS 1377: Part 7:1990 Clause 8

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR240
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	20/10/2014
Attn:	Sfakianakis Costantinos			Client/Job Nº:	J2094
Client Tel Nº:	3.06972E+11			Test Reference No:	TRI028
				Tested by:	CM
				Date of test:	20/10/2014

#### Test Information

Sample Ref No: 140930 - Clay  
Sampling Location: BH G1  
Sample Depth: Sample 8  
Date of sampling: 30/9/2014  
Type of Material: Soft Brown Silty Clay

#### Equipment Information

Membrane thickness: 0.3  
Load device No: 8750  
Load device calibration: 0.0171703  
Strain Device No: 1  
Strain Device Calibration mm/rev: 1  
Rate of deformation: 1

#### Specimen details

Specimen 1  
Height of Specimen: mm **77**  
Diameter of Specimen: mm **37.15**  
Mass of specimen: g **170.761**  
Volume: ml **83.46**  
Bulk Density - Wet: Mg/m<sup>3</sup> **2.046**  
Moisture Content: % **30.70**  
Cell pressure: kPa **120**

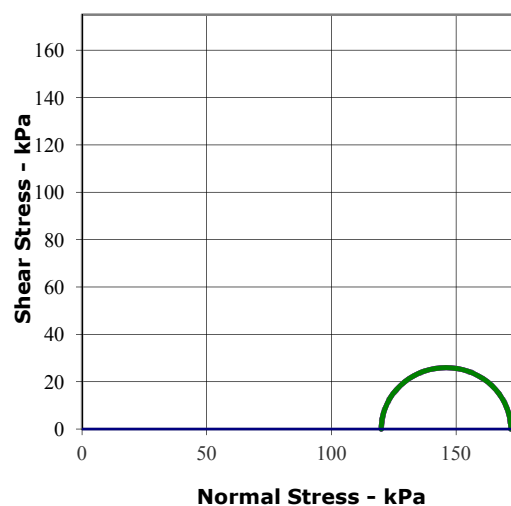
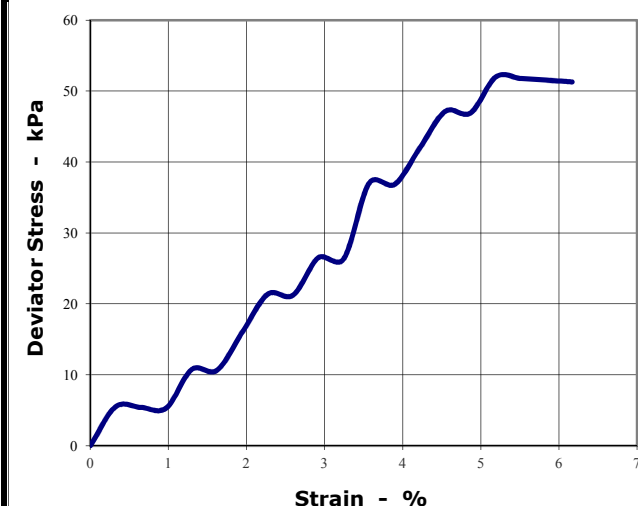
#### Single Stage

#### Shear Strength Parameters

C - kPa  
Phi - °

#### Test details

Membrane correction: kPa **1.08**  
Rate of Axial displacement: %/mm **1.30**  
Strain at Failure: % **5.19**  
Maximum deviator stress: kPa **52**  
Shear strength: kPa **26**  
Mode of failure: Intermediate



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Lab Manager

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## Laboratory Test Certificate

### Determination of Undrained Triaxial Compression to BS 1377: Part 7:1990 Clause 8

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate No:	TCR241
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	20/10/2014
Attn:	Sfakianakis Costantinos			Client/Job No:	J2094
Client Tel No:	3.06972E+11			Test Reference No:	TRI029
				Tested by:	CM
				Date of test:	20/10/2014

#### Test Information

Sample Ref No: 140930 - Clay  
Sampling Location: BH G1  
Sample Depth: Sample 10  
Date of sampling: 30/9/2014  
Type of Material: Soft Brown Silty Clay

#### Equipment Information

Membrane thickness: 0.3  
Load device No: 8750  
Load device calibration: 0.0171703  
Strain Device No: 1  
Strain Device Calibration mm/rev: 1  
Rate of deformation: 1

#### Specimen details

Specimen 1  
Height of Specimen: mm **76.13**  
Diameter of Specimen: mm **39.7**  
Mass of specimen: g **176.05**  
Volume: ml **94.24**  
Bulk Density - Wet: Mg/m<sup>3</sup> **1.868**  
Moisture Content: % **25.54**  
Cell pressure: kPa **160**

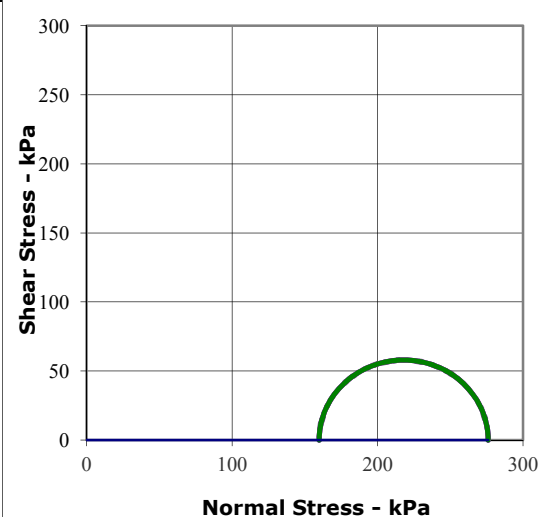
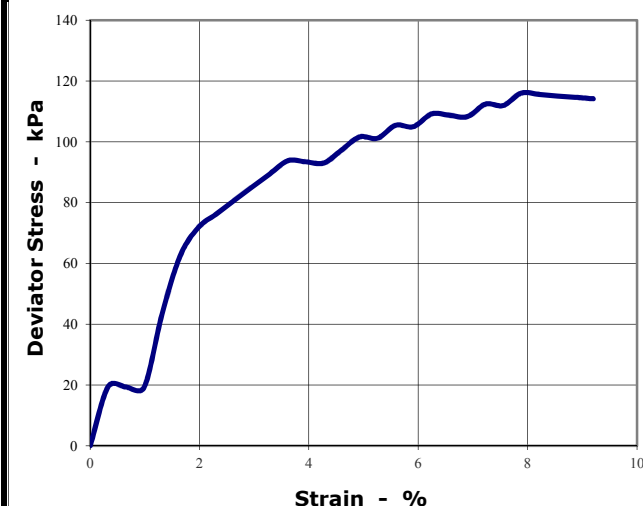
#### Single Stage

#### Shear Strength Parameters

C - kPa  
Phi - °

#### Test details

Membrane correction: kPa **1.42**  
Rate of Axial displacement: %/mm **1.31**  
Strain at Failure: % **7.88**  
Maximum deviator stress: kPa **116**  
Shear strength: kPa **58**  
Mode of failure: Intermediate



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

#### Approved By:

*Chris Magro*

Chris Magro  
Lab Manager

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E: info@terracoiremalta.com W: www.terracoiremalta.com

Registration No.: C32227

Alfred Xerri

## Laboratory Test Certificate

### Determination of Undrained Triaxial Compression to BS 1377: Part 7:1990 Clause 8

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR242
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	20/10/2014
Attn:	Sfakianakis Costantinos			Client/Job Nº:	J2094
Client Tel Nº:	3.06972E+11			Test Reference No:	TRI030
				Tested by:	CM
				Date of test:	20/10/2014

#### Test Information

Sample Ref No: 140930 - Clay  
Sampling Location: BH G1  
Sample Depth: Sample 15  
Date of sampling: 30/9/2014  
Type of Material: Soft Brown Silty Clay

#### Equipment Information

Membrane thickness: 0.3  
Load device No: 8750  
Load device calibration: 0.0171703  
Strain Device No: 1  
Strain Device Calibration mm/rev: 1  
Rate of deformation: 1

#### Specimen details

Height of Specimen: mm **74.71**  
Diameter of Specimen: mm **37.99**  
Mass of specimen: g **179.382**  
Volume: ml **84.69**  
Bulk Density - Wet: Mg/m<sup>3</sup> **2.118**  
Moisture Content: % **23.08**  
Cell pressure: kPa **230**

#### Specimen 1

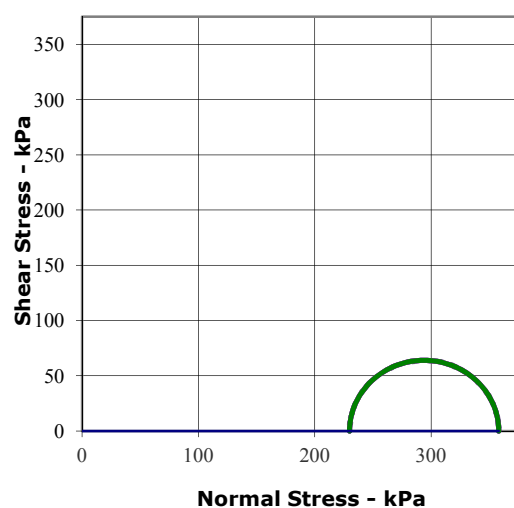
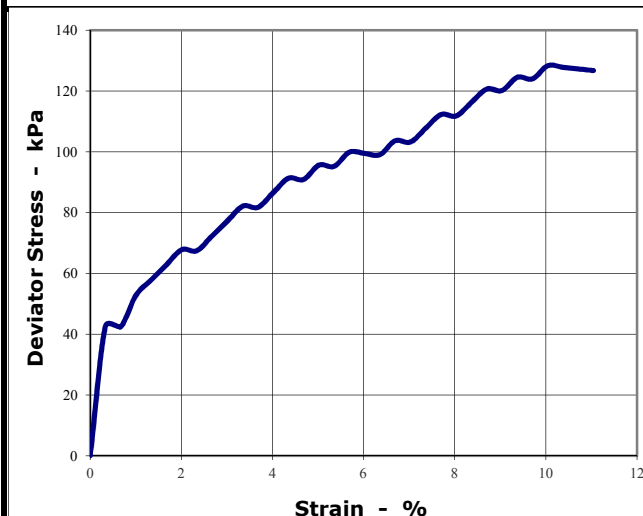
#### Single Stage

#### Shear Strength Parameters

C - kPa  
Phi - °

#### Test details

Membrane correction: kPa **1.79**  
Rate of Axial displacement: %/mm **1.34**  
Strain at Failure: % **10.04**  
Maximum deviator stress: kPa **128**  
Shear strength: kPa **64**  
Mode of failure: Intermediate



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Lab Manager

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### Determination of Undrained Triaxial Compression to BS 1377: Part 7:1990 Clause 8

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR296
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	22/10/2014
Attn:	Sfakianakis Costantinos			Client/Job Nº:	J2094
Client Tel Nº:	3.06972E+11			Test Reference No:	TRI031
				Tested by:	CM
				Date of test:	21/10/2014

#### Test Information

Sample Ref No: 141001 - Clay  
Sampling Location: BH G2  
Sample Depth: Sample 2  
Date of sampling: 10/01/2014  
Type of Material: Loose Grey Silty Soil

#### Equipment Information

Membrane thickness: 0.3  
Load device No: 8750  
Load device calibration: 0.0171703  
Strain Device No: 1  
Strain Device Calibration mm/rev: 1  
Rate of deformation: 1

#### Specimen details

Specimen 1  
Height of Specimen: mm **70**  
Diameter of Specimen: mm **38.25**  
Mass of specimen: g **176.671**  
Volume: ml **80.44**  
Bulk Density - Wet: Mg/m<sup>3</sup> **2.196**  
Moisture Content: % **27.11**  
Cell pressure: kPa **50**

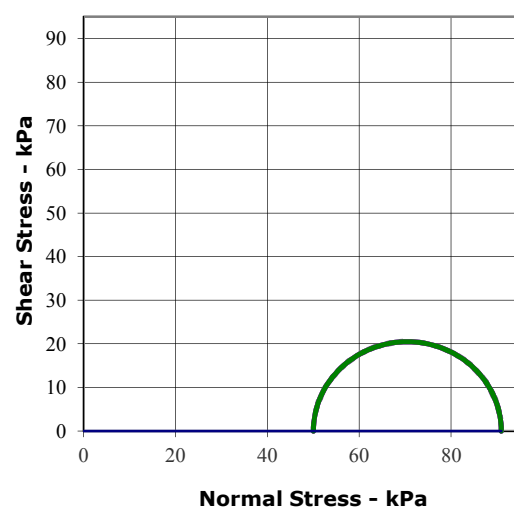
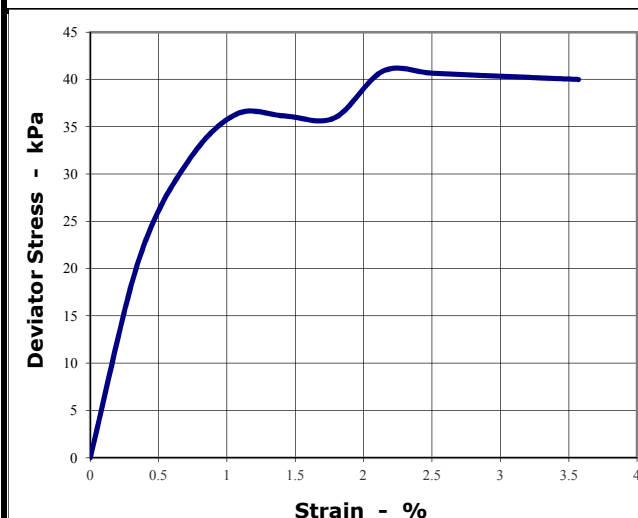
#### Single Stage

#### Shear Strength Parameters

C - kPa  
Phi - °

#### Test details

Membrane correction: kPa **0.47**  
Rate of Axial displacement: %/mm **1.43**  
Strain at Failure: % **2.14**  
Maximum deviator stress: kPa **41**  
Shear strength: kPa **20**  
Mode of failure: Intermediate



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

#### Approved By:

*Chris Magro*

Chris Magro  
Lab Manager

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## Laboratory Test Certificate

### Determination of Undrained Triaxial Compression to BS 1377: Part 7:1990 Clause 8

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR297
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	22/10/2014
Attn:	Sfakianakis Costantinos			Client/Job Nº:	J2094
Client Tel Nº:	3.06972E+11			Test Reference No:	TRI032
				Tested by:	CM
				Date of test:	21/10/2014

#### Test Information

Sample Ref No: 141001 - Clay  
Sampling Location: BH G2  
Sample Depth: Sample 4  
Date of sampling: 10/01/2014  
Type of Material: Very Soft Grey Silty Clay

#### Equipment Information

Membrane thickness: 0.3  
Load device No: 8750  
Load device calibration: 0.0171703  
Strain Device No: 1  
Strain Device Calibration mm/rev: 1  
Rate of deformation: 1

#### Specimen details

Height of Specimen: mm **76**  
Diameter of Specimen: mm **38.25**  
Mass of specimen: g **132.437**  
Volume: ml **87.33**  
Bulk Density - Wet: Mg/m<sup>3</sup> **1.517**  
Moisture Content: % **80.02**  
Cell pressure: kPa **50**

#### Specimen 1

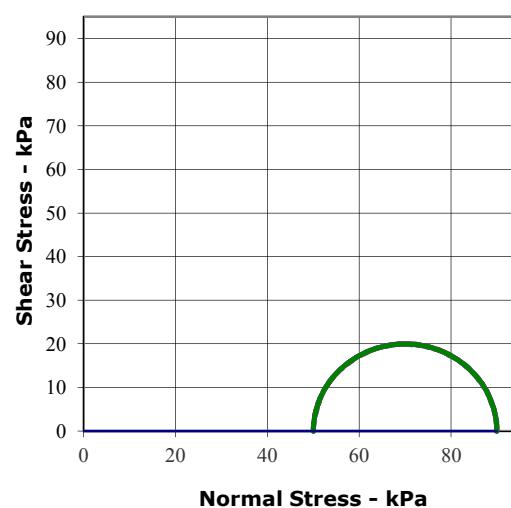
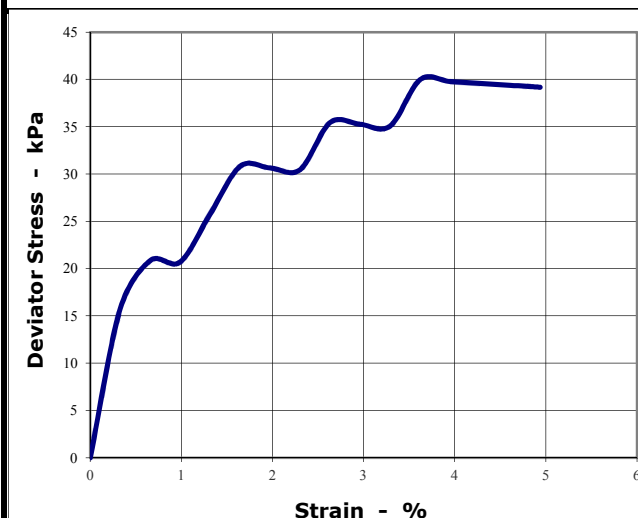
#### Single Stage

#### Shear Strength Parameters

C - kPa  
Phi - °

#### Test details

Membrane correction: kPa **0.76**  
Rate of Axial displacement: %/mm **1.32**  
Strain at Failure: % **3.62**  
Maximum deviator stress: kPa **40**  
Shear strength: kPa **20**  
Mode of failure: Intermediate



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Lab Manager

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## Laboratory Test Certificate

### Determination of Undrained Triaxial Compression to BS 1377: Part 7:1990 Clause 8

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR298
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Location/Town:	Geotechnical Investigation Delimara	Date of certificate:	22/10/2014
Attn:	Sfakianakis Costantinos			Client/Job Nº:	J2094
Client Tel Nº:	3.06972E+11			Test Reference No:	TRI033
				Tested by:	CM
				Date of test:	21/10/2014

#### Test Information

Sample Ref No: 141001 - Clay  
Sampling Location: BH G2  
Sample Depth: Sample 7  
Date of sampling: 10/01/2014  
Type of Material: Loose Brown Silty Soil

#### Equipment Information

Membrane thickness: 0.3  
Load device No: 8750  
Load device calibration: 0.0171703  
Strain Device No: 1  
Strain Device Calibration mm/rev: 1  
Rate of deformation: 1

#### Specimen details

#### Specimen 1

Height of Specimen: mm **76**  
Diameter of Specimen: mm **38.25**  
Mass of specimen: g **141.71**  
Volume: ml **87.33**  
Bulk Density - Wet: Mg/m<sup>3</sup> **1.623**  
Moisture Content: % **29.70**  
Cell pressure: kPa **110**

#### Single Stage

#### Shear Strength Parameters

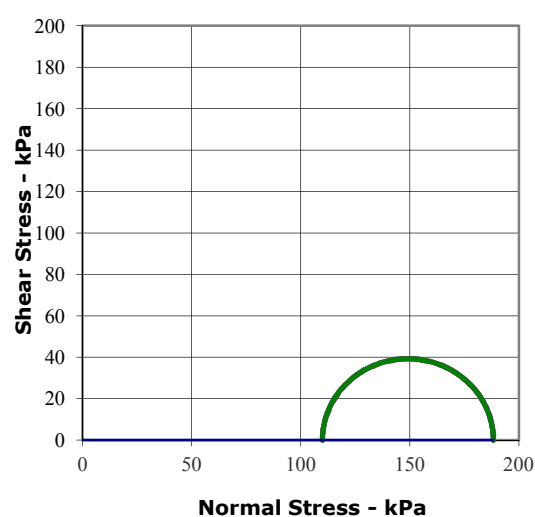
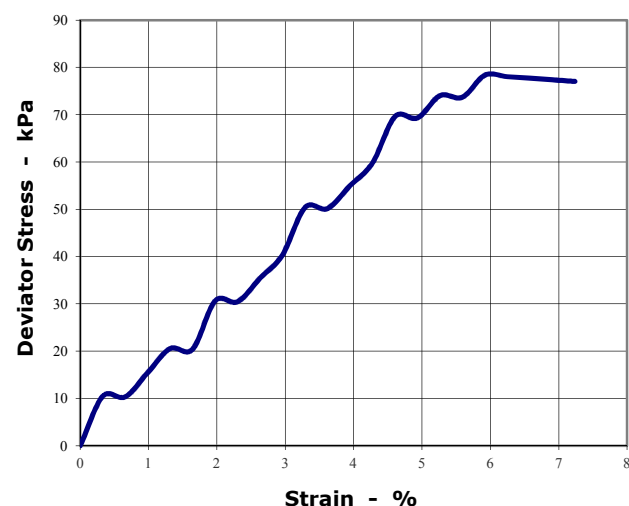
C - kPa  
Phi - °

#### Test details

Membrane correction: kPa **1.17**  
Rate of Axial displacement: %/mm **1.32**  
Strain at Failure: % **5.92**  
Maximum deviator stress: kPa **78**  
Shear strength: kPa **39**

Mode of failure:

Intermediate



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Lab Manager

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### Determination of Undrained Triaxial Compression to BS 1377: Part 7:1990 Clause 8

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR299
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	22/10/2014
Attn:	Sfakianakis Costantinos			Client/Job Nº:	J2094
Client Tel Nº:	3.06972E+11			Test Reference No:	TRI034
				Tested by:	CM
				Date of test:	21/10/2014

#### Test Information

Sample Ref No: 141004 - Clay  
Sampling Location: BH G3  
Sample Depth: Sample 2  
Date of sampling: 10/04/2014  
Type of Material: Grey Silty Soil

#### Equipment Information

Membrane thickness: 0.3  
Load device No: 8750  
Load device calibration: 0.0171703  
Strain Device No: 1  
Strain Device Calibration mm/rev: 1  
Rate of deformation: 1

#### Specimen details

Height of Specimen: mm **76**  
Diameter of Specimen: mm **38.25**  
Mass of specimen: g **170.787**  
Volume: ml **87.33**  
Bulk Density - Wet: Mg/m<sup>3</sup> **1.956**  
Moisture Content: % **34.10**  
Cell pressure: kPa **50**

#### Specimen 1

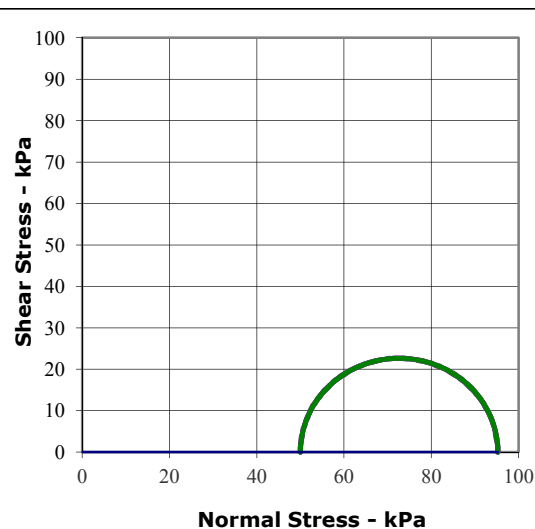
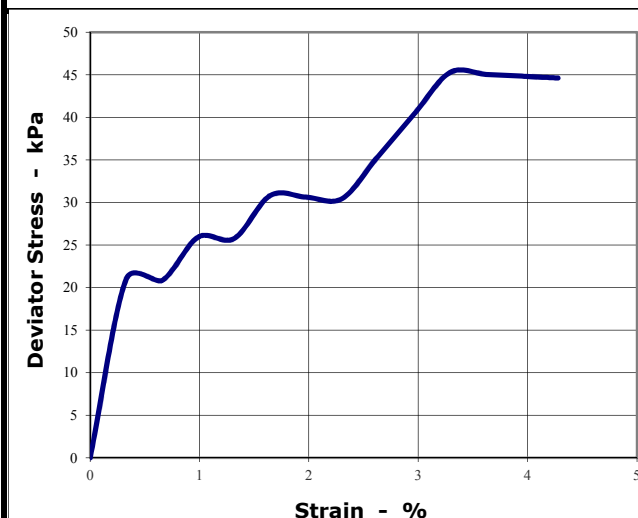
#### Single Stage

#### Shear Strength Parameters

C - kPa  
Phi - °

#### Test details

Membrane correction: kPa **0.70**  
Rate of Axial displacement: %/mm **1.32**  
Strain at Failure: % **3.29**  
Maximum deviator stress: kPa **45**  
Shear strength: kPa **23**  
Mode of failure: Intermediate



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

#### Approved By:

*Chris Magro*

Chris Magro  
Lab Manager

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Registration No.: C32227

Alfred Xerri

## Laboratory Test Certificate

### Determination of Undrained Triaxial Compression to BS 1377: Part 7:1990 Clause 8

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR300
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	22/10/2014
Attn:	Sfakianakis Costantinos			Client/Job Nº:	J2094
Client Tel Nº:	3.06972E+11			Test Reference No:	TRI035
				Tested by:	CM
				Date of test:	21/10/2014

#### Test Information

Sample Ref No: 141004 - Clay  
Sampling Location: BH G3  
Sample Depth: Sample 5  
Date of sampling: 10/04/2014  
Type of Material: Soft Grey Silty Clay

#### Equipment Information

Membrane thickness: 0.3  
Load device No: 8750  
Load device calibration: 0.0171703  
Strain Device No: 1  
Strain Device Calibration mm/rev: 1  
Rate of deformation: 1

#### Specimen details

Height of Specimen: mm **75.8**  
Diameter of Specimen: mm **38.3**  
Mass of specimen: g **148.716**  
Volume: ml **87.33**  
Bulk Density - Wet: Mg/m<sup>3</sup> **1.703**  
Moisture Content: % **46.63**  
Cell pressure: kPa **110**

#### Specimen 1

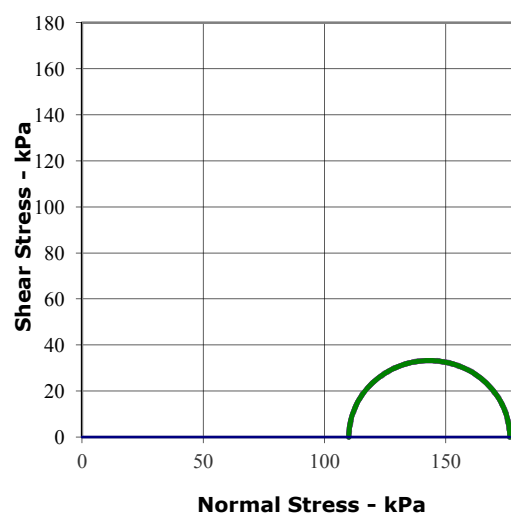
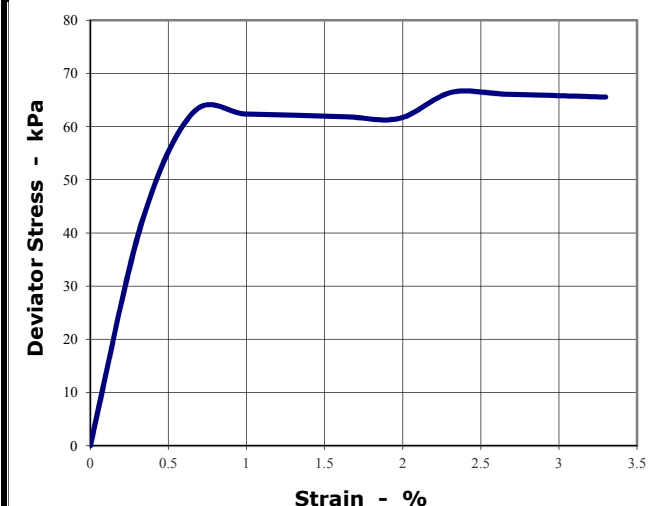
#### Single Stage

#### Shear Strength Parameters

C - kPa  
Phi - °

#### Test details

Membrane correction: kPa **0.50**  
Rate of Axial displacement: %/mm **1.32**  
Strain at Failure: % **2.31**  
Maximum deviator stress: kPa **66**  
Shear strength: kPa **33**  
Mode of failure: Intermediate



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Lab Manager

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## Laboratory Test Certificate

### Determination of Undrained Triaxial Compression to BS 1377: Part 7:1990 Clause 8

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR301
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	22/10/2014
Attn:	Sfakianakis Costantinos			Client/Job Nº:	J2094
Client Tel Nº:	3.06972E+11			Test Reference No:	TRI036
				Tested by:	CM
				Date of test:	21/10/2014

#### Test Information

Sample Ref No: 140929 - Clay  
Sampling Location: BH G4  
Sample Depth: Sample 2  
Date of sampling: 29/09/2014  
Type of Material: Loose Grey Silty Soil

#### Equipment Information

Membrane thickness: 0.3  
Load device No: 8750  
Load device calibration: 0.0171703  
Strain Device No: 1  
Strain Device Calibration mm/rev: 1  
Rate of deformation: 1

#### Specimen details

Height of Specimen: mm **76**  
Diameter of Specimen: mm **38.3**  
Mass of specimen: g **147.171**  
Volume: ml **87.56**  
Bulk Density - Wet: Mg/m<sup>3</sup> **1.681**  
Moisture Content: % **32.71**  
Cell pressure: kPa **50**

#### Specimen 1

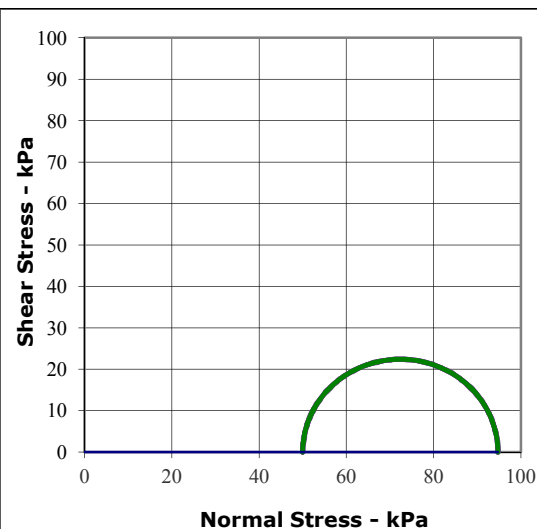
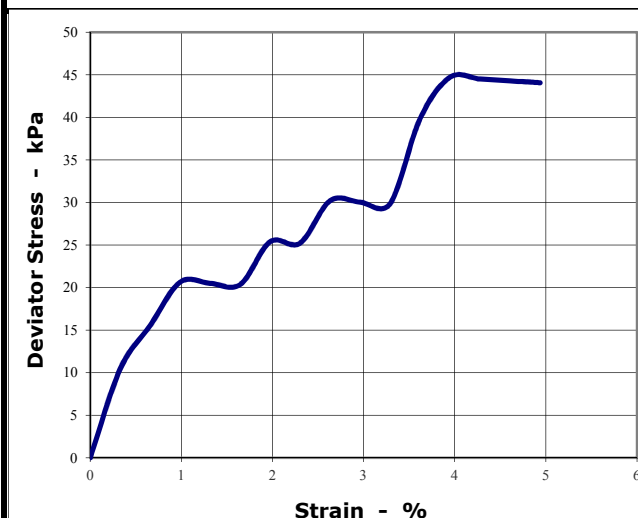
#### Single Stage

#### Shear Strength Parameters

C - kPa  
Phi - °

#### Test details

Membrane correction: kPa **0.82**  
Rate of Axial displacement: %/mm **1.32**  
Strain at Failure: % **3.95**  
Maximum deviator stress: kPa **45**  
Shear strength: kPa **22**  
Mode of failure: Intermediate



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Lab Manager

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Registration No.: C32227

Alfred Xerri

## Laboratory Test Certificate

### Determination of Undrained Triaxial Compression to BS 1377: Part 7:1990 Clause 8

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR302
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	22/10/2014
Attn:	Sfakianakis Costantinos			Client/Job Nº:	J2094
Client Tel Nº:	3.06972E+11			Test Reference No:	TRI037
				Tested by:	CM
				Date of test:	21/10/2014

#### Test Information

Sample Ref No: 140929 - Clay  
Sampling Location: BH G4  
Sample Depth: Sample 6  
Date of sampling: 29/09/2014  
Type of Material: Grey Silty Soil

#### Equipment Information

Membrane thickness: 0.3  
Load device No: 8750  
Load device calibration: 0.0171703  
Strain Device No: 1  
Strain Device Calibration mm/rev: 1  
Rate of deformation: 1

#### Specimen details

Height of Specimen: mm **76**  
Diameter of Specimen: mm **38.3**  
Mass of specimen: g **148.771**  
Volume: ml **87.56**  
Bulk Density - Wet: Mg/m<sup>3</sup> **1.699**  
Moisture Content: % **48.56**  
Cell pressure: kPa **50**

#### Specimen 1

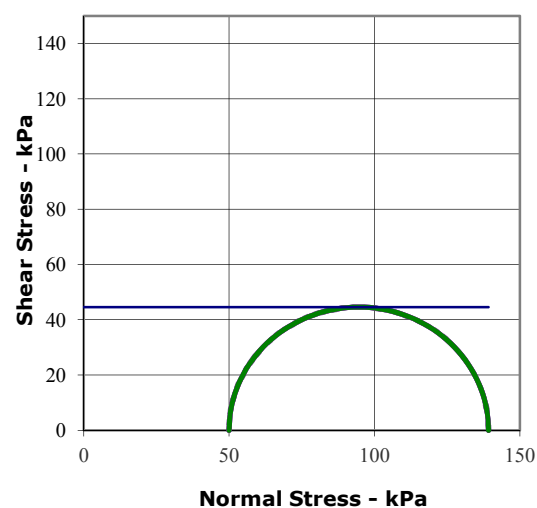
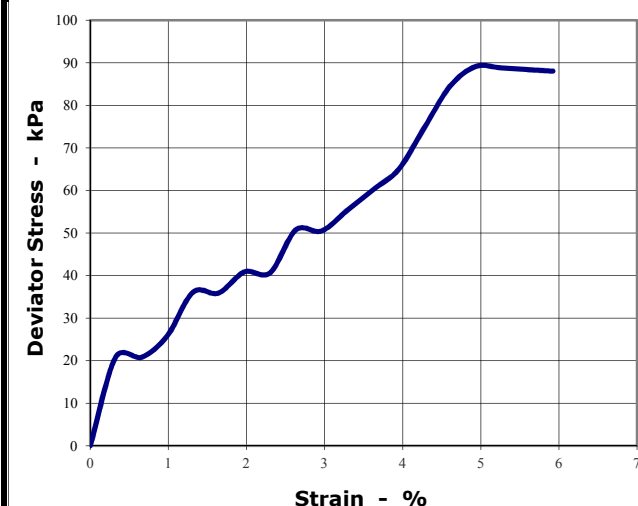
#### Single Stage

#### Shear Strength Parameters

C **45** kPa  
Phi **0.0** °

#### Test details

Membrane correction: kPa **1.00**  
Rate of Axial displacement: %/mm **1.32**  
Strain at Failure: % **4.93**  
Maximum deviator stress: kPa **89**  
Shear strength: kPa **45**  
Mode of failure: Intermediate



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

#### Approved By:

*Chris Magro*

Chris Magro  
Lab Manager

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E: info@terracoemalta.com W: www.terracoemalta.com

Registration No.: C32227

Alfred Xerri

## Laboratory Test Certificate

### Determination of Undrained Triaxial Compression to BS 1377: Part 7:1990 Clause 8

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR303
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	22/10/2014
Attn:	Sfakianakis Costantinos			Client/Job Nº:	J2094
Client Tel Nº:	3.06972E+11			Test Reference No:	TRI038
				Tested by:	CM
				Date of test:	21/10/2014

#### Test Information

Sample Ref No: 140929 - Clay  
Sampling Location: BH G4  
Sample Depth: Sample 7  
Date of sampling: 29/09/2014  
Type of Material: Stiff Grey Silty Clay

#### Equipment Information

Membrane thickness: 0.3  
Load device No: 8750  
Load device calibration: 0.0171703  
Strain Device No: 1  
Strain Device Calibration mm/rev: 1  
Rate of deformation: 1

#### Specimen details

Height of Specimen: mm **76**  
Diameter of Specimen: mm **38.3**  
Mass of specimen: g **193.075**  
Volume: ml **87.56**  
Bulk Density - Wet: Mg/m<sup>3</sup> **2.205**  
Moisture Content: % **20.60**  
Cell pressure: kPa **80**

#### Specimen 1

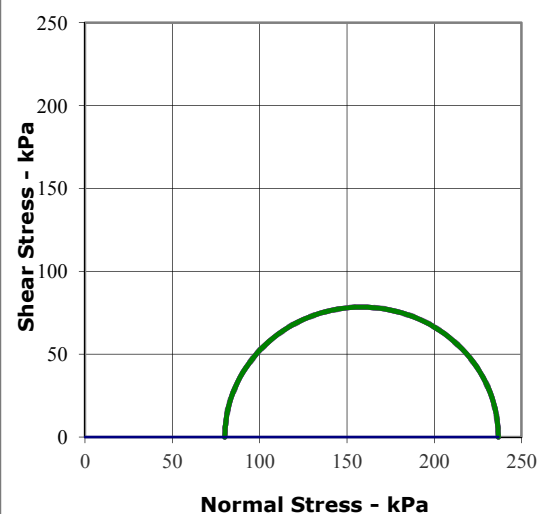
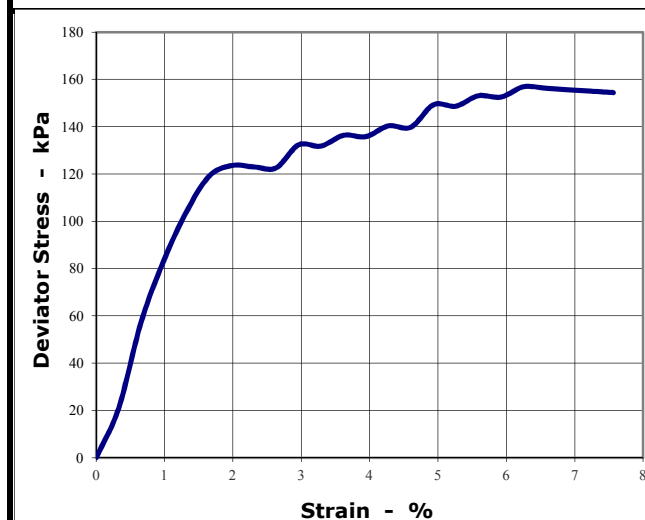
#### Single Stage

#### Shear Strength Parameters

C - kPa  
Phi - °

#### Test details

Membrane correction: kPa **1.22**  
Rate of Axial displacement: %/mm **1.32**  
Strain at Failure: % **6.25**  
Maximum deviator stress: kPa **157**  
Shear strength: kPa **78**  
Mode of failure: Intermediate



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Lab Manager

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## Laboratory Test Certificate

### Determination of Undrained Triaxial Compression to BS 1377: Part 7:1990 Clause 8

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR304
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	22/10/2014
Attn:	Sfakianakis Costantinos			Client/Job Nº:	J2094
Client Tel Nº:	3.06972E+11			Test Reference No:	TRI039
				Tested by:	CM
				Date of test:	21/10/2014

#### Test Information

Sample Ref No: 141003 - Clay  
Sampling Location: BH G5  
Sample Depth: Sample 2  
Date of sampling: 10/03/2014  
Type of Material: Loose Grey Silty Soil

#### Equipment Information

Membrane thickness: 0.3  
Load device No: 8750  
Load device calibration: 0.0171703  
Strain Device No: 1  
Strain Device Calibration mm/rev: 1  
Rate of deformation: 1

#### Specimen details

#### Specimen 1

Height of Specimen: mm **76**  
Diameter of Specimen: mm **38.3**  
Mass of specimen: g **141.71**  
Volume: ml **87.56**  
Bulk Density - Wet: Mg/m<sup>3</sup> **1.618**  
Moisture Content: % **26.78**  
Cell pressure: kPa **50**

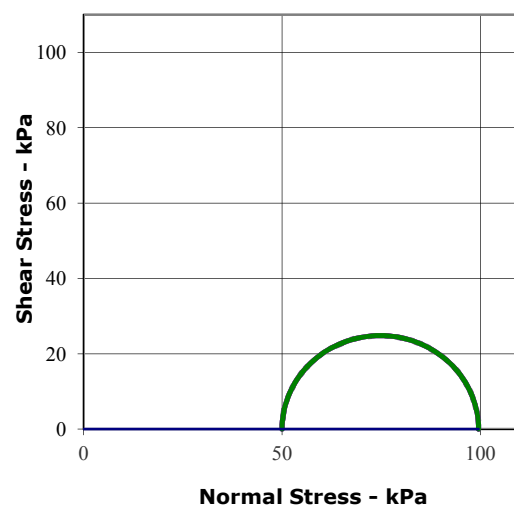
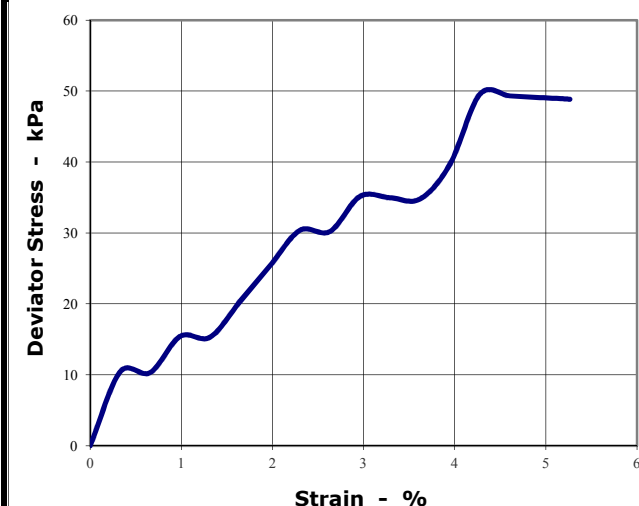
#### Single Stage

#### Shear Strength Parameters

C - kPa  
Phi - °

#### Test details

Membrane correction: kPa **0.88**  
Rate of Axial displacement: %/mm **1.32**  
Strain at Failure: % **4.28**  
Maximum deviator stress: kPa **50**  
Shear strength: kPa **25**  
Mode of failure: Intermediate



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

#### Approved By:

*Chris Magro*

Chris Magro  
Lab Manager

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Registration No.: C32227

Alfred Xerri

## Laboratory Test Certificate

### Determination of Undrained Triaxial Compression to BS 1377: Part 7:1990 Clause 8

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR305
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	22/10/2014
Attn:	Sfakianakis Costantinos			Client/Job Nº:	J2094
Client Tel Nº:	3.06972E+11			Test Reference No:	TRI040
				Tested by:	CM
				Date of test:	21/10/2014

#### Test Information

Sample Ref No: 141003 - Clay  
Sampling Location: BH G5  
Sample Depth: Sample 5  
Date of sampling: 10/03/2014  
Type of Material: Brown Silty Clay

#### Equipment Information

Membrane thickness: 0.3  
Load device No: 8750  
Load device calibration: 0.0171703  
Strain Device No: 1  
Strain Device Calibration mm/rev: 1  
Rate of deformation: 1

#### Specimen details

Height of Specimen: mm **75.8**  
Diameter of Specimen: mm **38.3**  
Mass of specimen: g **166.078**  
Volume: ml **87.33**  
Bulk Density - Wet: Mg/m<sup>3</sup> **1.902**  
Moisture Content: % **24.15**  
Cell pressure: kPa **110**

#### Specimen 1

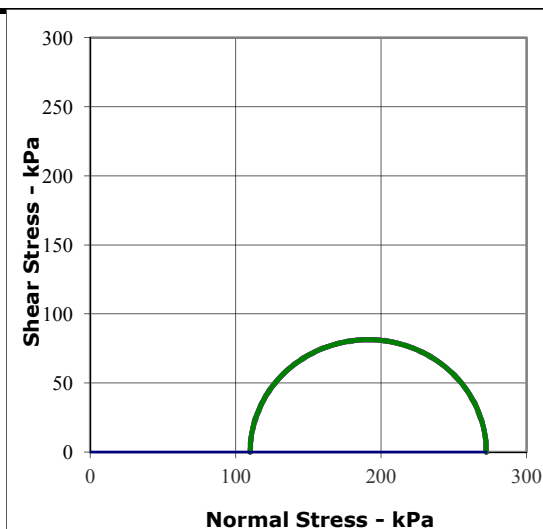
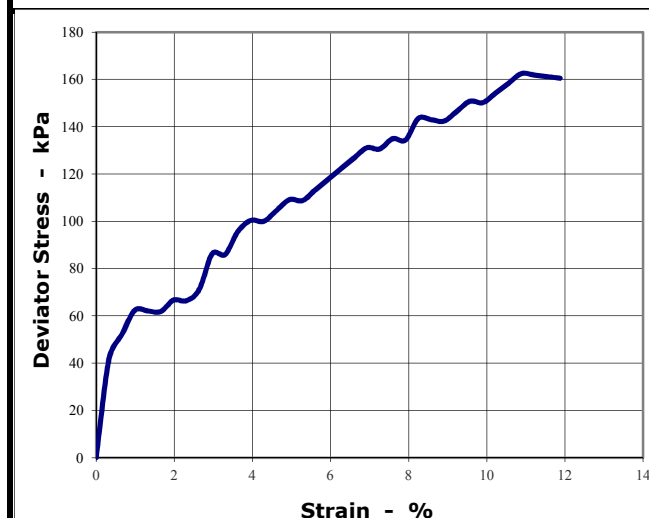
#### Single Stage

#### Shear Strength Parameters

C - kPa  
Phi - °

#### Test details

Membrane correction: kPa **1.89**  
Rate of Axial displacement: %/mm **1.32**  
Strain at Failure: % **10.88**  
Maximum deviator stress: kPa **162**  
Shear strength: kPa **81**  
Mode of failure: Intermediate



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

#### Approved By:

*Chris Magro*

Chris Magro  
Lab Manager

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Registration No.: C32227

Alfred Xerri

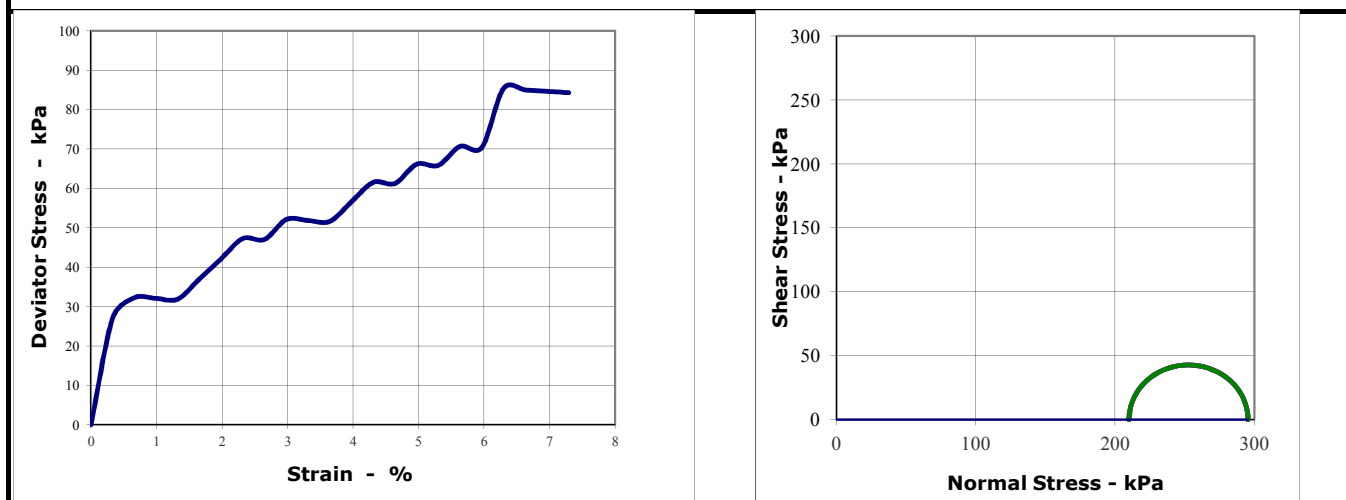
## Laboratory Test Certificate

### Determination of Undrained Triaxial Compression to BS 1377: Part 7:1990 Clause 8



Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate N°:	TCR306
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	22/10/2014
Attn:	Sfakianakis Costantinos			Client/Job N°:	J2094
Client Tel N°:	3.06972E+11			Test Reference No:	TRI041
				Tested by:	CM
				Date of test:	21/10/2014

Test Information		Equipment Information	
Sample Ref No:	141003 - Clay	Membrane thickness:	0.3
Sampling Location:	BH G5	Load device No:	8750
Sample Depth:	Sample 13	Load device calibration:	0.0171703
Date of sampling:	10/03/2014	Strain Device No	1
Type of Material:	Soft Light Brwon Silty Clay	StrainDevice Calibration mm/rev:	1
		Rate of deformation:	1

Specimen details		Specimen 1		Single Stage		Shear Strength Parameters	
Height of Specimen:	mm	<b>75.43</b>					
Diameter of Specimen:	mm	<b>37.7</b>					
Mass of specimen:	g	<b>172.44</b>					
Volume:	ml	<b>84.20</b>					
Bulk Density - Wet:	Mg/m <sup>3</sup>	<b>2.048</b>				C	- kPa
Moisture Content:	%	<b>25.97</b>				Phi	- °
Cell pressure:	kPa	<b>210</b>		0	0		
Test details							
Membrane correction:	kPa	<b>1.25</b>					
Rate of Axial displacement:	%/mm	<b>1.33</b>					
Strain at Failure:	%	<b>6.30</b>					
Maximum deviator stress:	kPa	<b>85</b>					
Shear strength:	kPa	<b>43</b>					
Mode of failure:					Intermediate		



Deviation from Standard:	Remarks:
Nil	Nil

Prepared By:	Approved By:
	
Jessica Farrugia Quality Manager	Chris Magro Lab Manager

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E: info@terracoiremalta.com W: www.terracoiremalta.com	Filename:	J2094_Soils_TCR306_TRI041_BH G5 S13.xls

## Laboratory Test Certificate

### Determination of Undrained Triaxial Compression to BS 1377: Part 7:1990 Clause 8

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR088
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	07/10/2014
Attn:	Sfakianakis Costantin			Client/Job Nº:	J2094
Client Tel Nº:	3.06972E+11			Test Reference No:	TRI006
				Tested by:	CM
				Date of test:	10/07/2014

#### Test Information

Sample Ref No: 140928 - Clay  
Sampling Location: BH G6  
Sample Depth: Sample 1  
Date of sampling: 28/9/2014  
Type of Material: Soft Grey Clay

#### Equipment Information

Membrane thickness: 0.3  
Load device No: 8750  
Load device calibration: 0.0171703  
Strain Device No: 1  
Strain Device Calibration mm/rev: 1  
Rate of deformation: 1

#### Specimen details

Height of Specimen: mm **75.1**  
Diameter of Specimen: mm **37.7**  
Mass of specimen: g **122.509**  
Volume: ml **83.83**  
Bulk Density - Wet: Mg/m<sup>3</sup> **1.461**  
Moisture Content: % **34.49**  
Cell pressure: kPa **50**

#### Specimen 1

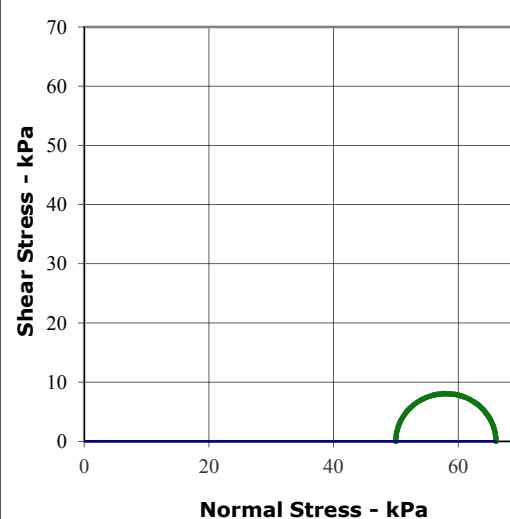
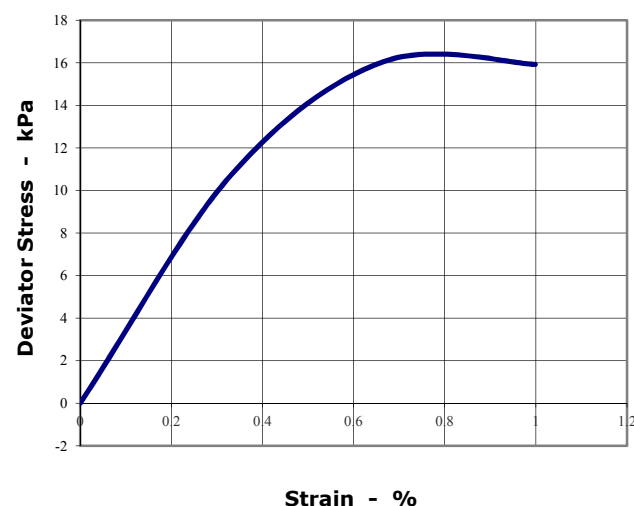
#### Single Stage

#### Shear Strength Parameters

C - kPa  
Phi - °

#### Test details

Membrane correction: kPa **0.15**  
Rate of Axial displacement: %/mm **1.33**  
Strain at Failure: % **0.67**  
Maximum deviator stress: kPa **16**  
Shear strength: kPa **8**  
Mode of failure: Intermediate



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Lab Manager

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## Laboratory Test Certificate

### Determination of Undrained Triaxial Compression to BS 1377: Part 7:1990 Clause 8

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Attn:	Sfakianakis Costantin			Client/Job Nº:	J2094
Client Tel Nº:	3.06972E+11			Test Reference No:	TRI007
				Tested by:	CM
				Date of test:	10/07/2014

#### Test Information

Sample Ref No: 140928 - Clay  
Sampling Location: BH G6  
Sample Depth: Sample 2  
Date of sampling: 28/9/2014  
Type of Material: Soft Grey Clay

#### Equipment Information

Membrane thickness: 0.3  
Load device No: 8750  
Load device calibration: 0.0171703  
Strain Device No: 1  
Strain Device Calibration mm/rev: 1  
Rate of deformation: 1

#### Specimen details

Height of Specimen: mm **75.7**  
Diameter of Specimen: mm **37.3**  
Mass of specimen: g **133.279**  
Volume: ml **82.72**  
Bulk Density - Wet: Mg/m<sup>3</sup> **1.611**  
Moisture Content: % **69.90**  
Cell pressure: kPa **50**

#### Specimen 1

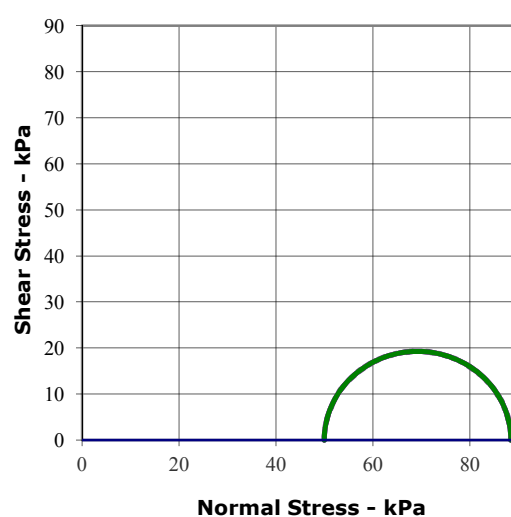
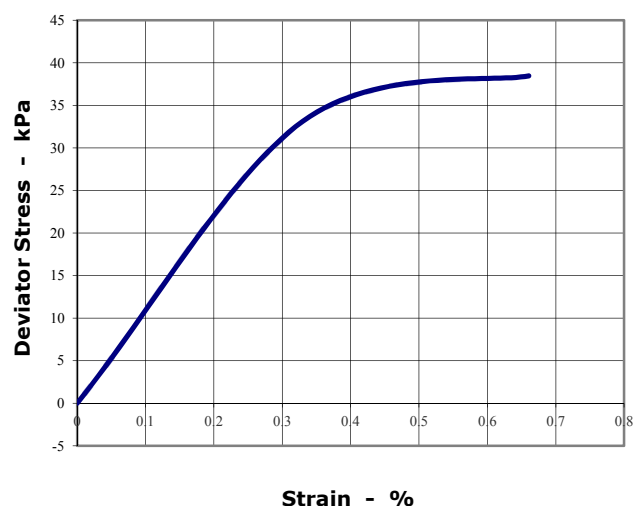
#### Single Stage

#### Shear Strength Parameters

C - kPa  
Phi - °

#### Test details

Membrane correction: kPa **0.15**  
Rate of Axial displacement: %/mm **1.32**  
Strain at Failure: % **0.66**  
Maximum deviator stress: kPa **38**  
Shear strength: kPa **19**  
Mode of failure: Intermediate



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Lab Manager

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Registration No.: C32227

Alfred Xerri

## Laboratory Test Certificate

### Determination of Undrained Triaxial Compression to BS 1377: Part 7:1990 Clause 8

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR090
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Location/Town:	Geotechnical Investigation Delimara	Date of certificate:	07/10/2014
Attn:	Sfakianakis Costantin			Client/Job Nº:	J2094
Client Tel Nº:	3.06972E+11			Test Reference No:	TRI008
				Tested by:	CM
				Date of test:	10/07/2014

#### Test Information

Sample Ref No: 140928 - Clay  
Sampling Location: BH G6  
Sample Depth: Sample 7  
Date of sampling: 28/9/2014  
Type of Material: Brown Silty Clay

#### Equipment Information

Membrane thickness: 0.3  
Load device No: 8750  
Load device calibration: 0.0171703  
Strain Device No: 1  
Strain Device Calibration mm/rev: 1  
Rate of deformation: 1

#### Specimen details

#### Specimen 1

Height of Specimen: mm **74**  
Diameter of Specimen: mm **37.3**  
Mass of specimen: g **170.31**  
Volume: ml **80.86**  
Bulk Density - Wet: Mg/m<sup>3</sup> **2.106**  
Moisture Content: % **25.30**  
Cell pressure: kPa **100**

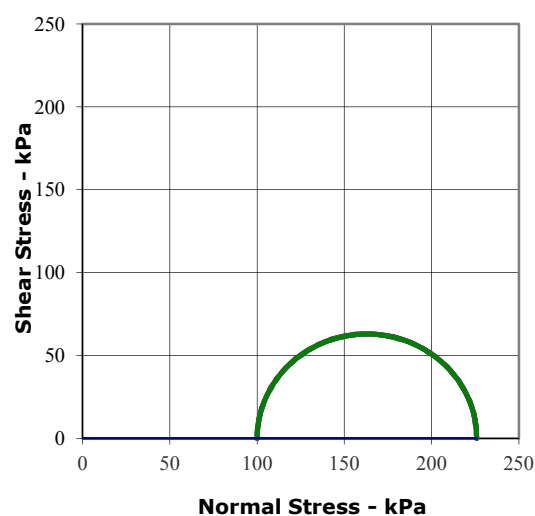
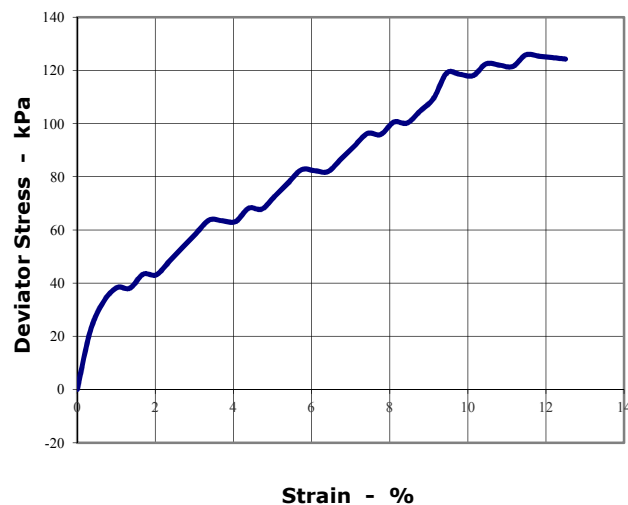
#### Single Stage

#### Shear Strength Parameters

C - kPa  
Phi - °

#### Test details

Membrane correction: kPa **2.02**  
Rate of Axial displacement: %/mm **1.35**  
Strain at Failure: % **11.49**  
Maximum deviator stress: kPa **126**  
Shear strength: kPa **63**  
Mode of failure: Intermediate



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

#### Approved By:

*Chris Magro*

Chris Magro  
Lab Manager

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### Determination of Undrained Triaxial Compression to BS 1377: Part 7:1990 Clause 8

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Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	07/10/2014
Attn:	Sfakianakis Costantinos			Client/Job Nº:	J2094
Client Tel Nº:	3.06972E+11			Test Reference No:	TRI009
				Tested by:	CM
				Date of test:	10/07/2014

#### Test Information

Sample Ref No: 140928 - Clay  
Sampling Location: BH G6  
Sample Depth: Sample 8  
Date of sampling: 28/9/2014  
Type of Material: Brown Silty Clay

#### Equipment Information

Membrane thickness: 0.3  
Load device No: 8750  
Load device calibration: 0.0171703  
Strain Device No: 1  
Strain Device Calibration mm/rev: 1  
Rate of deformation: 1

#### Specimen details

Height of Specimen: mm **75.7**  
Diameter of Specimen: mm **37.2**  
Mass of specimen: g **166.732**  
Volume: ml **82.28**  
Bulk Density - Wet: Mg/m<sup>3</sup> **2.027**  
Moisture Content: % **28.47**  
Cell pressure: kPa **120**

#### Specimen 1

#### Single Stage

#### Shear Strength Parameters

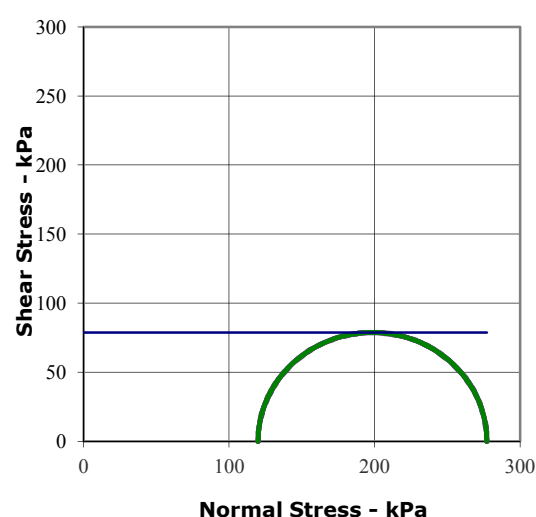
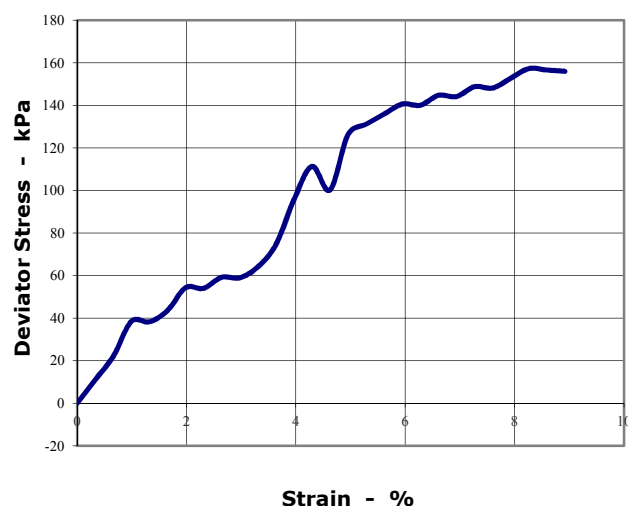
C **79** kPa  
Phi **0.0** °

#### Test details

Membrane correction: kPa **1.57**  
Rate of Axial displacement: %/mm **1.32**  
Strain at Failure: % **8.26**  
Maximum deviator stress: kPa **157**  
Shear strength: kPa **79**

Mode of failure:

Intermediate



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

#### Approved By:

*Chris Magro*

Chris Magro  
Lab Manager

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## Laboratory Test Certificate

### Determination of Undrained Triaxial Compression to BS 1377: Part 7:1990 Clause 8

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Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	07/10/2014
Attn:	Sfakianakis Costantin			Client/Job Nº:	J2094
Client Tel Nº:	3.06972E+11			Test Reference No:	TRI010
				Tested by:	CM
				Date of test:	10/07/2014

#### Test Information

Sample Ref No: 140928 - Clay  
Sampling Location: BH G6  
Sample Depth: Sample 9  
Date of sampling: 28/9/2014  
Type of Material: Brown Silty Clay

#### Equipment Information

Membrane thickness: 0.3  
Load device No: 8750  
Load device calibration: 0.0171703  
Strain Device No: 1  
Strain Device Calibration mm/rev: 1  
Rate of deformation: 1

#### Specimen details

#### Specimen 1

Height of Specimen: mm **74.1**  
Diameter of Specimen: mm **38.7**  
Mass of specimen: g **175.45**  
Volume: ml **87.16**  
Bulk Density - Wet: Mg/m<sup>3</sup> **2.013**  
Moisture Content: % **22.88**  
Cell pressure: kPa **140**

#### Single Stage

#### Shear Strength Parameters

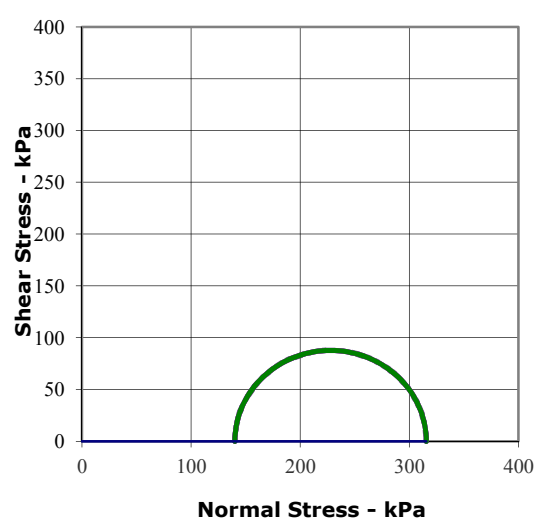
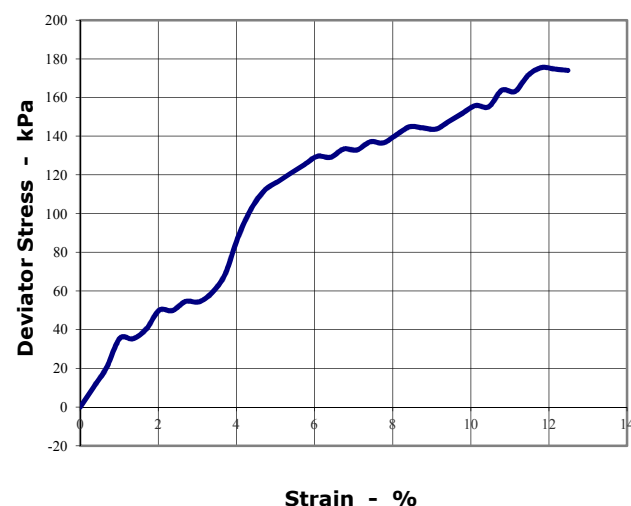
C - kPa  
Phi - °

#### Test details

Membrane correction: kPa **1.99**  
Rate of Axial displacement: %/mm **1.35**  
Strain at Failure: % **11.81**  
Maximum deviator stress: kPa **175**  
Shear strength: kPa **88**

Mode of failure:

Intermediate



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Lab Manager

# TEST CERTIFICATE

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E: info@terracoemalta.com W: www.terracoemalta.com

Registration No.: C32227

Alfred Xerri



## Laboratory Test Certificate

### Determination of Undrained Triaxial Compression to BS 1377: Part 7:1990 Clause 8

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR307
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	22/10/2014
Attn:	Sfakianakis Costantinos			Client/Job Nº:	J2094
Client Tel Nº:	3.06972E+11			Test Reference No:	TRI042
				Tested by:	CM
				Date of test:	21/10/2014

#### Test Information

Sample Ref No: 140926 - Clay  
Sampling Location: BH G7  
Sample Depth: Sample 7  
Date of sampling: 26/09/2014  
Type of Material: Soft Grey Silty Clay

#### Equipment Information

Membrane thickness: 0.3  
Load device No: 8750  
Load device calibration: 0.0171703  
Strain Device No: 1  
Strain Device Calibration mm/rev: 1  
Rate of deformation: 1

#### Specimen details

Height of Specimen: mm **76**  
Diameter of Specimen: mm **38.25**  
Mass of specimen: g **158.5**  
Volume: ml **87.33**  
Bulk Density - Wet: Mg/m<sup>3</sup> **1.815**  
Moisture Content: % **36.63**  
Cell pressure: kPa **70**

#### Specimen 1

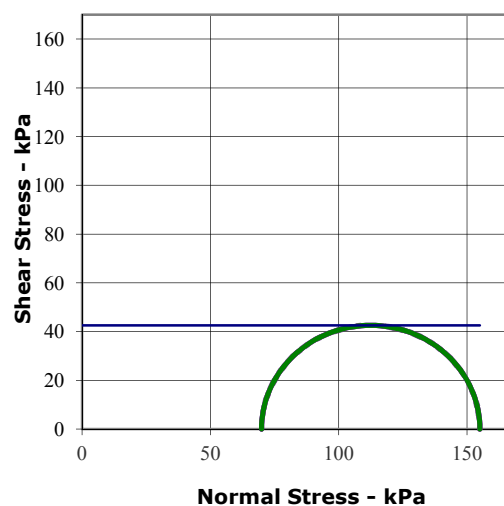
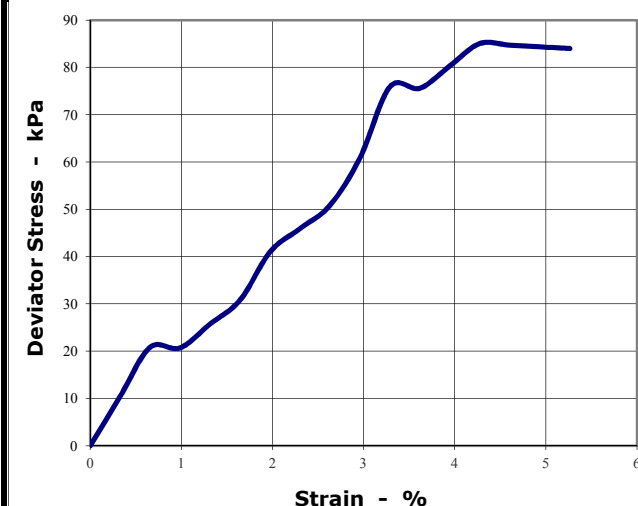
#### Single Stage

#### Shear Strength Parameters

C **43** kPa  
Phi **0.0** °

#### Test details

Membrane correction: kPa **0.88**  
Rate of Axial displacement: %/mm **1.32**  
Strain at Failure: % **4.28**  
Maximum deviator stress: kPa **85**  
Shear strength: kPa **43**  
Mode of failure: Intermediate



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

#### Approved By:

*Chris Magro*

Chris Magro  
Lab Manager

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Registration No.: C32227

Alfred Xerri

## Laboratory Test Certificate

### Determination of Undrained Triaxial Compression to BS 1377: Part 7:1990 Clause 8

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR093
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	07/10/2014
Attn:	Sfakianakis Costantinos			Client/Job Nº:	J2094
Client Tel Nº:	3.06972E+11			Test Reference No:	TRI011
				Tested by:	CM
				Date of test:	10/07/2014

#### Test Information

Sample Ref No: 140928 - Clay  
Sampling Location: BH G6  
Sample Depth: Sample 13  
Date of sampling: 28/9/2014  
Type of Material: Soft Brown Silty Clay

#### Equipment Information

Membrane thickness: 0.3  
Load device No: 8750  
Load device calibration: 0.0171703  
Strain Device No: 1  
Strain Device Calibration mm/rev: 1  
Rate of deformation: 1

#### Specimen details

Specimen 1  
Height of Specimen: mm **75.8**  
Diameter of Specimen: mm **38.3**  
Mass of specimen: g **171.394**  
Volume: ml **87.33**  
Bulk Density - Wet: Mg/m<sup>3</sup> **1.963**  
Moisture Content: % **34.49**  
Cell pressure: kPa **190**

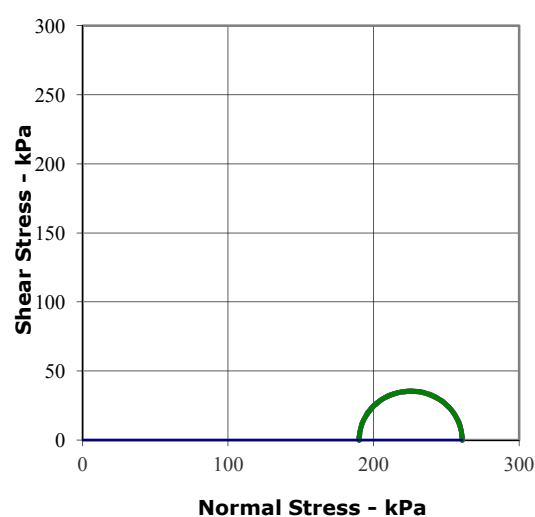
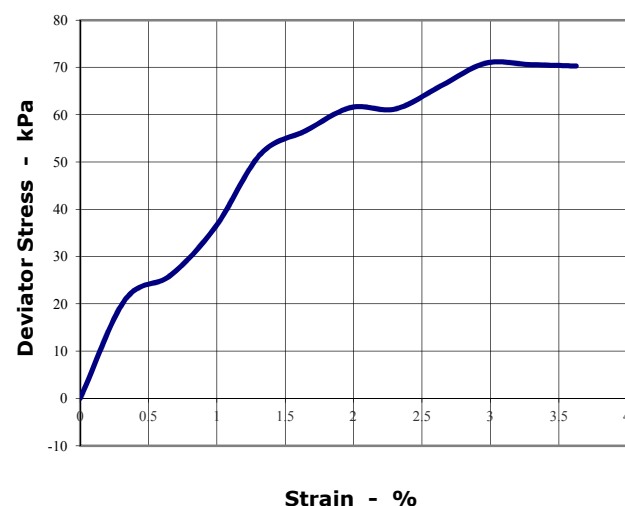
#### Single Stage

#### Shear Strength Parameters

C - kPa  
Phi - °

#### Test details

Membrane correction: kPa **0.64**  
Rate of Axial displacement: %/mm **1.32**  
Strain at Failure: % **2.97**  
Maximum deviator stress: kPa **71**  
Shear strength: kPa **35**  
Mode of failure: Intermediate



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Lab Manager

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Registration No.: C32227

Alfred Xerri

## Laboratory Test Certificate

### Determination of Undrained Triaxial Compression to BS 1377: Part 7:1990 Clause 8

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR308
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	22/10/2014
Attn:	Sfakianakis Costantinos			Client/Job Nº:	J2094
Client Tel Nº:	3.06972E+11			Test Reference No:	TRI043
				Tested by:	CM
				Date of test:	21/10/2014

#### Test Information

Sample Ref No: 140926 - Clay  
Sampling Location: BH G7  
Sample Depth: Sample 9  
Date of sampling: 26/09/2014  
Type of Material: Brown Silty Clay

#### Equipment Information

Membrane thickness: 0.3  
Load device No: 8750  
Load device calibration: 0.0171703  
Strain Device No: 1  
Strain Device Calibration mm/rev: 1  
Rate of deformation: 1

#### Specimen details

Height of Specimen: mm **75.75**  
Diameter of Specimen: mm **37.02**  
Mass of specimen: g **155.451**  
Volume: ml **81.54**  
Bulk Density - Wet: Mg/m<sup>3</sup> **1.907**  
Moisture Content: % **32.33**  
Cell pressure: kPa **90**

#### Specimen 1

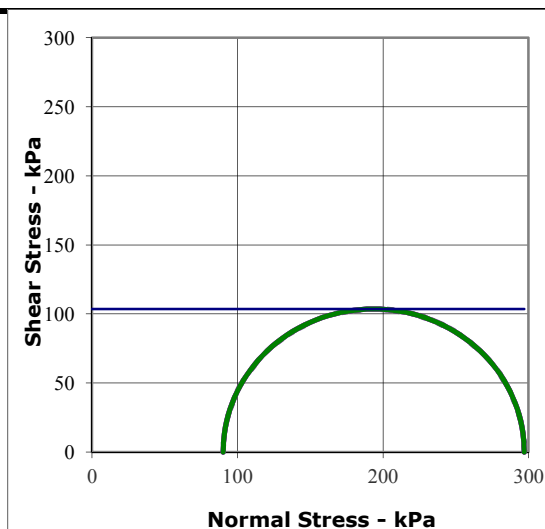
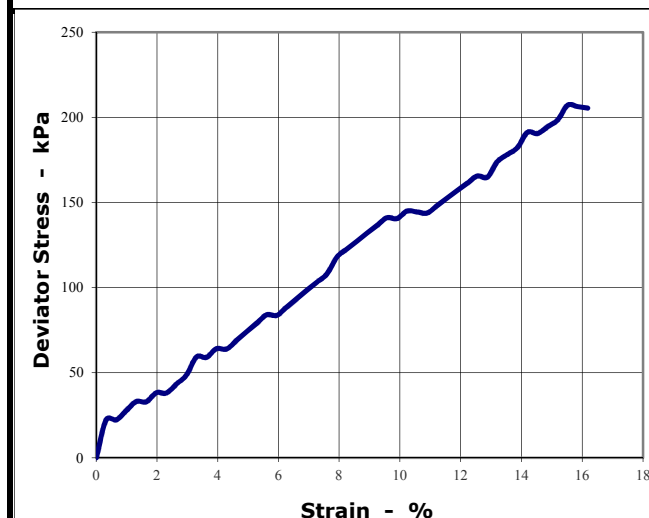
#### Single Stage

#### Shear Strength Parameters

C **104** kPa  
Phi **0.0** °

#### Test details

Membrane correction: kPa **2.56**  
Rate of Axial displacement: %/mm **1.32**  
Strain at Failure: % **15.51**  
Maximum deviator stress: kPa **207**  
Shear strength: kPa **104**  
Mode of failure: Intermediate



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

#### Approved By:

*Chris Magro*

Chris Magro  
Lab Manager

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Registration No.: C32227

Alfred Xerri

## Laboratory Test Certificate

### Determination of Undrained Triaxial Compression to BS 1377: Part 7:1990 Clause 8

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR309
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	22/10/2014
Attn:	Sfakianakis Costantinos			Client/Job Nº:	J2094
Client Tel Nº:	3.06972E+11			Test Reference No:	TRI044
				Tested by:	CM
				Date of test:	21/10/2014

#### Test Information

Sample Ref No: 140926 - Clay  
Sampling Location: BH G7  
Sample Depth: Sample 12  
Date of sampling: 26/09/2014  
Type of Material: Soft Brown Silty Clay

#### Equipment Information

Membrane thickness: 0.3  
Load device No: 8750  
Load device calibration: 0.0171703  
Strain Device No: 1  
Strain Device Calibration mm/rev: 1  
Rate of deformation: 1

#### Specimen details

Height of Specimen: mm **75.8**  
Diameter of Specimen: mm **38.3**  
Mass of specimen: g **153.98**  
Volume: ml **87.33**  
Bulk Density - Wet: Mg/m<sup>3</sup> **1.763**  
Moisture Content: % **38.51**  
Cell pressure: kPa **120**

#### Specimen 1

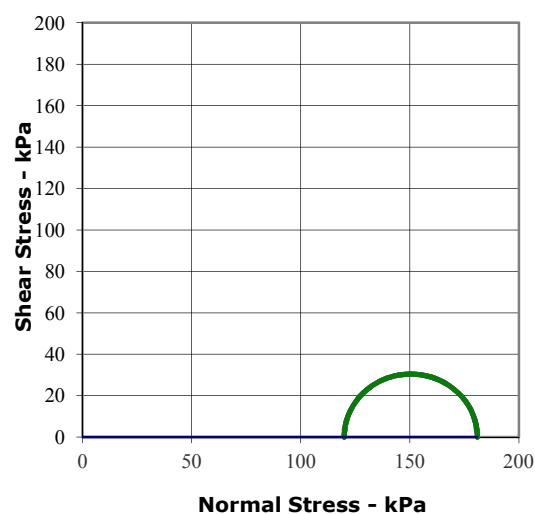
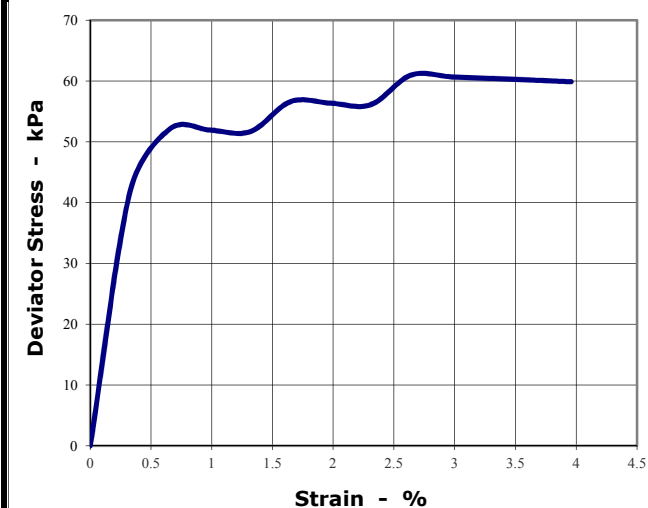
#### Single Stage

#### Shear Strength Parameters

C - kPa  
Phi - °

#### Test details

Membrane correction: kPa **0.57**  
Rate of Axial displacement: %/mm **1.32**  
Strain at Failure: % **2.64**  
Maximum deviator stress: kPa **61**  
Shear strength: kPa **30**  
Mode of failure: Intermediate



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Lab Manager

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## Laboratory Test Certificate

### Determination of Undrained Triaxial Compression to BS 1377: Part 7:1990 Clause 8

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR237
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	20/10/2014
Attn:	Sfakianakis Costantinos			Client/Job Nº:	J2094
Client Tel Nº:	3.06972E+11			Test Reference No:	TRI025
				Tested by:	CM
				Date of test:	20/10/2014

#### Test Information

Sample Ref No: 140916 - Clay  
Sampling Location: BH G8  
Sample Depth: 2-3 m  
Date of sampling: 16/9/2014  
Type of Material: Soft Grey Silty Clay

#### Equipment Information

Membrane thickness: 0.3  
Load device No: 8750  
Load device calibration: 0.0171703  
Strain Device No: 1  
Strain Device Calibration mm/rev: 1  
Rate of deformation: 1

#### Specimen details

Height of Specimen: mm **77.15**  
Diameter of Specimen: mm **38.08**  
Mass of specimen: g **141.089**  
Volume: ml **87.87**  
Bulk Density - Wet: Mg/m<sup>3</sup> **1.606**  
Moisture Content: % **54.63**  
Cell pressure: kPa **50**

#### Specimen 1

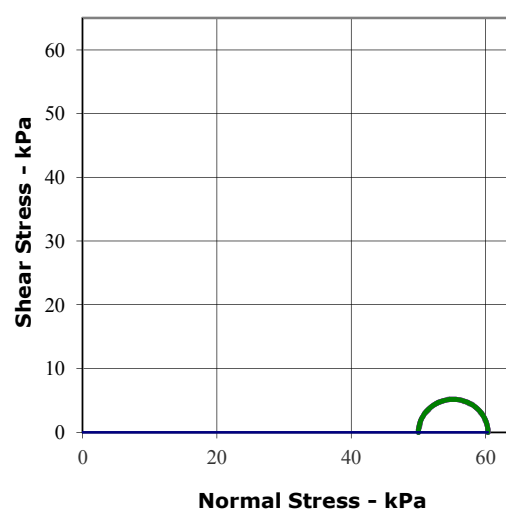
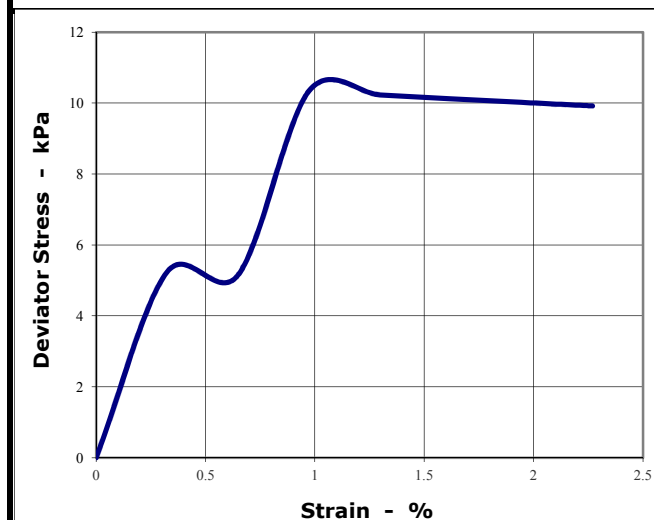
#### Single Stage

#### Shear Strength Parameters

C - kPa  
Phi - °

#### Test details

Membrane correction: kPa **0.22**  
Rate of Axial displacement: %/mm **1.30**  
Strain at Failure: % **0.97**  
Maximum deviator stress: kPa **10**  
Shear strength: kPa **5**  
Mode of failure: Intermediate



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

#### Approved By:

*Chris Magro*

Chris Magro  
Lab Manager

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Registration No.: C32227

Alfred Xerri

## Laboratory Test Certificate

### Determination of Undrained Triaxial Compression to BS 1377: Part 7:1990 Clause 8

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR238
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Location/Town:	Geotechnical Investigation Delimara	Date of certificate:	20/10/2014
Attn:	Sfakianakis Costantinos			Client/Job Nº:	J2094
Client Tel Nº:	3.06972E+11			Test Reference No:	TRI026
				Tested by:	CM
				Date of test:	20/10/2014

#### Test Information

Sample Ref No: 140916 - Clay  
Sampling Location: BH G8  
Sample Depth: 5.45-6.45 m  
Date of sampling: 16/9/2014  
Type of Material: Soft Grey Silty Clay

#### Equipment Information

Membrane thickness: 0.3  
Load device No: 8750  
Load device calibration: 0.0171703  
Strain Device No: 1  
Strain Device Calibration mm/rev: 1  
Rate of deformation: 1

#### Specimen details

Height of Specimen: mm **78.01**  
Diameter of Specimen: mm **37.1**  
Mass of specimen: g **140.738**  
Volume: ml **84.33**  
Bulk Density - Wet: Mg/m<sup>3</sup> **1.669**  
Moisture Content: % **58.94**  
Cell pressure: kPa **60**

#### Specimen 1

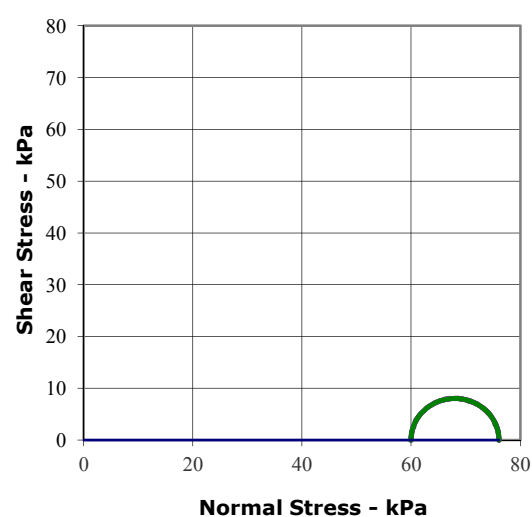
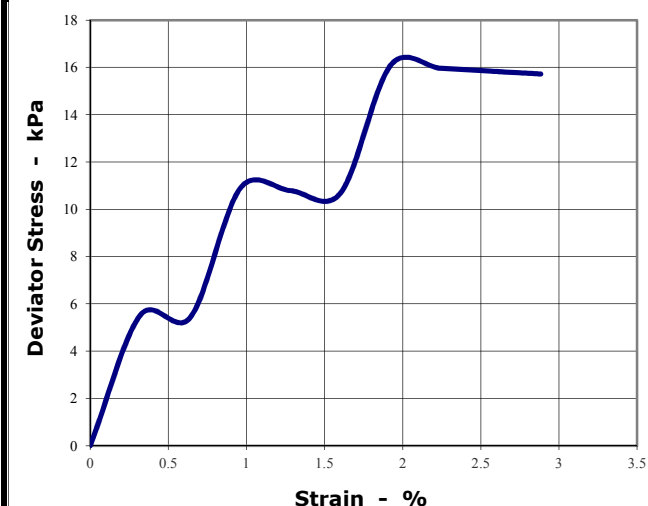
#### Single Stage

#### Shear Strength Parameters

C - kPa  
Phi - °

#### Test details

Membrane correction: kPa **0.44**  
Rate of Axial displacement: %/mm **1.28**  
Strain at Failure: % **1.92**  
Maximum deviator stress: kPa **16**  
Shear strength: kPa **8**  
Mode of failure: Intermediate



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Lab Manager

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## Laboratory Test Certificate

### Determination of Undrained Triaxial Compression to BS 1377: Part 7:1990 Clause 8

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR310
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	22/10/2014
Attn:	Sfakianakis Costantinos			Client/Job Nº:	J2094
Client Tel Nº:	3.06972E+11			Test Reference No:	TRI045
				Tested by:	CM
				Date of test:	21/10/2014

#### Test Information

Sample Ref No: 140915 - Clay  
Sampling Location: BH G9  
Sample Depth: 5.3-5.5m  
Date of sampling: 15/09/2014  
Type of Material: Silty Clay

#### Equipment Information

Membrane thickness: 0.3  
Load device No: 8750  
Load device calibration: 0.0171703  
Strain Device No: 1  
Strain Device Calibration mm/rev: 1  
Rate of deformation: 1

#### Specimen details

Height of Specimen: mm **76**  
Diameter of Specimen: mm **38.25**  
Mass of specimen: g **140.39**  
Volume: ml **87.33**  
Bulk Density - Wet: Mg/m<sup>3</sup> **1.608**  
Moisture Content: % **27.47**  
Cell pressure: kPa **50**

#### Specimen 1

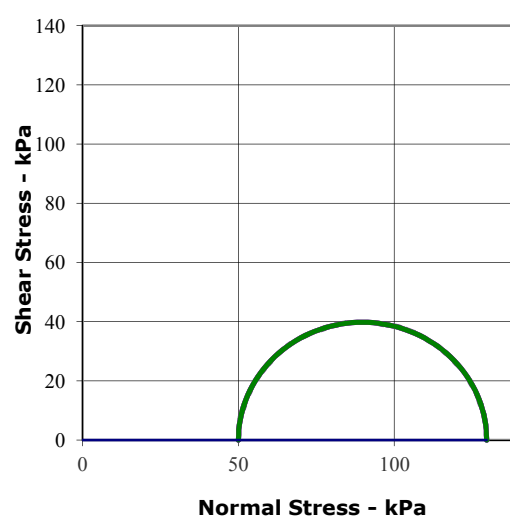
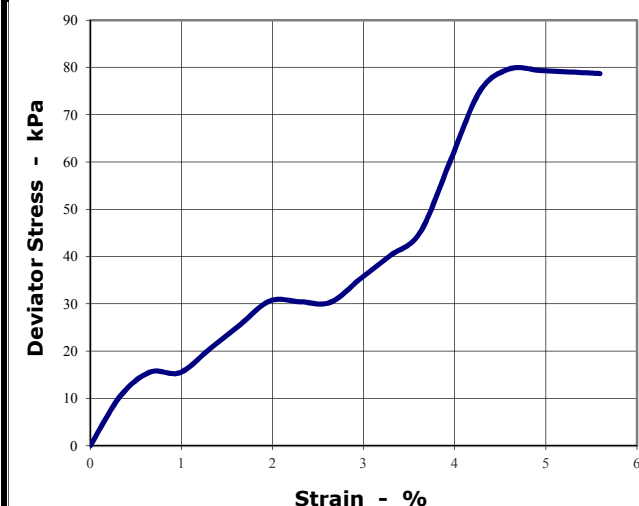
#### Single Stage

#### Shear Strength Parameters

C - kPa  
Phi - °

#### Test details

Membrane correction: kPa **0.94**  
Rate of Axial displacement: %/mm **1.32**  
Strain at Failure: % **4.61**  
Maximum deviator stress: kPa **80**  
Shear strength: kPa **40**  
Mode of failure: Intermediate



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

#### Approved By:

*Chris Magro*

Chris Magro  
Lab Manager

## TEST CERTIFICATE

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## Laboratory Test Certificate

### Determination of Undrained Triaxial Compression to BS 1377: Part 7:1990 Clause 8

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR311
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	22/10/2014
Attn:	Sfakianakis Costantinos			Client/Job Nº:	J2094
Client Tel Nº:	3.06972E+11			Test Reference No:	TRI046
				Tested by:	CM
				Date of test:	21/10/2014

#### Test Information

Sample Ref No: 140915 - Clay  
Sampling Location: BH G10  
Sample Depth: 2.3-2.7m  
Date of sampling: 15/09/2014  
Type of Material: Soft Grey Silty Clay

#### Equipment Information

Membrane thickness: 0.3  
Load device No: 8750  
Load device calibration: 0.0171703  
Strain Device No: 1  
Strain Device Calibration mm/rev: 1  
Rate of deformation: 1

#### Specimen details

Height of Specimen: mm **76**  
Diameter of Specimen: mm **38.25**  
Mass of specimen: g **175.051**  
Volume: ml **87.33**  
Bulk Density - Wet: Mg/m<sup>3</sup> **2.004**  
Moisture Content: % **21.12**  
Cell pressure: kPa **40**

#### Specimen 1

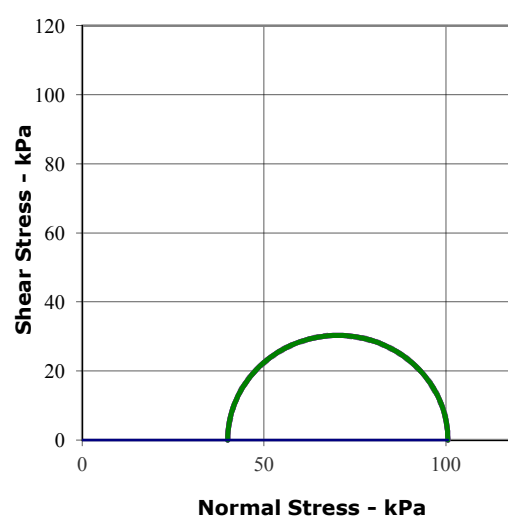
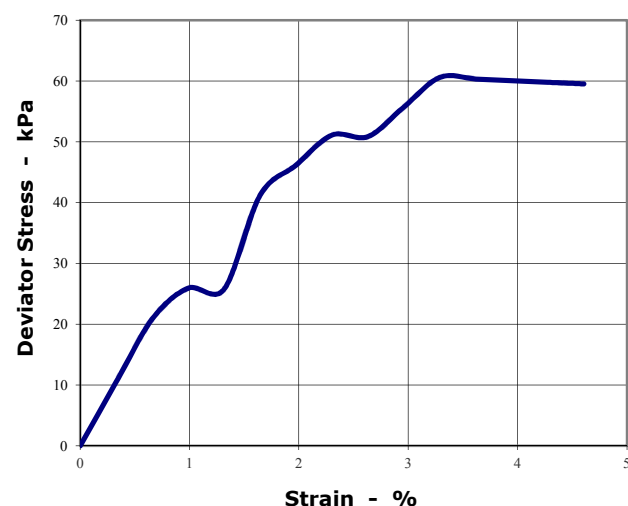
#### Single Stage

#### Shear Strength Parameters

C - kPa  
Phi - °

#### Test details

Membrane correction: kPa **0.70**  
Rate of Axial displacement: %/mm **1.32**  
Strain at Failure: % **3.29**  
Maximum deviator stress: kPa **61**  
Shear strength: kPa **30**  
Mode of failure: Intermediate



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

#### Approved By:

*Chris Magro*

Chris Magro  
Lab Manager

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Registration No.: C32227

Alfred Xerri



## Laboratory Test Certificate

### Determination of Undrained Triaxial Compression to BS 1377: Part 7:1990 Clause 8

Client name:	J&P AVAX S.A.	Project:	Onshore & Offshore	Certificate Nº:	TCR312
Client address:	29, Maroussiou Holandriou Street 151- 25 Maroussi Greece	Location/Town:	Delimara	Date of certificate:	22/10/2014
Attn:	Sfakianakis Costantinos			Client/Job Nº:	J2094
Client Tel Nº:	3.06972E+11			Test Reference No:	TRI047
				Tested by:	CM
				Date of test:	21/10/2014

#### Test Information

Sample Ref No: 140915 - Clay  
Sampling Location: BH G10  
Sample Depth: 8.5-8.7m  
Date of sampling: 15/09/2014  
Type of Material: Very Soft Grey Silty Clay

#### Equipment Information

Membrane thickness: 0.3  
Load device No: 8750  
Load device calibration: 0.0171703  
Strain Device No: 1  
Strain Device Calibration mm/rev: 1  
Rate of deformation: 1

#### Specimen details

Height of Specimen: mm **76**  
Diameter of Specimen: mm **38.25**  
Mass of specimen: g **140.79**  
Volume: ml **87.33**  
Bulk Density - Wet: Mg/m<sup>3</sup> **1.612**  
Moisture Content: % **43.21**  
Cell pressure: kPa **40**

#### Specimen 1

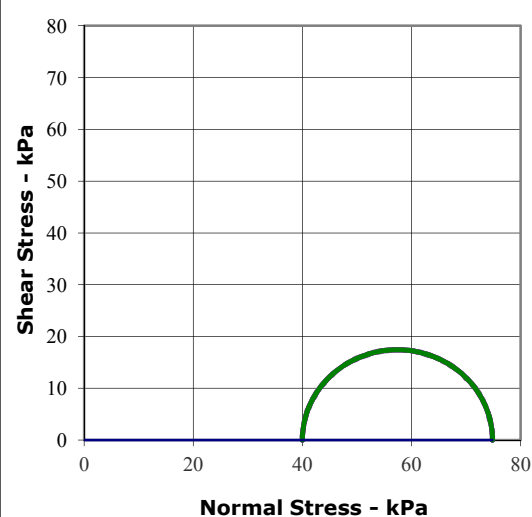
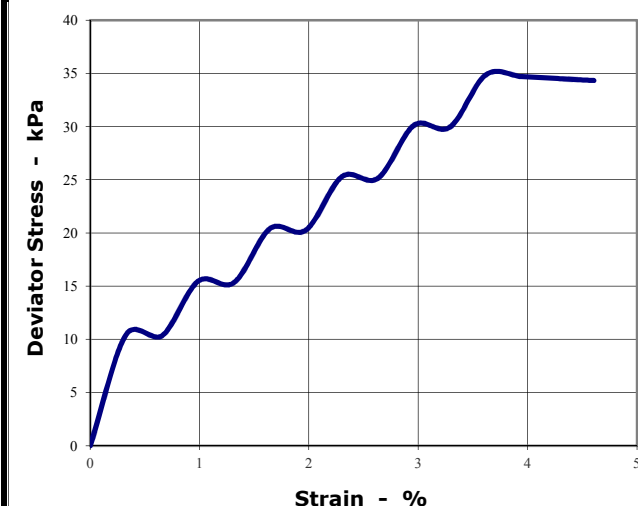
#### Single Stage

#### Shear Strength Parameters

C - kPa  
Phi - °

#### Test details

Membrane correction: kPa **0.76**  
Rate of Axial displacement: %/mm **1.32**  
Strain at Failure: % **3.62**  
Maximum deviator stress: kPa **35**  
Shear strength: kPa **17**  
Mode of failure: Intermediate



#### Deviation from Standard:

Nil

#### Remarks:

Nil

#### Prepared By:

Jessica Farrugia  
Quality Manager

#### Approved By:

Chris Magro  
Lab Manager

## TEST CERTIFICATE

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength of Rock materials according to ISRM Suggested Method

Client Name:	J&P AVAX S.A.	Date of sampling:	30/09/2014	Certificate no:	Report026
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test:	10/10/2014	Date of certificate:	10/10/2014
		Type of Corebarrel:	T286	Job no:	J2094
Commisioned by:	Giorgos Rousopoulos	Project:	Onshore & Offshore Geotechnical Investigation	Test reference no:	RCC026
Attn:	Giorgos Rousopoulos			Tested by:	CM
Client Tel No:	306972019434	Location/Town:	Delimara	Drill Type:	Mobile Drill

#### Details of prepared specimens

#### Borehole number:

#### BH G1

		RC	2	RC	4
Specimen No:					
Orientation of bedding planes with respect to the test specimen:		Perpendicular		Perpendicular	
Storage condition of specimens:		Sealed		Sealed	
Depth:		27.6m		33.2m	
Run No:		n/a		n/a	
Specimen end flat to 0.02mm:		Yes		Yes	
Specimen perpendicular to 0.001 Radian, about 3.5' or 0.05mm/50mm:		Yes		Yes	
Specimen sides smooth and straight to 0.3mm over full length of specimen:		Yes		Yes	
Initial diameter:(Average)	mm	58.4		58.8	
Initial length:(Average)	mm	129		130	
Initial area:	mm <sup>2</sup>	2680.7		2714.1	
Initial volume:	mL	346.7		351.0	
Length/diameter ratio:	L/D	2.21		2.21	
Condition as tested:		Slightly Dried		Slightly Dried	
Mass of specimen	g	734.32		778.4	
Water content (to 0.1%)	%				
Pore Volume	m <sup>3</sup>				
Average	m <sup>3</sup>	0.0000137			
Porosity	%				
Average	%	28.87			
Bulk Density	kg/m <sup>3</sup>	2118		2217	
Average	kg/m <sup>3</sup>	2168			
Dry Density	kg/m <sup>3</sup>				
Average	kg/m <sup>3</sup>	#DIV/0!			

#### Test details

		EQ001 No:6 (Range 0 - 150kN)	EQ001 No:6 (Range 0 - 150kN)
Machine type/ref:			
Rate of loading	N/min	3000	5000
Stress rate:	Mpa/s	0.019	0.031
Maximum failure load:	kN	13.1	41.3
Test duration:	sec	260	492
Uniaxial compressive strength:	Mpa	4.9	15.2
Average UCS:		10.0	
Mode of failure:		Multiple shear	Multiple shear
Degree of saturation:			
Comments/Deviations from suggested method:		Nil	
Measurment of Uncertainty:		Nil	

Prepared by:



Jessica Farrugia  
Quality Manager

Approved by:



Chris Magro  
Laboratory Manager

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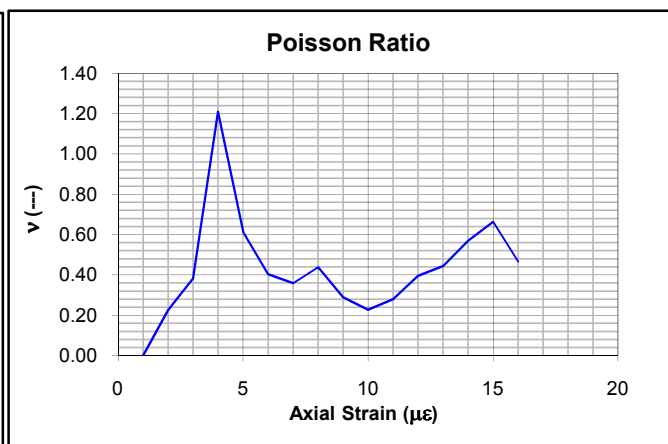
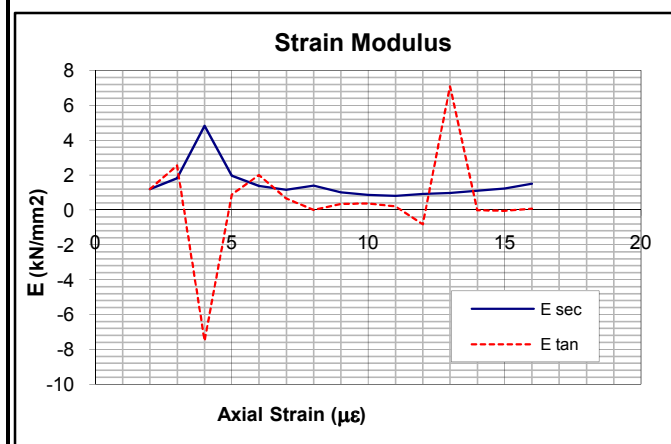
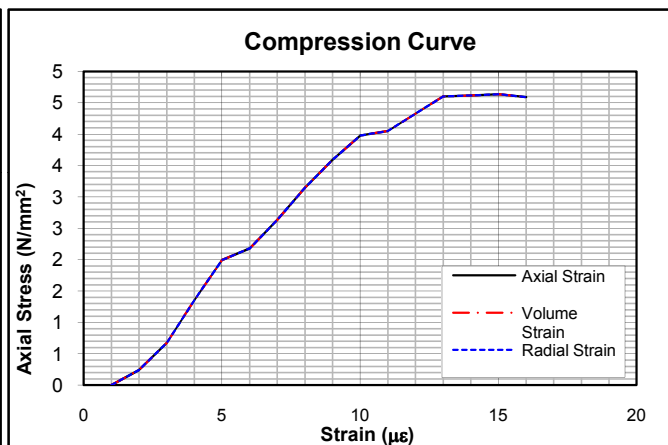
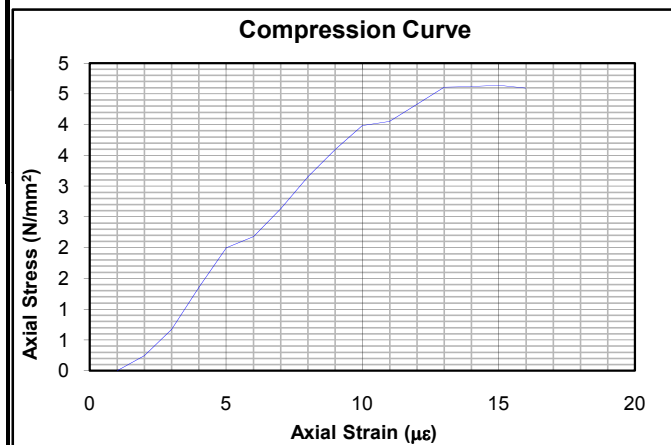
## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock030
Client address:	27, Marousiou Pioniras Street 151-25 Maroussi Greece Sardine Street	Site:	Delimara	Date of certificate:	1 October 2014
Attn:	Sfakianakis Costantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock030
				Tested by:	CM

Sample Information		Test Information	
Borehole No:	G1	Date of Test:	41922
Depth of Sample:	27.6m	Date of Preparation:	41861
Date of Sampling:	30/9/2014	Type of Gauges Used:	30mm Strain Gauges
Length / Diameter Ratio:	2.21		

Elongation Modulus and Poisson Ratio			
Calculated for axial $\sigma$ :	2.32	N/mm <sup>2</sup>	
E <sub>medio</sub> :	1.69	kN/mm <sup>2</sup>	
E <sub>tan</sub> :	2.00	kN/mm <sup>2</sup>	
E <sub>sec</sub> :	1.38	kN/mm <sup>2</sup>	
		Max. strength:	4.64 N/mm <sup>2</sup>
		Poisson at failure:	0.664
		Poisson:	0.403



Prepared by:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

Approved by:

*Chris Magro*

Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock031
Client address:	27, Marousiou Pionerasia Street 151-25 Maroussi Greece Sardine Street	Site:	Delimara	Date of certificate:	1 October 2014
Attn:	Sfakianakis Costantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock031
				Tested by:	CM

#### Sample Information

Borehole No: G1  
Depth of Sample: 30.2m  
Date of Sampling: 30/9/2014  
Length / Diameter Ratio: 2.21

#### Test Information

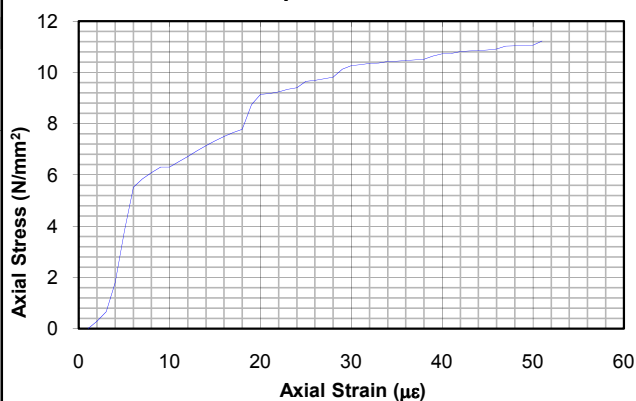
Date of Test: 41922  
Date of Preparation: 41861  
Type of Gauges Used: 30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

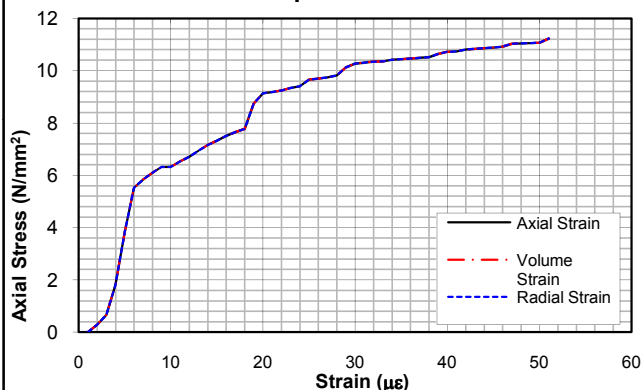
Calculated for axial  $\sigma$ : 5.61 N/mm<sup>2</sup>  
 $E_{\text{medio}}$ : 2.89 kN/mm<sup>2</sup>  
 $E_{\text{tan}}$ : 2.00 kN/mm<sup>2</sup>  
 $E_{\text{sec}}$ : 3.78 kN/mm<sup>2</sup>

Max. strength: 11.23 N/mm<sup>2</sup>  
Poisson at failure: 0.561  
Poisson: 0.259

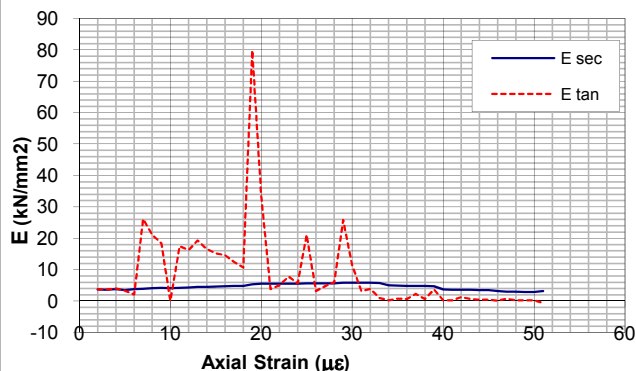
#### Compression Curve



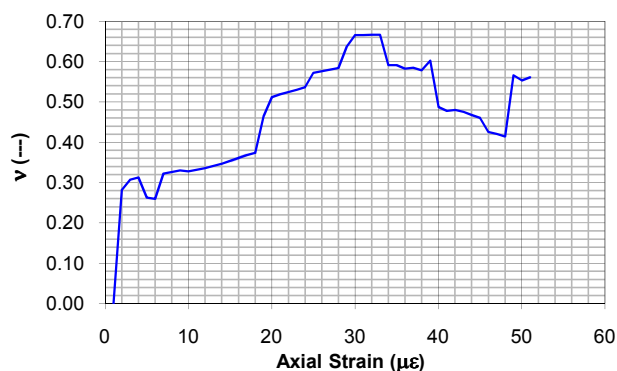
#### Compression Curve



#### Strain Modulus



#### Poisson Ratio



Prepared by:

Jessica Farrugia  
Quality Manager

Approved by:

Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation
Client address:	Street 151-25 Maroussi Greece Sardine Street	Site:	Delimara
Attn:	Sfakianakis Costantinos	Drill Type:	T44
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286

Certificate no:	Rock032
Date of certificate:	1 October 2014
Job no:	J2094
Test reference no:	Rock032
Tested by:	CM

#### Sample Information

Borehole No: G1  
Depth of Sample: 33.2m  
Date of Sampling: 30/9/2014  
Length / Diameter Ratio: 2.21

#### Test Information

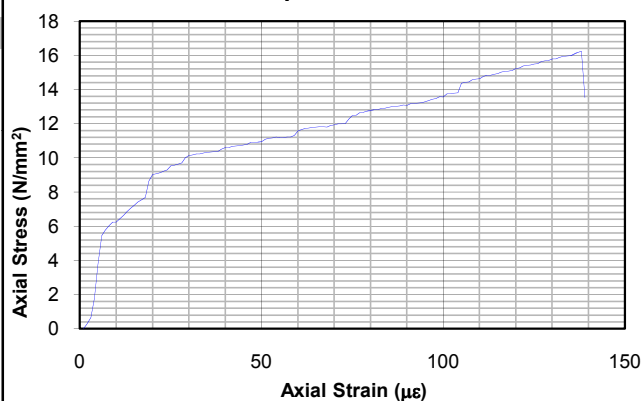
Date of Test: 41922  
Date of Preparation: 41861  
Type of Gauges Used: 30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

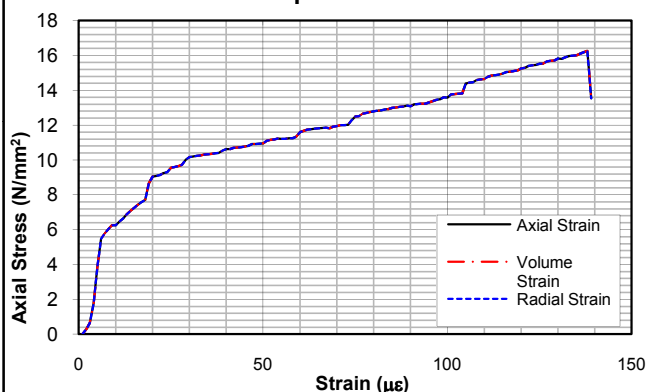
Calculated for axial  $\sigma$ : 8.12 N/mm<sup>2</sup>  
E<sub>medio</sub>: 7.61 kN/mm<sup>2</sup>  
E<sub>tan</sub>: 10.44 kN/mm<sup>2</sup>  
E<sub>sec</sub>: 4.78 kN/mm<sup>2</sup>

Max. strength: 16.24 N/mm<sup>2</sup>  
Poisson at failure: 0.460  
Poisson: 0.374

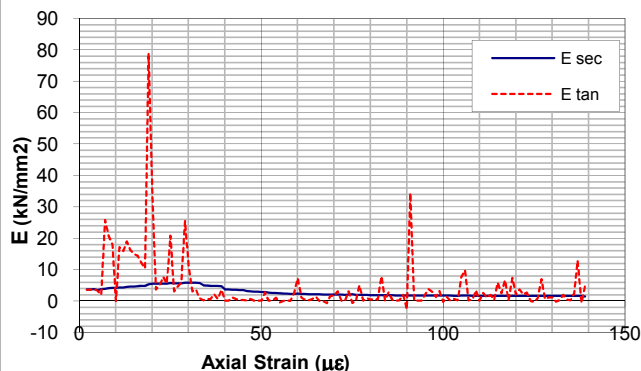
#### Compression Curve



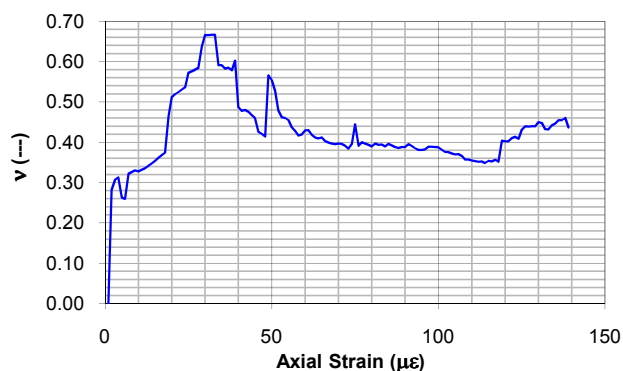
#### Compression Curve



#### Strain Modulus



#### Poisson Ratio



Prepared by:

Jessica Farrugia  
Quality Manager

Approved by:

Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength of Rock materials according to ISRM Suggested Method

Client Name:	J&P AVAX S.A.	Date of sampling:	01/10/2014	Certificate no:	Report027
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test:	10/10/2014	Date of certificate:	10/10/2014
		Type of Corebarrel:	T286	Job no:	J2094
Commisioned by:	Giorgos Rousopoulos	Project:	Onshore & Offshore Geotechnical Investigation	Test reference no:	RCC027
Attn:	Giorgos Rousopoulos			Tested by:	CM
Client Tel No:	306972019434	Location/Town:	Delimara	Drill Type:	Mobile Drill

#### Details of prepared specimens

#### Borehole number:

#### BH G2

		RC	2	RC	3	RC	4
Specimen No:							
Orientation of bedding planes with respect to the test specimen:			Perpendicular		Perpendicular		Perpendicular
Storage condition of specimens:			Sealed		Sealed		Sealed
Depth:			30.9m		33.5m		33.8m
Run No:			n/a		n/a		n/a
Specimen end flat to 0.02mm:			Yes		Yes		Yes
Specimen perpendicular to 0.001 Radian, about 3.5' or 0.05mm/50mm:			Yes		Yes		Yes
Specimen sides smooth and straight to 0.3mm over full length of specimen:			Yes		Yes		Yes
Initial diameter:(Average)	mm		58.4		58.2		58.2
Initial length:(Average)	mm		127		158		124
Initial area:	mm <sup>2</sup>		2674.7		2665.1		2660.1
Initial volume:	mL		339.6		338.3		330.7
Length/diameter ratio:	L/D		<b>2.18</b>		<b>2.72</b>		<b>2.13</b>
Condition as tested:			Slightly Dried		Slightly Dried		Slightly Dried
Mass of specimen	g		710.33		710.43		689.3
Water content (to 0.1%)	%						
Pore Volume	m <sup>3</sup>						
Average	m <sup>3</sup>				0.0000100		
Porosity	%						
Average	%				27.32		
Bulk Density	kg/m <sup>3</sup>		2092		2100		2085
Average	kg/m <sup>3</sup>				2092		
Dry Density	kg/m <sup>3</sup>						
Average	kg/m <sup>3</sup>				#DIV/0!		

#### Test details

		EQ001 No:6 (Range 0 - 150kN)	EQ001 No:6 (Range 0 - 150kN)	EQ001 No:6 (Range 0 - 150kN)
Machine type/ref:				
Rate of loading	N/min	7000	7000	7000
Stress rate:	Mpa/s	0.044	0.044	0.044
Maximum failure load:	kN	39.3	39.2	37.0
Test duration:	sec	334	334	317
Uniaxial compressive strength:	Mpa	14.7	14.7	13.9
Average UCS:				14.4
Mode of failure:		Multiple shear	Multiple shear	Multiple shear
Degree of saturation:				
Comments/Deviations from suggested method:				Nil
Measurment of Uncertainty:				Nil

Prepared by:



Jessica Farrugia  
Quality Manager

Approved by:



Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock033
Client address:	27, Marousiou Pionerasia Street 151-25 Maroussi Greece	Site:	Delimara	Date of certificate:	10 October 2014
Attn:	Sfakianakis Costantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock033
				Tested by:	CM

#### Sample Information

Borehole No: G2  
Depth of Sample: 30.9m  
Date of Sampling: 1/10/2014  
Length / Diameter Ratio: 2.18

#### Test Information

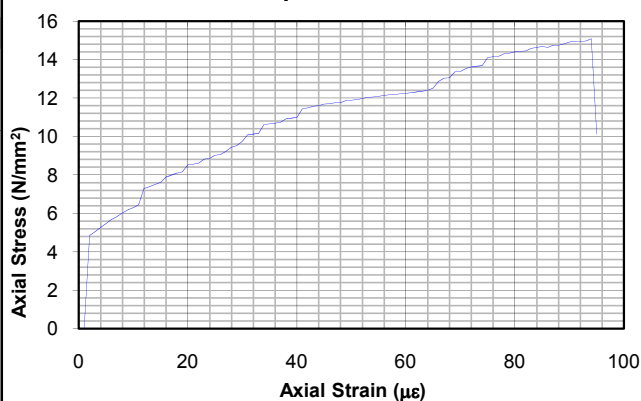
Date of Test: 41922  
Date of Preparation: 41861  
Type of Gauges Used: 30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

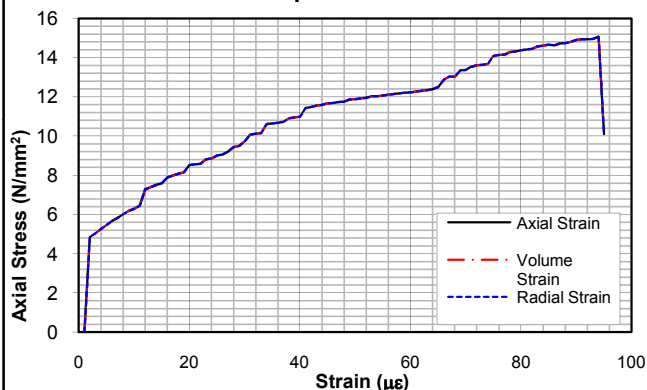
Calculated for axial  $\sigma$ : 7.54 N/mm<sup>2</sup>  
 $E_{\text{medio}}$ : 11.96 kN/mm<sup>2</sup>  
 $E_{\text{tan}}$ : 4.00 kN/mm<sup>2</sup>  
 $E_{\text{sec}}$ : 19.92 kN/mm<sup>2</sup>

Max. strength: 15.07 N/mm<sup>2</sup>  
Poisson at failure: 0.460  
Poisson: 1.175

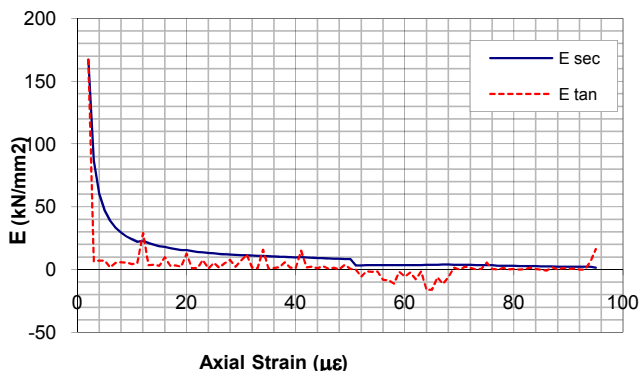
#### Compression Curve



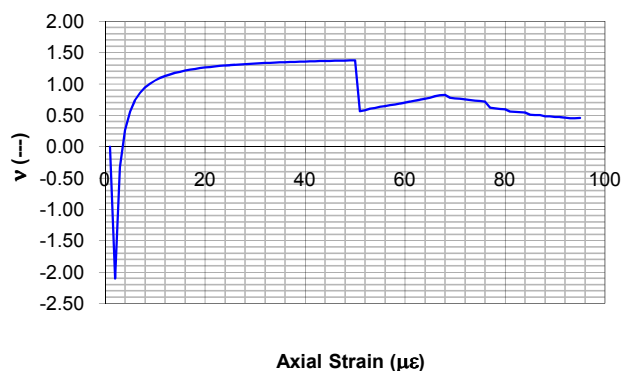
#### Compression Curve



#### Strain Modulus



#### Poisson Ratio



Prepared by:

Jessica Farrugia  
Quality Manager

Approved by:

Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock034
Client address:	27, Marousiou Pionerasia Street 151-25 Maroussi Greece Sardine Street	Site:	Delimara	Date of certificate:	10 October 2014
Attn:	Sfakianakis Costantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock034
				Tested by:	CM

#### Sample Information

Borehole No: G2  
Depth of Sample: 33.5m  
Date of Sampling: 1/10/2014  
Length / Diameter Ratio: 2.72

#### Test Information

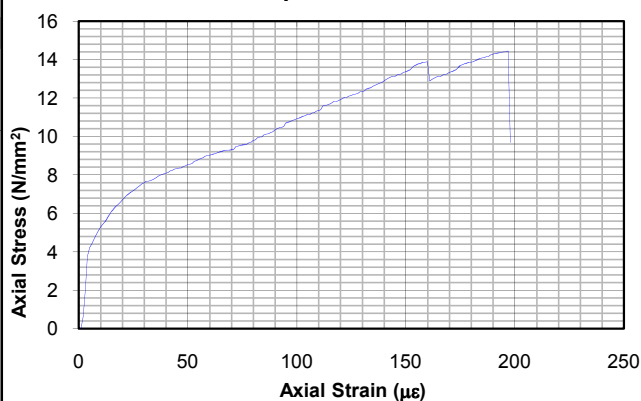
Date of Test: 41922  
Date of Preparation: 41861  
Type of Gauges Used: 30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

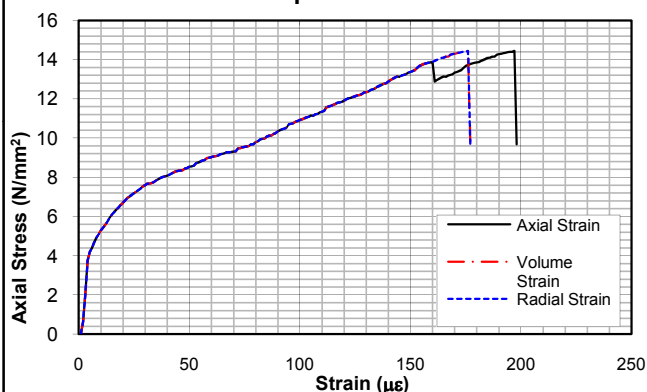
Calculated for axial  $\sigma$ : 7.22 N/mm<sup>2</sup>  
 $E_{\text{medio}}$ : 3.11 kN/mm<sup>2</sup>  
 $E_{\text{tan}}$ : 2.26 kN/mm<sup>2</sup>  
 $E_{\text{sec}}$ : 3.96 kN/mm<sup>2</sup>

Max. strength: 14.44 N/mm<sup>2</sup>  
Poisson at failure: 0.407  
Poisson: 0.499

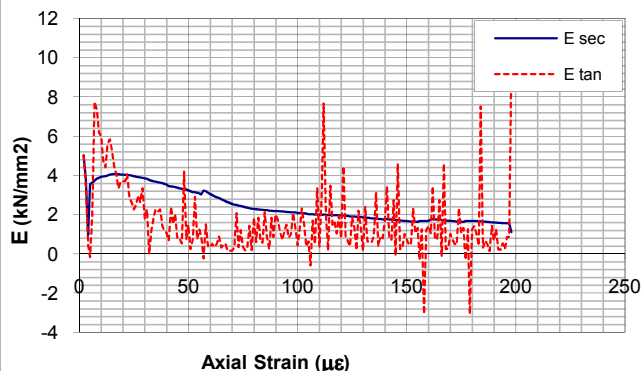
#### Compression Curve



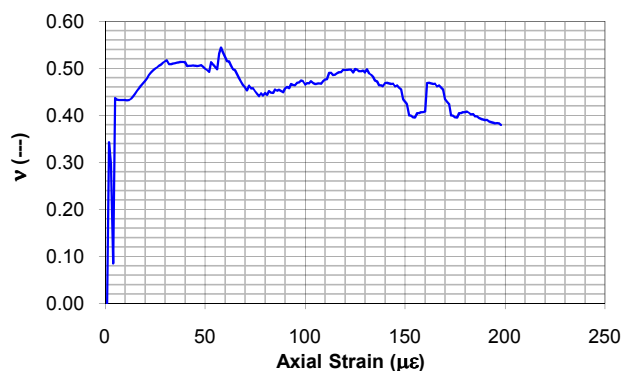
#### Compression Curve



#### Strain Modulus



#### Poisson Ratio



Prepared by:

Jessica Farrugia  
Quality Manager

Approved by:

Chris Magro  
Laboratory Manager

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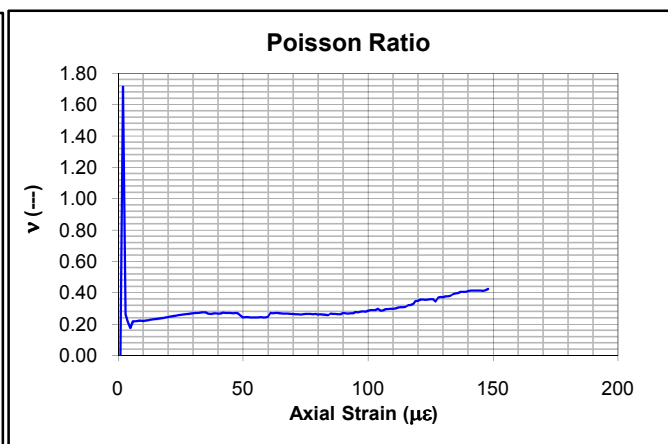
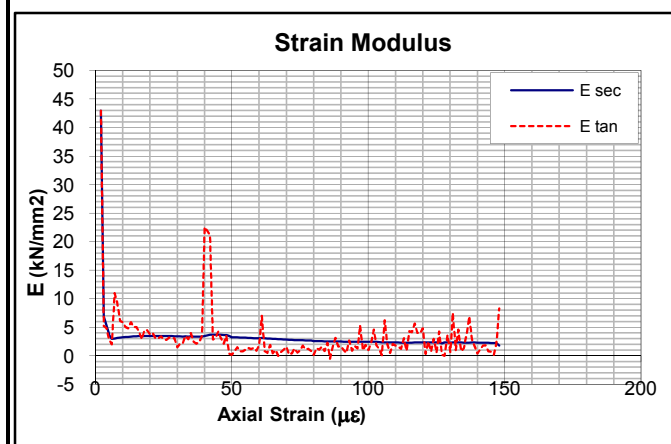
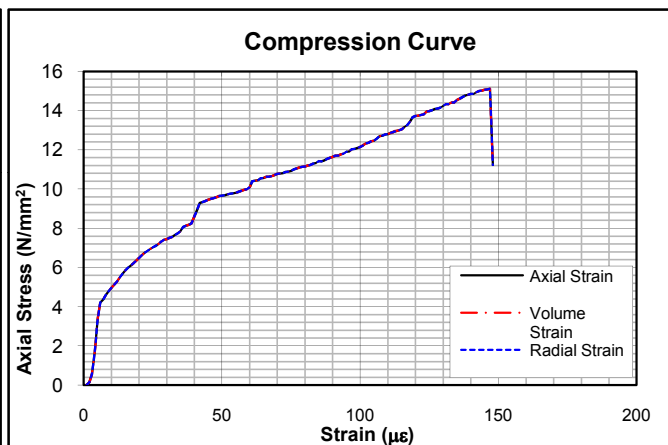
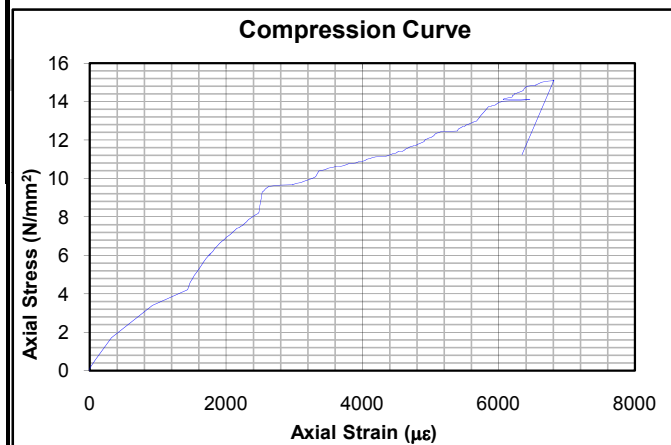
## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock035
Client address:	27, Marousiou Pothiarou Street 151-25 Maroussi Greece Sardine Street	Site:	Delimara	Date of certificate:	10 October 2014
Attn:	Sfakianakis Costantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock035
				Tested by:	CM

Sample Information		Test Information	
Borehole No:	G2	Date of Test:	41922
Depth of Sample:	33.8m	Date of Preparation:	41861
Date of Sampling:	1/10/2014	Type of Gauges Used:	30mm Strain Gauges
Length / Diameter Ratio:	2.14		

Elongation Modulus and Poisson Ratio					
Calculated for axial $\sigma$ :	7.55	N/mm <sup>2</sup>	Max. strength:	15.11	N/mm <sup>2</sup>
E <sub>medio</sub> :	2.76	kN/mm <sup>2</sup>	Poisson at failure:	0.417	
E <sub>tan</sub> :	2.13	kN/mm <sup>2</sup>	Poisson:	0.271	
E <sub>sec</sub> :	3.38	kN/mm <sup>2</sup>			



Prepared by:

Jessica Farrugia  
Quality Manager

Approved by:

Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength of Rock materials according to ISRM Suggested Method

Client Name:	J&P AVAX S.A.	Date of sampling:	04/10/2014	Certificate no:	Report028
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test:	10/10/2014	Date of certificate:	10/10/2014
		Type of Corebarrel:	T286	Job no:	J2094
Commisioned by:	Giorgos Rousopoulos	Project:	Onshore & Offshore Geotechnical Investigation	Test reference no:	RCC028
Attn:	Giorgos Rousopoulos			Tested by:	CM
Client Tel No:	306972019434	Location/Town:	Delimara	Drill Type:	Mobile Drill

#### Details of prepared specimens

#### Borehole number:

#### BH G3

		RC	2	RC	3	RC	4	RC	5
Specimen No:									
Orientation of bedding planes with respect to the test specimen:			Perpendicular		Perpendicular		Perpendicular		Perpendicular
Storage condition of specimens:			Sealed		Sealed		Sealed		Sealed
Depth:			16.35m		17.40m		20.35m		25.80m
Run No:			n/a		n/a		n/a		n/a
Specimen end flat to 0.02mm:			Yes		Yes		Yes		Yes
Specimen perpendicular to 0.001 Radian, about 3.5' or 0.05mm/50mm:			Yes		Yes		Yes		Yes
Specimen sides smooth and straight to 0.3mm over full length of specimen:			Yes		Yes		Yes		Yes
Initial diameter:(Average)	mm		58.2		53.2		58.3		58.3
Initial length:(Average)	mm		128		128		110		123
Initial area:	mm <sup>2</sup>		2664.9		2226.2		2671.8		2665.7
Initial volume:	mL		340.6		284.5		293.8		328.7
Length/diameter ratio:	L/D		<b>2.19</b>		<b>2.41</b>		<b>1.89</b>		<b>2.11</b>
Condition as tested:			Slightly Dried		Slightly Dried		Slightly Dried		Slightly Dried
Mass of specimen	g		672.24		561.53		599.12		670.29
Water content (to 0.1%)	%								
Pore Volume	m <sup>3</sup>								
Average	m <sup>3</sup>				0.0000125				
Porosity	%								
Average	%				33.65				
Bulk Density	kg/m <sup>3</sup>		1974		1974		2039		2039
Average	kg/m <sup>3</sup>				2007				
Dry Density	kg/m <sup>3</sup>								
Average	kg/m <sup>3</sup>				#DIV/0!				

#### Test details

		EQ001 No:6 (Range 0 - 150kN)	EQ001 No:6 (Range 0 - 150kN)	EQ001 No:6 (Range 0 - 150kN)	EQ001 No:6 (Range 0 - 150kN)
Machine type/ref:					
Rate of loading	N/min	3000	3000	7000	7000
Stress rate:	Mpa/s	0.019	0.022	0.044	0.044
Maximum failure load:	kN	14.8	10.5	26.9	38.3
Test duration:	sec	280	220	231	326
Uniaxial compressive strength:	Mpa	5.6	4.7	10.1	14.4
Average UCS:				8.7	
Mode of failure:		Multiple shear	Axial cleavage	Multiple shear	Multiple shear
Degree of saturation:					
Comments/Deviations from suggested method:				Nil	
Measurment of Uncertainty:				Nil	

Prepared by:



Jessica Farrugia  
Quality Manager

Approved by:



Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock036
Client address:	27, Marousiou P.O. Box Street 151-25 Maroussi Greece Sardine Street	Site:	Delimara	Date of certificate:	10 October 2014
Attn:	Sfakianakis Costantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock036
				Tested by:	CM

#### Sample Information

Borehole No: G3  
Depth of Sample: 13.75m  
Date of Sampling: 4/10/2014  
Length / Diameter Ratio: 2.22

#### Test Information

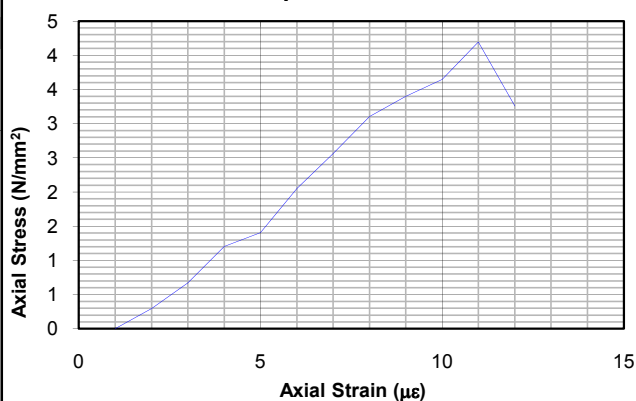
Date of Test: 41922  
Date of Preparation: 41861  
Type of Gauges Used: 30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

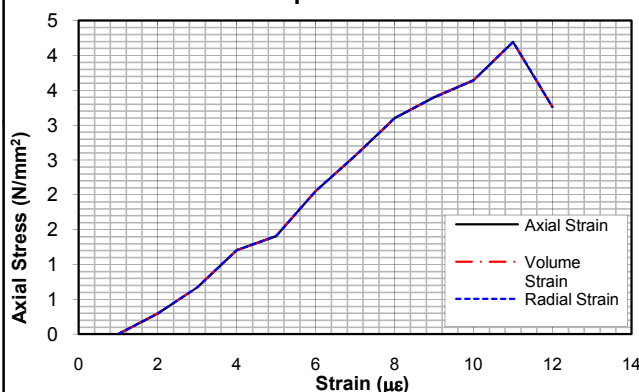
Calculated for axial  $\sigma$ : 2.10 N/mm<sup>2</sup>  
 $E_{\text{medio}}$ : 1.79 kN/mm<sup>2</sup>  
 $E_{\text{tan}}$ : 2.00 kN/mm<sup>2</sup>  
 $E_{\text{sec}}$ : 1.57 kN/mm<sup>2</sup>

Max. strength: 4.19 N/mm<sup>2</sup>  
Poisson at failure: 1.041  
Poisson: 0.798

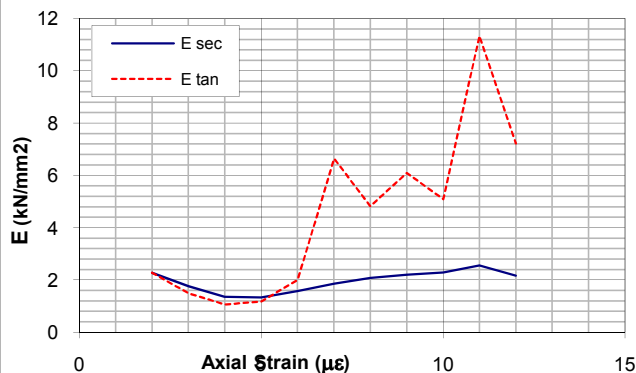
#### Compression Curve



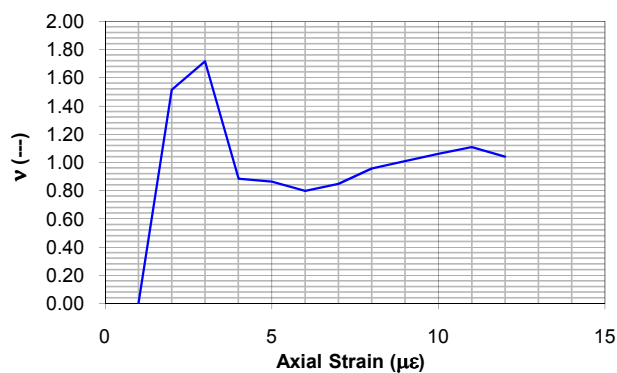
#### Compression Curve



#### Strain Modulus



#### Poisson Ratio



Prepared by:

Jessica Farrugia  
Quality Manager

Approved by:

Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock037
Client address:	27, Marousiou Pothiarou Street 151-25 Maroussi Greece Sardine Street	Site:	Delimara	Date of certificate:	10 October 2014
Attn:	Sfakianakis Costantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock037
				Tested by:	CM

#### Sample Information

Borehole No: G3  
Depth of Sample: 16.35m  
Date of Sampling: 4/10/2014  
Length / Diameter Ratio: 2.19

#### Test Information

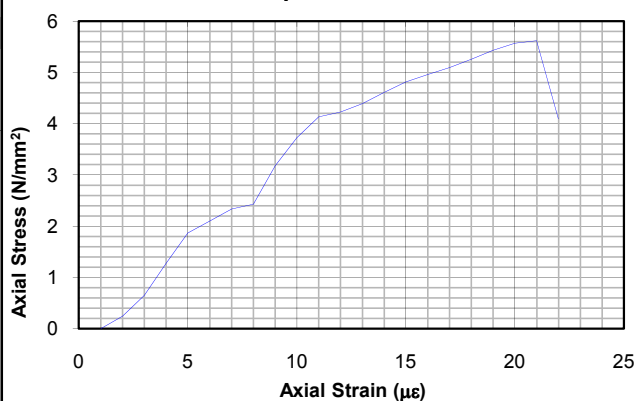
Date of Test: 41922  
Date of Preparation: 41861  
Type of Gauges Used: 30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

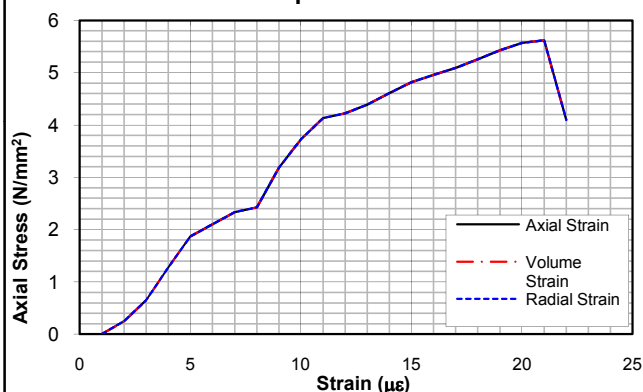
Calculated for axial  $\sigma$ : 2.81 N/mm<sup>2</sup>  
 $E_{\text{medio}}$ : 1.23 kN/mm<sup>2</sup>  
 $E_{\text{tan}}$ : 0.83 kN/mm<sup>2</sup>  
 $E_{\text{sec}}$ : 1.63 kN/mm<sup>2</sup>

Max. strength: 5.62 N/mm<sup>2</sup>  
Poisson at failure: 4.714  
Poisson: 0.956

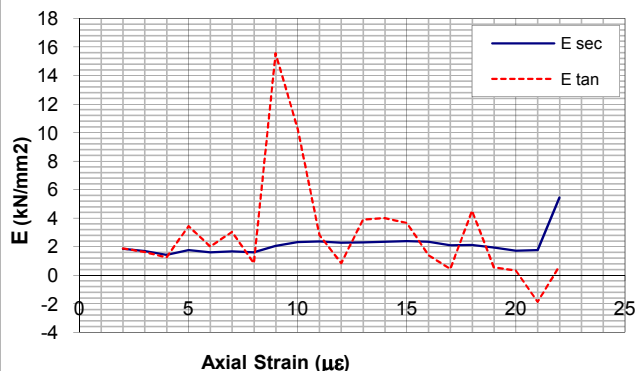
#### Compression Curve



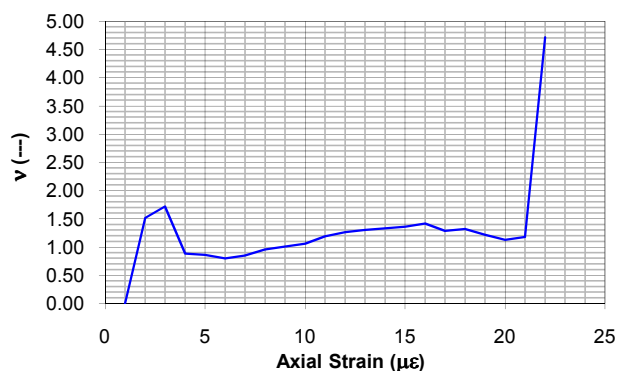
#### Compression Curve



#### Strain Modulus



#### Poisson Ratio



Prepared by:

Jessica Farrugia  
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Chris Magro  
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### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock038
Client address:	27, Marousiou Pionerasia Street 151-25 Maroussi Greece	Site:	Delimara	Date of certificate:	10 October 2014
Attn:	Sfakianakis Costantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock038
				Tested by:	CM

#### Sample Information

Borehole No: G3  
Depth of Sample: 17.40m  
Date of Sampling: 4/10/2014  
Length / Diameter Ratio: 2.41

#### Test Information

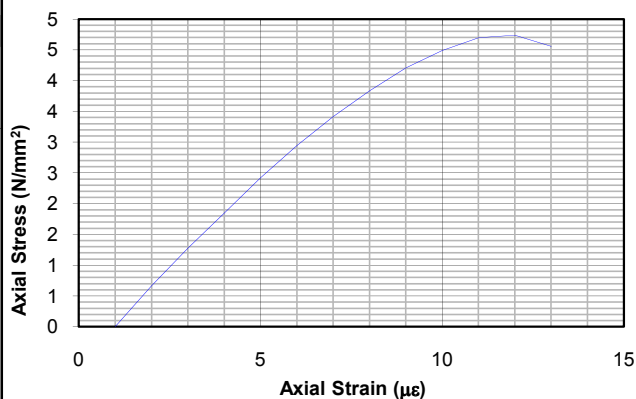
Date of Test: 41922  
Date of Preparation: 41861  
Type of Gauges Used: 30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

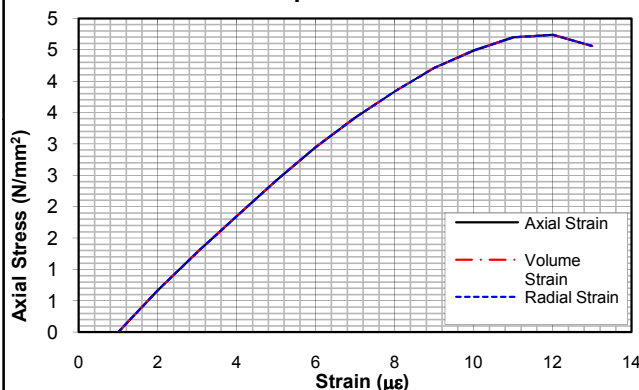
Calculated for axial  $\sigma$ : 2.37 N/mm<sup>2</sup>  
 $E_{\text{medio}}$ : 2.14 kN/mm<sup>2</sup>  
 $E_{\text{tan}}$ : 3.01 kN/mm<sup>2</sup>  
 $E_{\text{sec}}$ : 1.27 kN/mm<sup>2</sup>

Max. strength: 4.74 N/mm<sup>2</sup>  
Poisson at failure: 0.510  
Poisson: 0.220

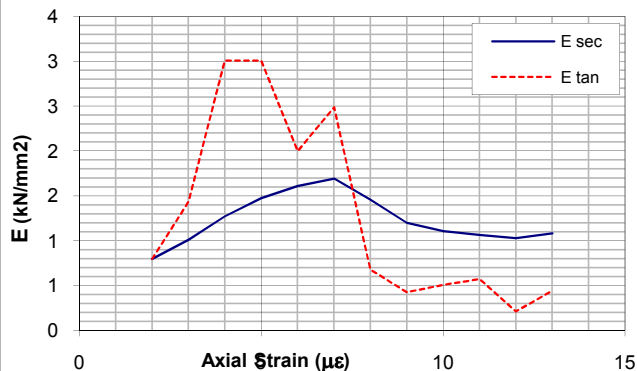
#### Compression Curve



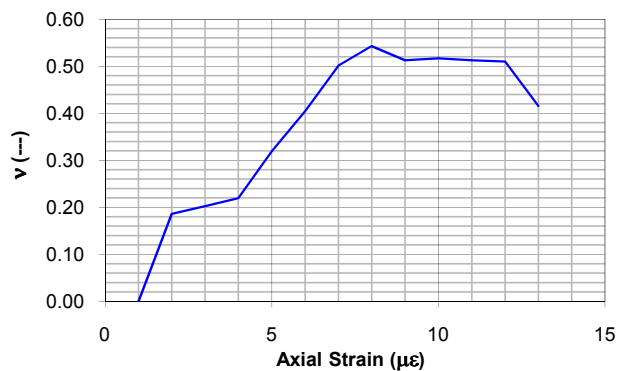
#### Compression Curve



#### Strain Modulus



#### Poisson Ratio



Prepared by:

Jessica Farrugia  
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Approved by:

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### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock039
Client address:	27, Marousiou Pionerasia Street 151-25 Maroussi Greece Sardine Street	Site:	Delimara	Date of certificate:	10 October 2014
Attn:	Sfakianakis Costantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock039
				Tested by:	CM

#### Sample Information

Borehole No: G3  
Depth of Sample: 20.35m  
Date of Sampling: 4/10/2014  
Length / Diameter Ratio: 1.89

#### Test Information

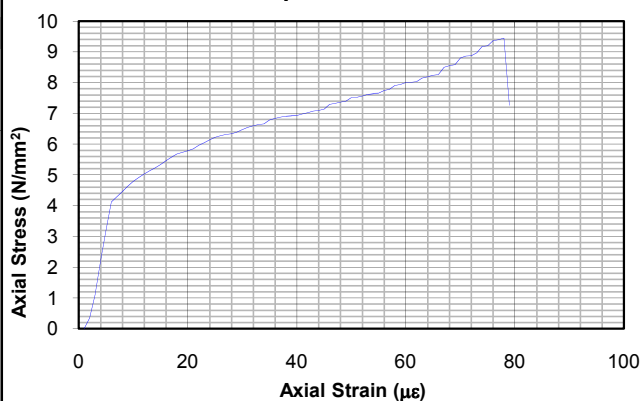
Date of Test: 41922  
Date of Preparation: 41861  
Type of Gauges Used: 30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

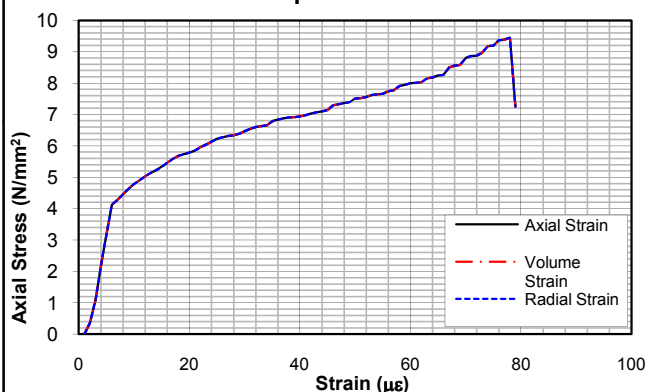
Calculated for axial  $\sigma$ : 4.72 N/mm<sup>2</sup>  
 $E_{\text{medio}}$ : 5.15 kN/mm<sup>2</sup>  
 $E_{\text{tan}}$ : 7.65 kN/mm<sup>2</sup>  
 $E_{\text{sec}}$ : 2.64 kN/mm<sup>2</sup>

Max. strength: 9.45 N/mm<sup>2</sup>  
Poisson at failure: 0.526  
Poisson: 0.550

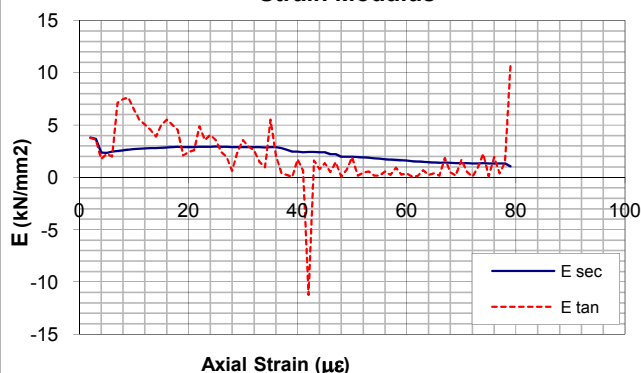
#### Compression Curve



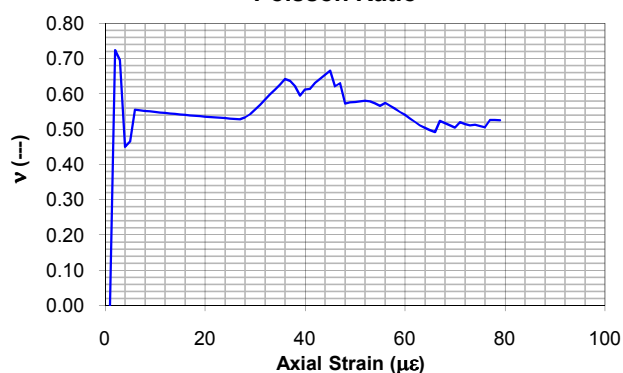
#### Compression Curve



#### Strain Modulus



#### Poisson Ratio



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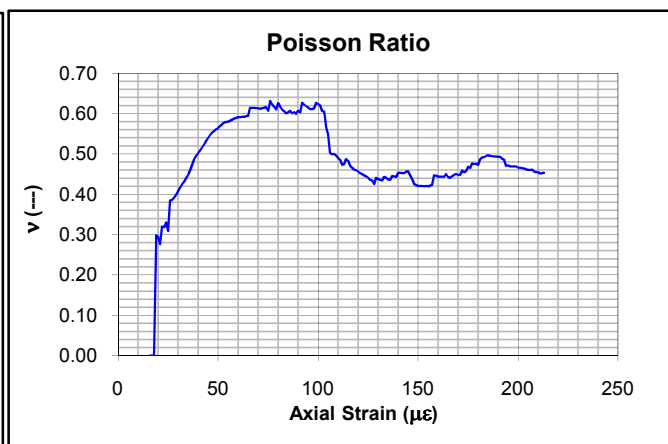
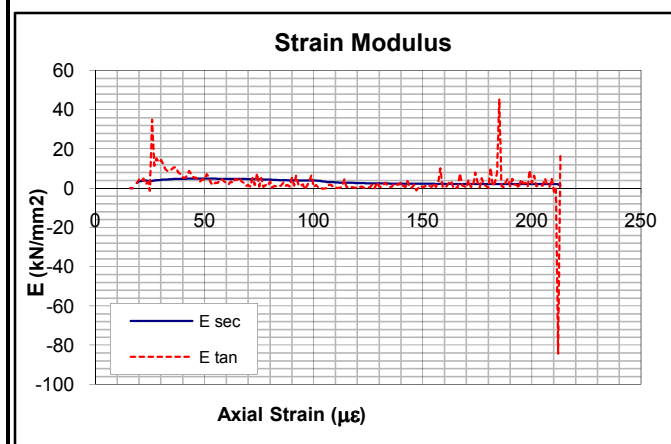
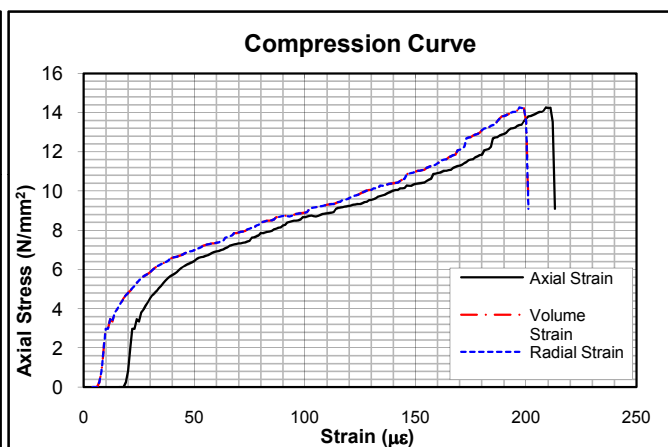
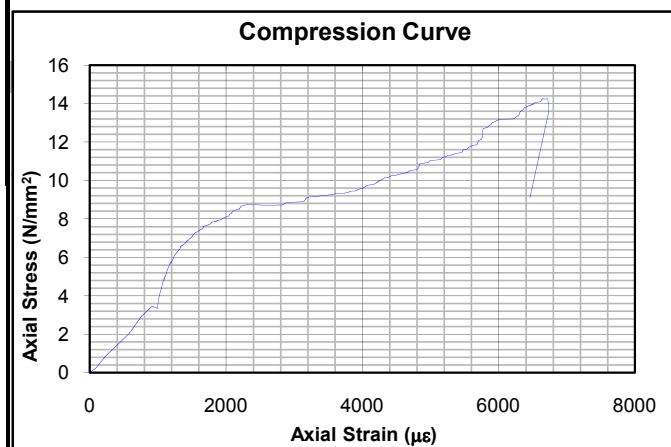
## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock040
Client address:	27, Marousiou P.O. Box Street 151-25 Maroussi Greece Sardine Street	Site:	Delimara	Date of certificate:	10 October 2014
Attn:	Sfakianakis Costantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock040
				Tested by:	CM

Sample Information	Test Information
Borehole No: G3	Date of Test: 41922
Depth of Sample: 25.80m	Date of Preparation: 41861
Date of Sampling: 4/10/2014	Type of Gauges Used: 30mm Strain Gauges
Length / Diameter Ratio: 2.12	

Elongation Modulus and Poisson Ratio	
Calculated for axial $\sigma$ : 7.13 N/mm <sup>2</sup>	Max. strength: 14.27 N/mm <sup>2</sup>
$E_{medio}$ : 4.67 kN/mm <sup>2</sup>	Poisson at failure: 0.476
$E_{tan}$ : 4.62 kN/mm <sup>2</sup>	Poisson: 0.593
$E_{sec}$ : 4.72 kN/mm <sup>2</sup>	



Prepared by:

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength of Rock materials according to ISRM Suggested Method

Client Name:	J&P AVAX S.A.	Date of sampling:	29/09/2014	Certificate no:	Report009
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test:	02/10/2014	Date of certificate:	03/10/2014
		Type of Corebarrel:	T286	Job no:	J2094
Commisioned by:	Giorgos Rousopoulos	Project:	Onshore & Offshore Geotechnical Investigation	Test reference no:	RCC009
Attn:	Giorgos Rousopoulos			Tested by:	LS
Client Tel No:	306972019434	Location/Town:	Delimara	Drill Type:	T44

#### Details of prepared specimens

#### Borehole number:

#### BH G4

		RC	1	RC	2	RC	3	RC	4
Specimen No:									
Orientation of bedding planes with respect to the test specimen:			Perpendicular		Perpendicular		Perpendicular		Perpendicular
Storage condition of specimens:			Air Sealed		Air Sealed		Air Sealed		Air Sealed
Depth:			8.4 - 9m		11.6m		15.4 - 15.9m		19.1m
Run No:			n/a		n/a		n/a		n/a
Specimen end flat to 0.02mm:			Yes		Yes		Yes		Yes
Specimen perpendicular to 0.001 Radian, about 3.5' or 0.05mm/50mm:			Yes		Yes		Yes		Yes
Specimen sides smooth and straight to 0.3mm over full length of specimen:			Yes		Yes		Yes		Yes
Initial diameter:(Average)	mm		58.3		58.3		58.7		57.7
Initial length:(Average)	mm		129		128		126		126
Initial area:	mm <sup>2</sup>		2671.2		2668.8		2706.9		2616.8
Initial volume:	mL		344.8		344.5		341.9		329.8
Length/diameter ratio:	L/D		<b>2.22</b>		<b>2.19</b>		<b>2.15</b>		<b>2.17</b>
Condition as tested:			Slightly Dried		Slightly Dried		Slightly Dried		Slightly Dried
Mass of specimen	g		736.8		746.27		726.83		735.4
Water content (to 0.1%)	%		13.8		13.8		16.5		11.2
Pore Volume	m <sup>3</sup>								
Average	m <sup>3</sup>					0.016			
Porosity	%								
Average	%					34.4			
Bulk Density	kg/m <sup>3</sup>		2137		2167		2126		2230
Average	kg/m <sup>3</sup>					2165			
Dry Density	kg/m <sup>3</sup>		1842		1867		1774		1981
Average	kg/m <sup>3</sup>					1866			

#### Test details

		EQ001 No:6 (Range 0 - 150kN)	EQ001 No:6 (Range 0 - 150kN)	EQ001 No:6 (Range 0 - 150kN)	EQ001 No:6 (Range 0 - 150kN)
Machine type/ref:					
Rate of loading	N/min	3000	5000	5000	5000
Stress rate:	Mpa/s	0.019	0.031	0.031	0.032
Maximum failure load:	kN	21.5	35.8	25.5	41.2
Test duration:	sec	420	432	312	492
Uniaxial compressive strength:	Mpa	8.0	13.4	9.4	15.7
Average UCS:				11.7	
Mode of failure:		Multiple shear	Multiple shear	Multiple shear	Multiple shear
Degree of saturation:		100.0	100.0	100.0	100.0

Comments/Deviations from suggested method:

Nil

Measurment of Uncertainty:

Nil

Prepared by:



Jessica Farrugia  
Quality Manager

Approved by:



Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength of Rock materials according to ISRM Suggested Method

Client Name:	J&P AVAX S.A.	Date of sampling:	29/09/2014	Certificate no:	Report011
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test:	02/10/2014	Date of certificate:	03/10/2014
		Type of Corebarrel:	T286	Job no:	J2094
Commisioned by:	Giorgos Rousopoulos	Project:	Onshore & Offshore Geotechnical Investigation	Test reference no:	RCC011
Attn:	Giorgos Rousopoulos			Tested by:	LS
Client Tel No:	306972019434	Location/Town:	Delimara	Drill Type:	T44

#### Details of prepared specimens

#### Borehole number:

#### BH G4

Specimen No:	RC	5	
Orientation of bedding planes with respect to the test specimen:		Perpendicular	
Storage condition of specimens:		Sealed	
Depth:		22.1m	
Run No:		n/a	
Specimen end flat to 0.02mm:		Yes	
Specimen perpendicular to 0.001 Radian, about 3.5' or 0.05mm/50mm:		Yes	
Specimen sides smooth and straight to 0.3mm over full length of specimen:		Yes	
Initial diameter:(Average)	mm	58.0	
Initial length:(Average)	mm	126	
Initial area:	mm <sup>2</sup>	2644.1	
Initial volume:	mL	332.3	
Length/diameter ratio:	L/D	2.17	
Condition as tested:		Slightly Dried	
Mass of specimen	g	717.37	
Water content (to 0.1%)	%	14.0	
Pore Volume	m <sup>3</sup>		
Average	m <sup>3</sup>		0.00001634
Porosity	%		
Average	%		30.38
Bulk Density	kg/m <sup>3</sup>		
Average	kg/m <sup>3</sup>		2158
Dry Density	kg/m <sup>3</sup>		
Average	kg/m <sup>3</sup>		1857

#### Test details

Machine type/ref:	EQ001 No:6 (Range 0 - 150kN)	
Rate of loading	N/min	5000
Stress rate:	Mpa/s	0.032
Maximum failure load:	kN	33.4
Test duration:	sec	396
Uniaxial compressive strength:	Mpa	12.6
Average UCS:		12.6
Mode of failure:		Multiple shear
Degree of saturation:		100.0

Comments/Deviations from suggested method: Nil

Measurment of Uncertainty: Nil

Prepared by:



Jessica Farrugia  
Quality Manager

Approved by:



Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock014
Client address:	27, Marousiou Pionerasia Street 151-25 Maroussi Greece Sardine Street	Site:	Delimara	Date of certificate:	4 October 2014
Attn:	Sfakianakis Costantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock014
				Tested by:	CM

#### Sample Information

Borehole No: G4  
Depth of Sample: 8.50m  
Date of Sampling: 29/9/2014  
Length / Diameter Ratio: 2.21

#### Test Information

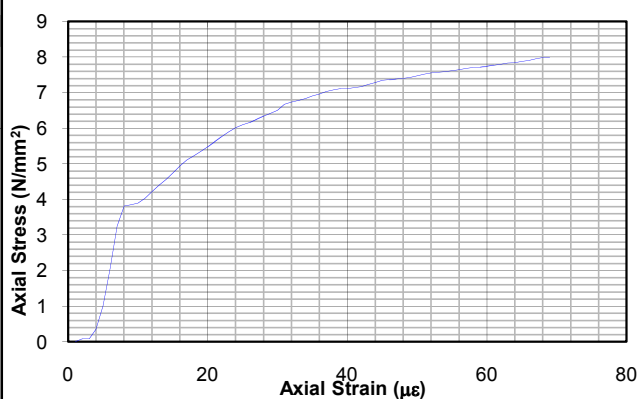
Date of Test: 41708  
Date of Preparation: 41680  
Type of Gauges Used: 30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

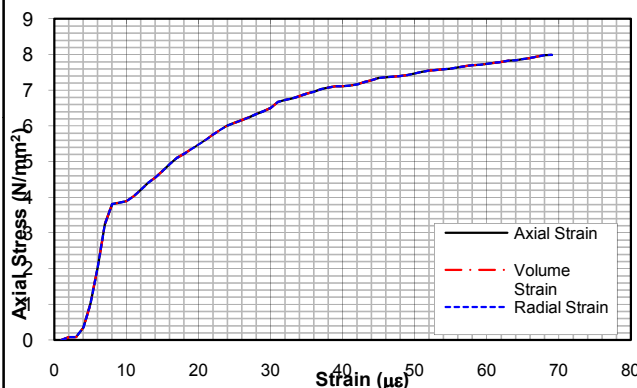
Calculated for axial  $\sigma$ : 4.00 N/mm<sup>2</sup>  
 $E_{\text{medio}}$ : 2.38 kN/mm<sup>2</sup>  
 $E_{\text{tan}}$ : 4.08 kN/mm<sup>2</sup>  
 $E_{\text{sec}}$ : 0.68 kN/mm<sup>2</sup>

Max. strength: 7.99 N/mm<sup>2</sup>  
Poisson at failure: 0.886  
Poisson: 0.365

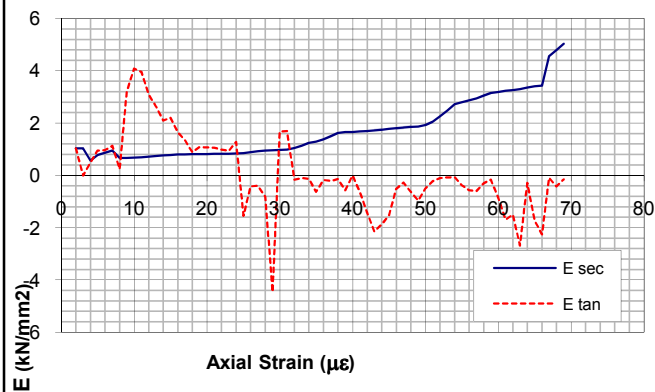
#### Compression Curve



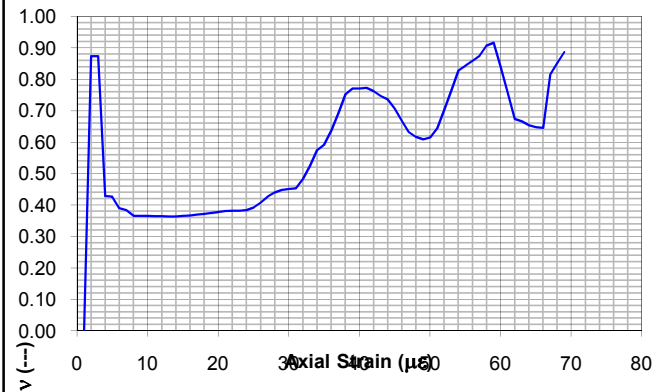
#### Compression Curve



#### Strain Modulus



#### Poisson Ratio



Prepared by:

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock015
Client address:	27, Marousiou Pothiarou Street 151-25 Maroussi Greece Sardine Street	Site:	Delimara	Date of certificate:	4 October 2014
Attn:	Sfakianakis Costantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock015
				Tested by:	CM

#### Sample Information

Borehole No: G4  
Depth of Sample: 11.60m  
Date of Sampling: 29/9/2014  
Length / Diameter Ratio: 2.19

#### Test Information

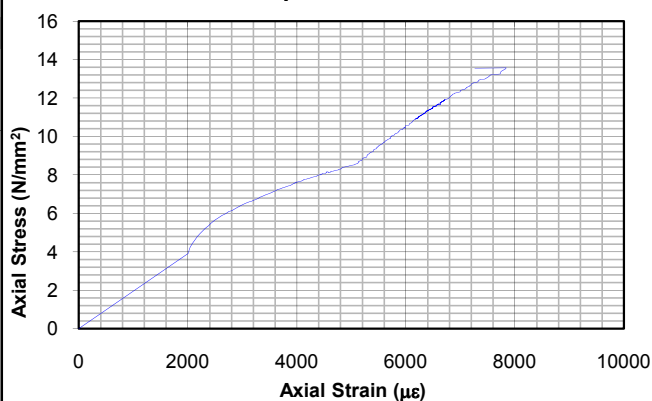
Date of Test: 41708  
Date of Preparation: 41680  
Type of Gauges Used: 30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

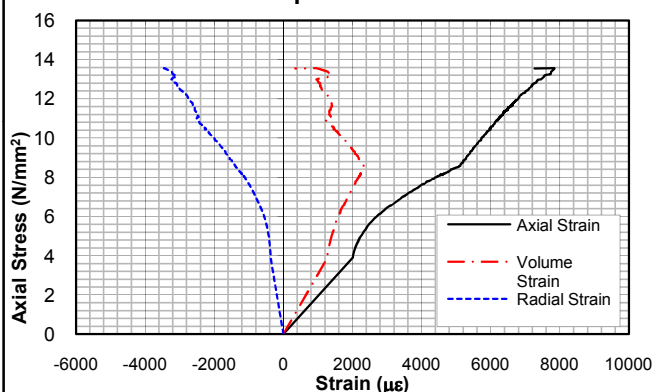
Calculated for axial  $\sigma$ : 6.78 N/mm<sup>2</sup>  
 $E_{\text{medio}}$ : 1.67 kN/mm<sup>2</sup>  
 $E_{\text{tan}}$ : 1.28 kN/mm<sup>2</sup>  
 $E_{\text{sec}}$ : 2.06 kN/mm<sup>2</sup>

Max. strength: 13.56 N/mm<sup>2</sup>  
Poisson at failure: 0.401  
Poisson: 0.226

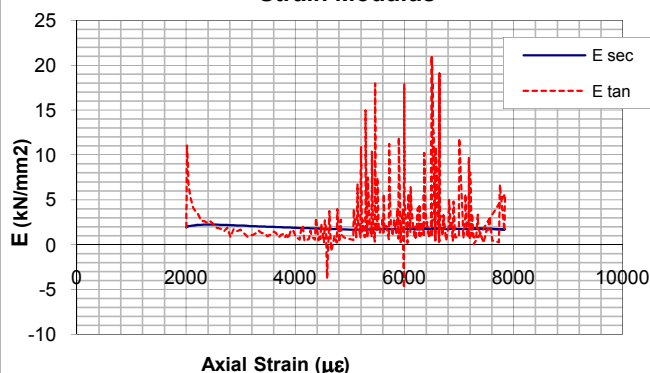
#### Compression Curve



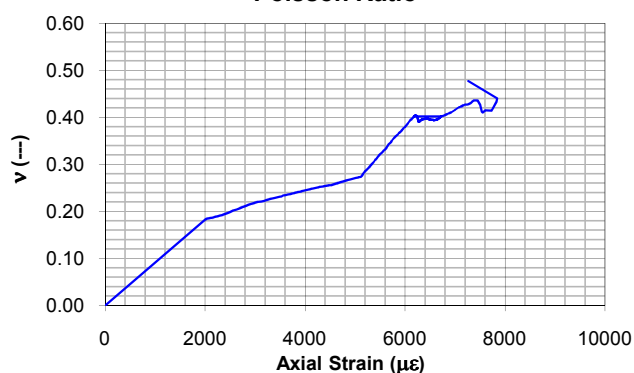
#### Compression Curve



#### Strain Modulus



#### Poisson Ratio



Prepared by:

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock016
Client address:	Street 151-25 Maroussi Greece Sardine Street	Site:	Delimara	Date of certificate:	4 October 2014
Attn:	Sfakianakis Costantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock016
				Tested by:	CM

#### Sample Information

Borehole No: G4  
 Depth of Sample: 15.4-15.9m  
 Date of Sampling: 29/9/2014  
 Length / Diameter Ratio: 2.15

#### Test Information

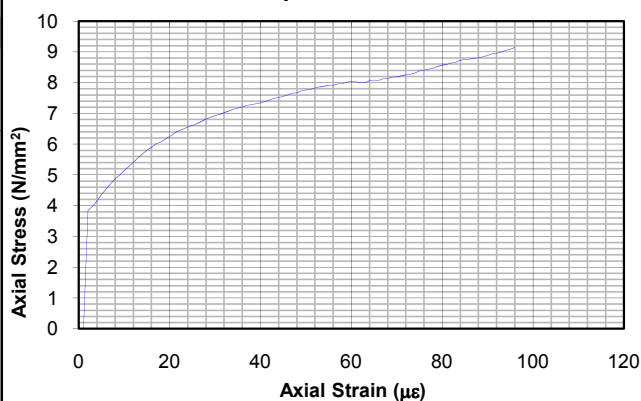
Date of Test: 41708  
 Date of Preparation: 41680  
 Type of Gauges Used: 30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

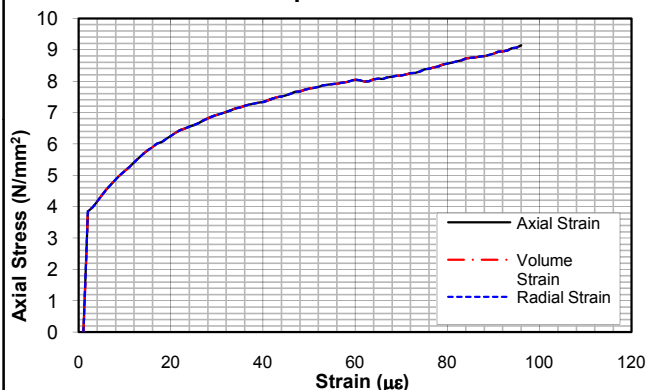
Calculated for axial  $\sigma$ : 4.57 N/mm<sup>2</sup>  
 $E_{\text{medio}}$ : 1.52 kN/mm<sup>2</sup>  
 $E_{\text{tan}}$ : 0.34 kN/mm<sup>2</sup>  
 $E_{\text{sec}}$ : 2.71 kN/mm<sup>2</sup>

Max. strength: 9.14 N/mm<sup>2</sup>  
 Poisson at failure: 0.263  
 Poisson: 0.277

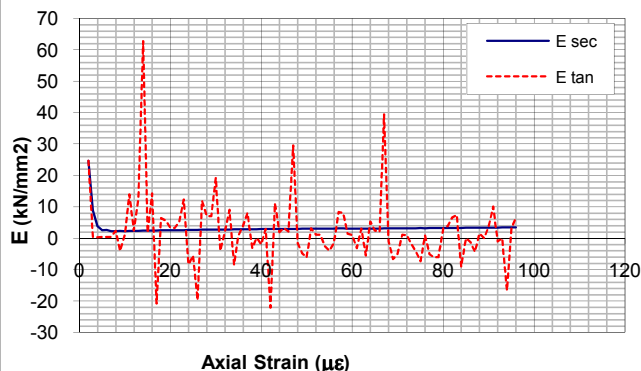
**Compression Curve**



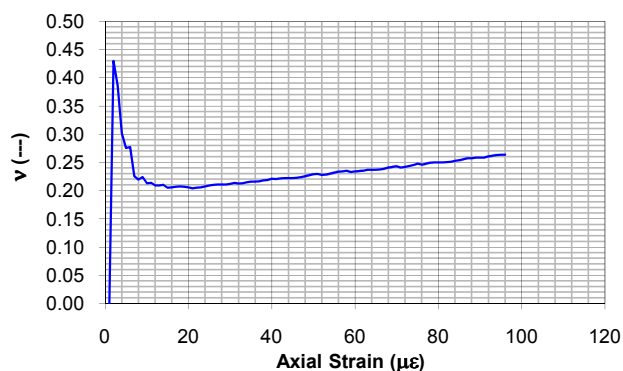
**Compression Curve**



**Strain Modulus**



**Poisson Ratio**



Prepared by:

Jessica Farrugia  
Quality Manager

Approved by:

Chris Magro  
Laboratory Manager

## TEST CERTIFICATE

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation
Client address:	Street 151-25 Maroussi Greece Sardine Street	Site:	Delimara
Attn:	Sfakianakis Costantinos	Drill Type:	T44
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286
		Certificate no:	Rock017
		Date of certificate:	4 October 2014
		Job no:	J2094
		Test reference no:	Rock017
		Tested by:	CM

#### Sample Information

Borehole No: G4  
Depth of Sample: 19.1m  
Date of Sampling: 29/9/2014  
Length / Diameter Ratio: 2.18

#### Test Information

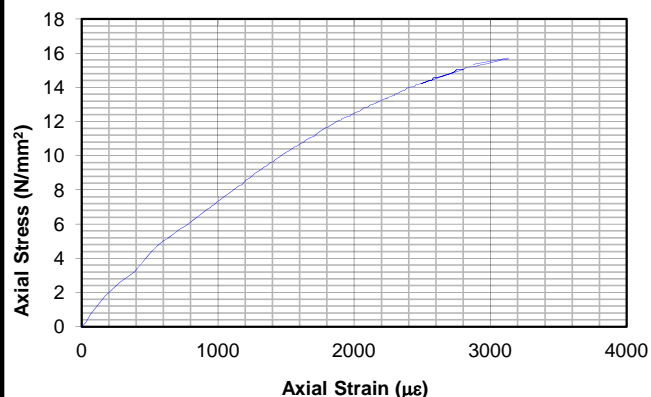
Date of Test: 41708  
Date of Preparation: 41680  
Type of Gauges Used: 30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

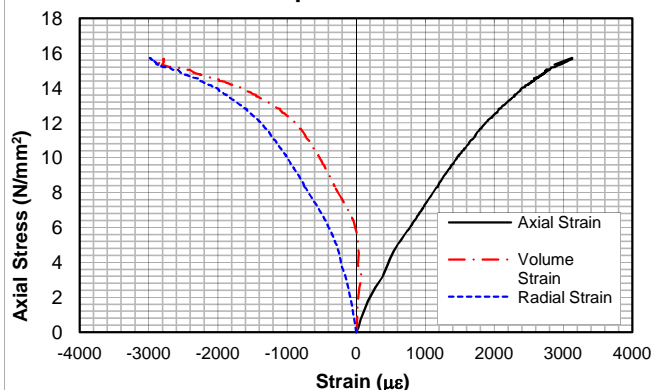
Calculated for axial  $\sigma$ : 7.86 N/mm<sup>2</sup>  
E<sub>medio</sub>: 6.34 kN/mm<sup>2</sup>  
E<sub>tan</sub>: 5.46 kN/mm<sup>2</sup>  
E<sub>sec</sub>: 7.22 kN/mm<sup>2</sup>

Max. strength: 15.73 N/mm<sup>2</sup>  
Poisson at failure: 0.949  
Poisson: 0.607

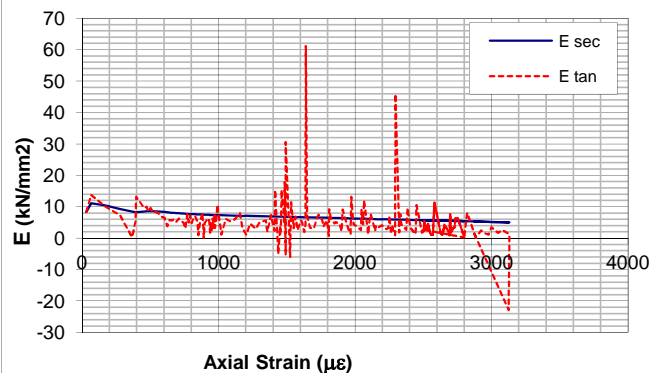
#### Compression Curve



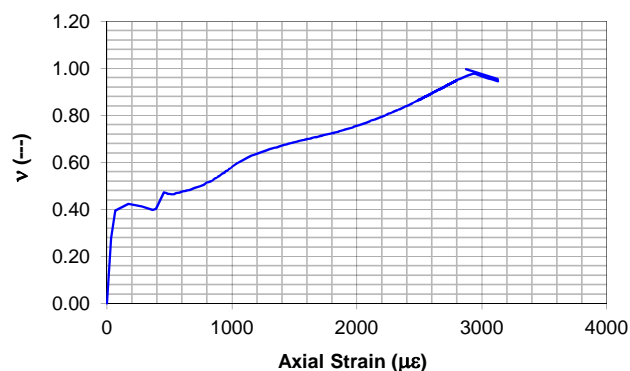
#### Compression Curve



#### Strain Modulus



#### Poisson Ratio



Prepared by:

Jessica Farrugia  
Quality Manager

Approved by:

Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock018
Client address:	27, Marousiou Street Street 151-25 Maroussi Greece Sardine Street	Site:	Delimara	Date of certificate:	4 October 2014
Attn:	Sfakianakis Costantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock018
				Tested by:	CM

#### Sample Information

Borehole No: G4  
Depth of Sample: 22.1m  
Date of Sampling: 29/9/2014  
Length / Diameter Ratio: 2.17

#### Test Information

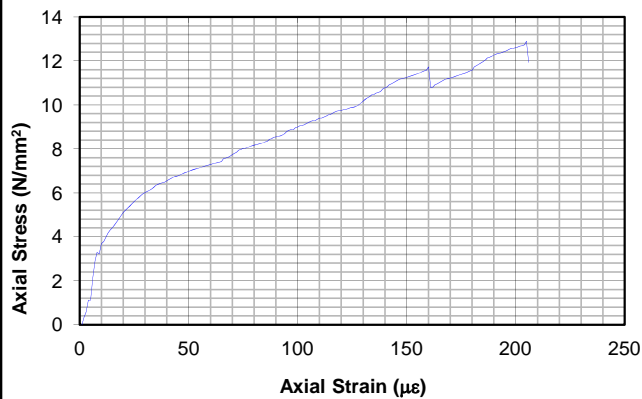
Date of Test: 10-Mar-14  
Date of Preparation: 10-Feb-14  
Type of Gauges Used: 30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

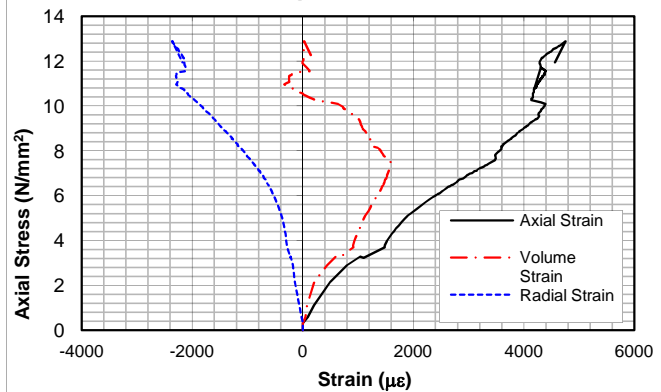
Calculated for axial  $\sigma$ : 6.45 N/mm<sup>2</sup>  
 $E_{\text{medio}}$ : 1.75 kN/mm<sup>2</sup>  
 $E_{\text{tan}}$ : 1.10 kN/mm<sup>2</sup>  
 $E_{\text{sec}}$ : 2.41 kN/mm<sup>2</sup>

Max. strength: 12.89 N/mm<sup>2</sup>  
Poisson at failure: 0.492  
Poisson: 0.229

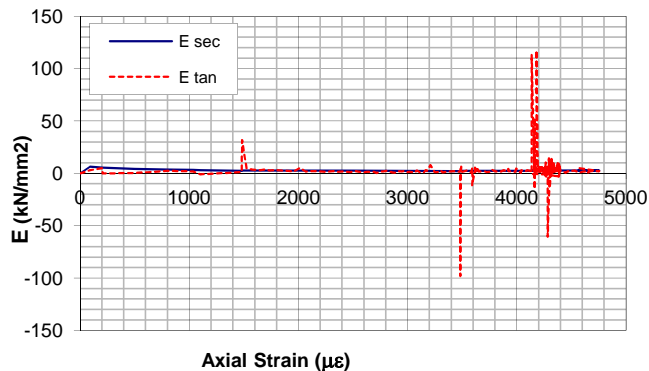
#### Compression Curve



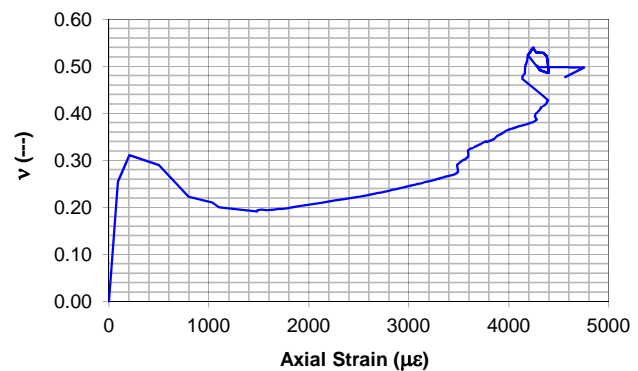
#### Compression Curve



#### Strain Modulus



#### Poisson Ratio



Prepared by:

Jessica Farrugia  
Quality Manager

Approved by:

Chris Magro  
Laboratory Manager

# TEST CERTIFICATE

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength of Rock materials according to ISRM Suggested Method

Client Name:	J&P AVAX S.A.	Date of sampling:	03/10/2014	Certificate no:	Report029
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test:	10/10/2014	Date of certificate:	10/10/2014
		Type of Corebarrel:	T286	Job no:	J2094
Commisioned by:	Giorgos Rousopoulos	Project:	Onshore & Offshore Geotechnical Investigation	Test reference no:	RCC029
Attn:	Giorgos Rousopoulos			Tested by:	CM
Client Tel No:	306972019434	Location/Town:	Delimara	Drill Type:	Mobile Drill

#### Details of prepared specimens

#### Borehole number:

#### BH G5

		RC	2	RC	3	RC	4
Specimen No:							
Orientation of bedding planes with respect to the test specimen:			Perpendicular		Perpendicular		Perpendicular
Storage condition of specimens:			Sealed		Sealed		Sealed
Depth:			29.0m		35.1m		36.2m
Run No:			n/a		n/a		n/a
Specimen end flat to 0.02mm:			Yes		Yes		Yes
Specimen perpendicular to 0.001 Radian, about 3.5' or 0.05mm/50mm:			Yes		Yes		Yes
Specimen sides smooth and straight to 0.3mm over full length of specimen:			Yes		Yes		Yes
Initial diameter:(Average)	mm		58.4		58.4		58.3
Initial length:(Average)	mm		128		128		128
Initial area:	mm <sup>2</sup>		2676.9		2681.9		2673.5
Initial volume:	mL		342.7		343.3		341.2
Length/diameter ratio:	L/D		2.19		2.19		2.19
Condition as tested:			Slightly Dried		Slightly Dried		Slightly Dried
Mass of specimen	g		736.84		711.64		746.99
Water content (to 0.1%)	%						
Pore Volume	m <sup>3</sup>						
Average	m <sup>3</sup>				0.0000105		
Porosity	%						
Average	%				30.84		
Bulk Density	kg/m <sup>3</sup>		2150		2073		2189
Average	kg/m <sup>3</sup>				2138		
Dry Density	kg/m <sup>3</sup>						
Average	kg/m <sup>3</sup>				#DIV/0!		

#### Test details

		EQ001 No:6 (Range 0 - 150kN)	EQ001 No:6 (Range 0 - 150kN)	EQ001 No:6 (Range 0 - 150kN)
Machine type/ref:				
Rate of loading	N/min	7000	7000	7000
Stress rate:	Mpa/s	0.044	0.043	0.044
Maximum failure load:	kN	26.2	42.8	44.2
Test duration:	sec	223	369	377
Uniaxial compressive strength:	Mpa	9.8	16.0	16.5
Average UCS:				14.1
Mode of failure:		Multiple shear	Multiple shear	Multiple shear
Degree of saturation:				
Comments/Deviations from suggested method:				Nil
Measurment of Uncertainty:				Nil

Prepared by:



Jessica Farrugia  
Quality Manager

Approved by:



Chris Magro  
Laboratory Manager

# TEST CERTIFICATE

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock041
Client address:	27, Marousiou P.O. Box 151-25 Maroussi Greece Sardine Street	Site:	Delimara	Date of certificate:	10 October 2014
Attn:	Sfakianakis Costantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock041
				Tested by:	CM

#### Sample Information

Borehole No: G5  
 Depth of Sample: 29.0m  
 Date of Sampling: 3/10/2014  
 Length / Diameter Ratio: 2.19

#### Test Information

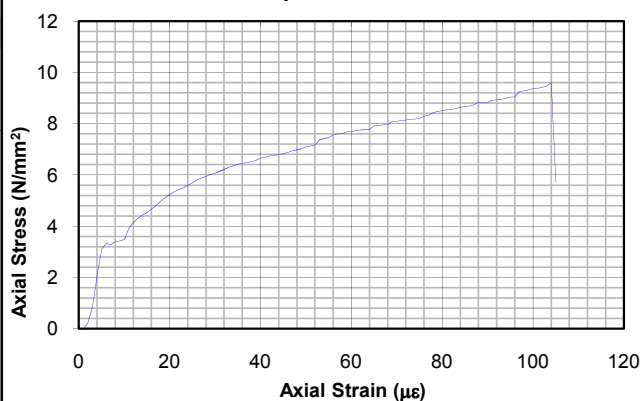
Date of Test: 41922  
 Date of Preparation: 41861  
 Type of Gauges Used: 30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

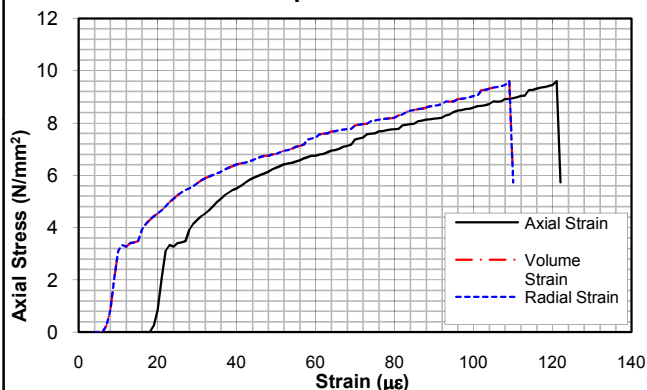
Calculated for axial  $\sigma$ : 4.80 N/mm<sup>2</sup>  
 $E_{\text{medio}}$ : 4.07 kN/mm<sup>2</sup>  
 $E_{\text{tan}}$ : 5.53 kN/mm<sup>2</sup>  
 $E_{\text{sec}}$ : 2.61 kN/mm<sup>2</sup>

Max. strength: 9.59 N/mm<sup>2</sup>  
 Poisson at failure: 0.329  
 Poisson: 0.287

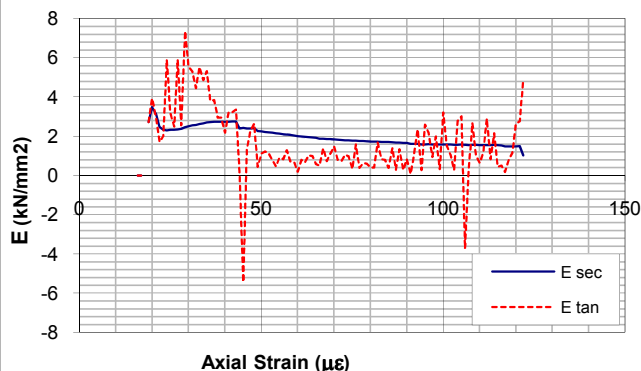
**Compression Curve**



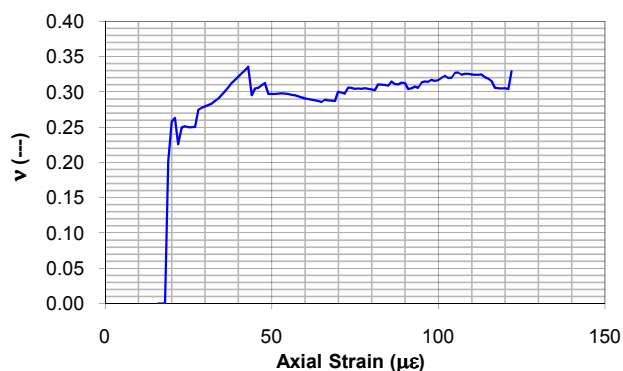
**Compression Curve**



**Strain Modulus**



**Poisson Ratio**



Prepared by:

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock042
Client address:	27, Marousiou Pionerasia Street 151-25 Maroussi Greece	Site:	Delimara	Date of certificate:	10 October 2014
Attn:	Sfakianakis Costantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock042
				Tested by:	CM

#### Sample Information

Borehole No: G5  
Depth of Sample: 30.6m  
Date of Sampling: 3/10/2014  
Length / Diameter Ratio: 2.21

#### Test Information

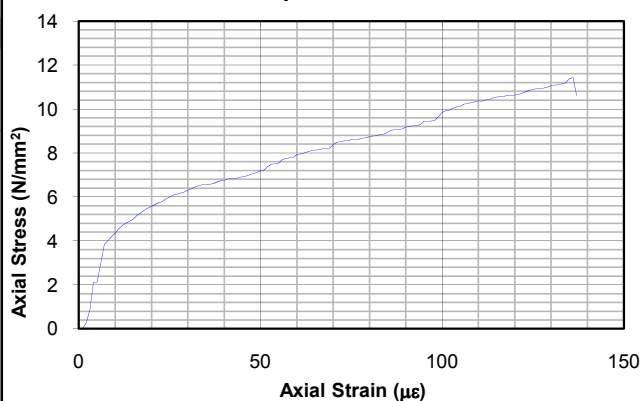
Date of Test: 41922  
Date of Preparation: 41861  
Type of Gauges Used: 30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

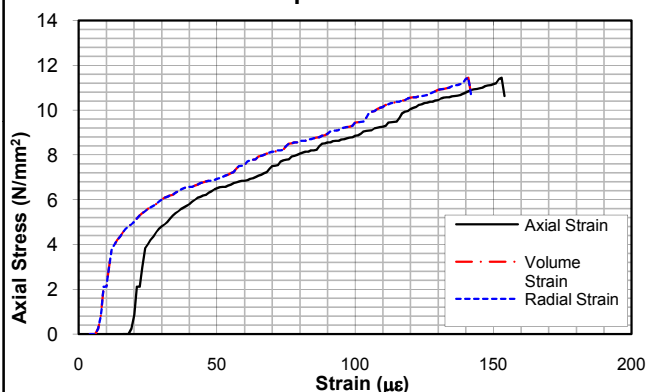
Calculated for axial  $\sigma$ : 5.72 N/mm<sup>2</sup>  
 $E_{\text{medio}}$ : 5.80 kN/mm<sup>2</sup>  
 $E_{\text{tan}}$ : 6.53 kN/mm<sup>2</sup>  
 $E_{\text{sec}}$ : 5.07 kN/mm<sup>2</sup>

Max. strength: 11.43 N/mm<sup>2</sup>  
Poisson at failure: 0.322  
Poisson: 0.412

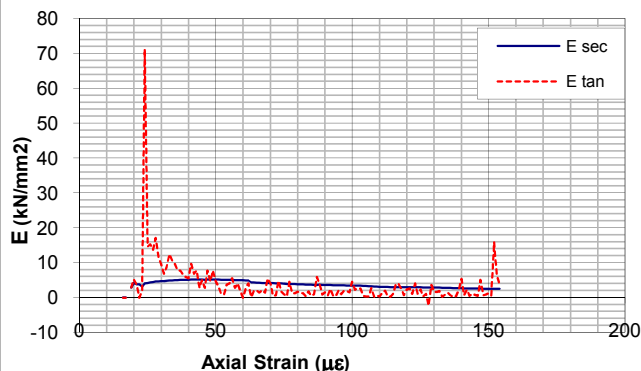
#### Compression Curve



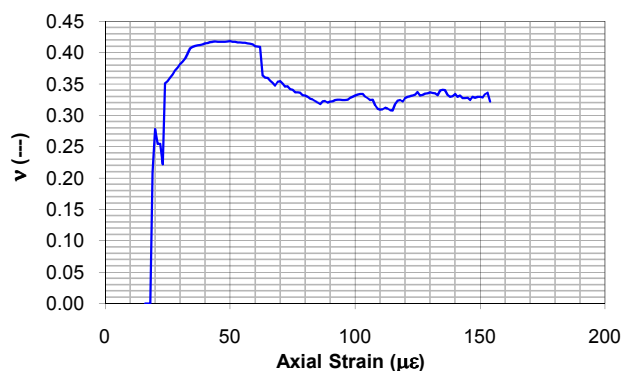
#### Compression Curve



#### Strain Modulus



#### Poisson Ratio



Prepared by:

Jessica Farrugia  
Quality Manager

Approved by:

Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

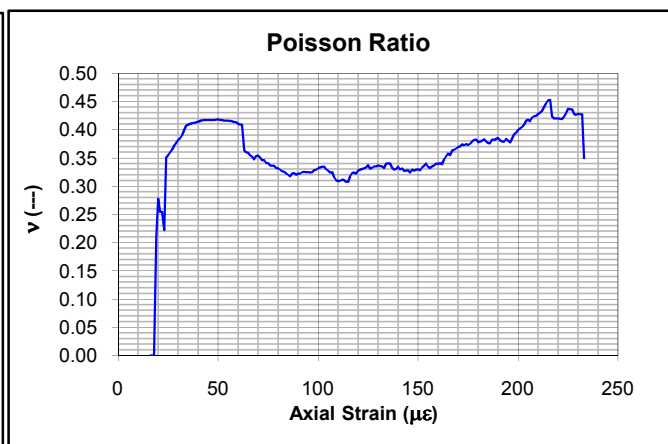
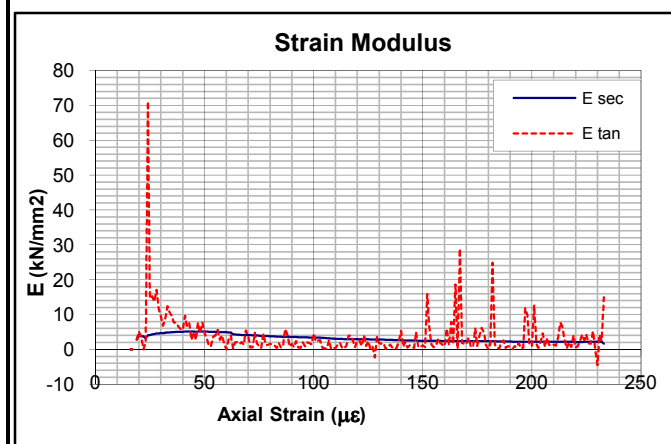
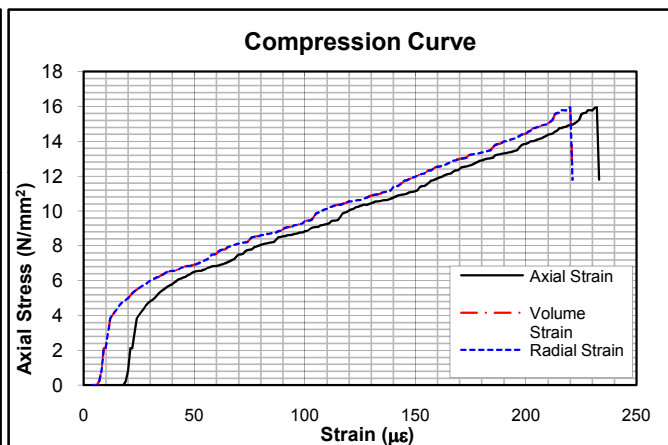
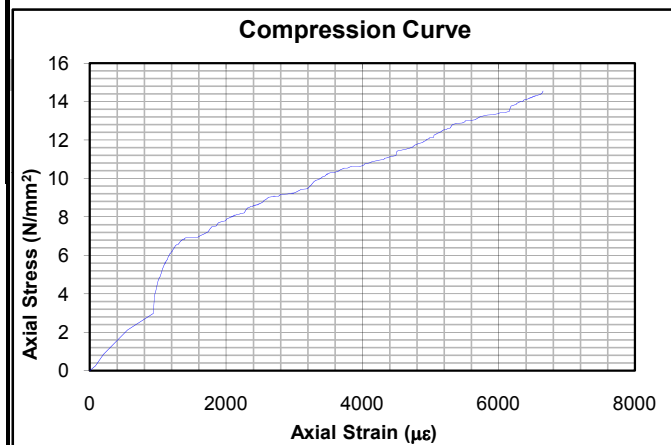
### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock043
Client address:	27, Marousiou Pothos Street 151-25 Maroussi Greece Sardine Street	Site:	Delimara	Date of certificate:	10 October 2014
Attn:	Sfakianakis Costantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock043
				Tested by:	CM

Sample Information	Test Information
Borehole No:	G5
Depth of Sample:	35.1
Date of Sampling:	3/10/2014
Length / Diameter Ratio:	2.19
	Date of Test:
	41922
	Date of Preparation:
	41861
	Type of Gauges Used:
	30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

Calculated for axial $\sigma$ :	7.97	N/mm <sup>2</sup>	Max. strength:	15.94	N/mm <sup>2</sup>
$E_{\text{medio}}$ :	2.58	kN/mm <sup>2</sup>	Poisson at failure:	0.379	
$E_{\text{tan}}$ :	1.27	kN/mm <sup>2</sup>	Poisson:	0.336	
$E_{\text{sec}}$ :	3.89	kN/mm <sup>2</sup>			



Prepared by:

Jessica Farrugia  
Quality Manager

Approved by:

Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock044
Client address:	27, Marousiou Pothiarou Street 151-25 Maroussi Greece Sardine Street	Site:	Delimara	Date of certificate:	10 October 2014
Attn:	Sfakianakis Constantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock044
				Tested by:	CM

#### Sample Information

Borehole No: G5  
Depth of Sample: 36.2  
Date of Sampling: 3/10/2014  
Length / Diameter Ratio: 2.19

#### Test Information

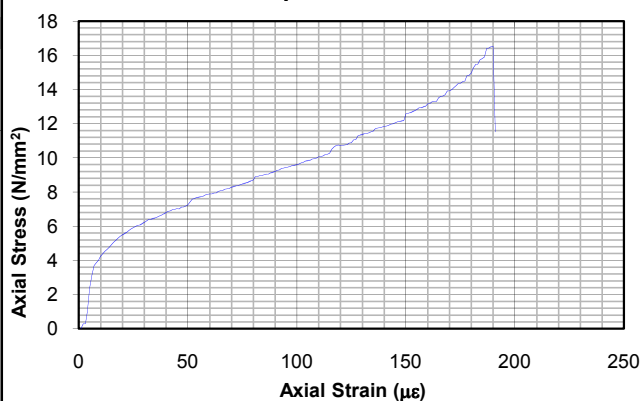
Date of Test: 41922  
Date of Preparation: 41861  
Type of Gauges Used: 30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

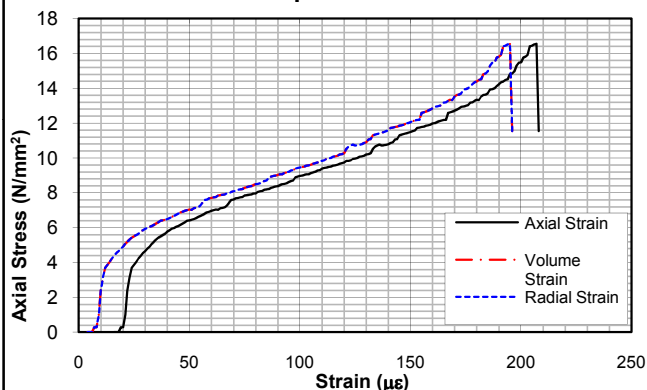
Calculated for axial  $\sigma$ : 8.27 N/mm<sup>2</sup>  
 $E_{\text{medio}}$ : 2.16 kN/mm<sup>2</sup>  
 $E_{\text{tan}}$ : 0.35 kN/mm<sup>2</sup>  
 $E_{\text{sec}}$ : 3.97 kN/mm<sup>2</sup>

Max. strength: 16.54 N/mm<sup>2</sup>  
Poisson at failure: 0.516  
Poisson: 0.497

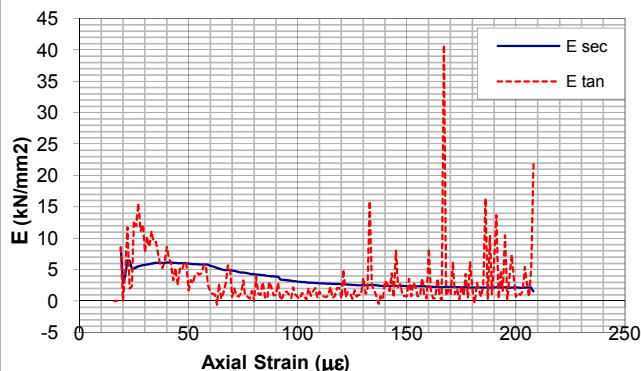
#### Compression Curve



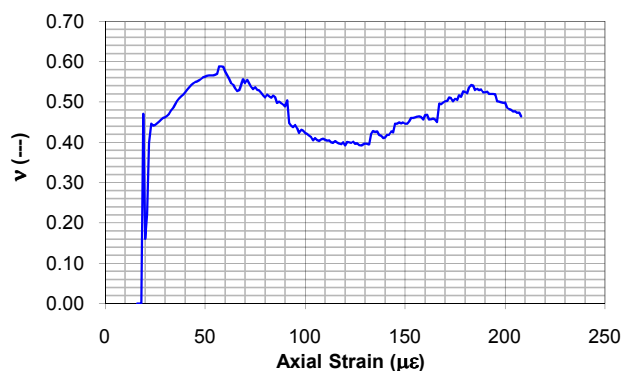
#### Compression Curve



#### Strain Modulus



#### Poisson Ratio



Prepared by:

Jessica Farrugia  
Quality Manager

Approved by:

Chris Magro  
Laboratory Manager

## TEST CERTIFICATE

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength of Rock materials according to ISRM Suggested Method

Client Name:	J&P AVAX S.A.	Date of sampling:	28/09/2014	Certificate no:	Report010
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test:	02/10/2014	Date of certificate:	03/10/2014
		Type of Corebarrel:	T286	Job no:	J2094
Commisioned by:	Giorgos Rousopoulos	Project:	Onshore & Offshore Geotechnical Investigation	Test reference no:	RCC010
Attn:	Giorgos Rousopoulos			Tested by:	LS
Client Tel No:	306972019434	Location/Town:	Delimara	Drill Type:	T44

#### Details of prepared specimens

#### Borehole number:

#### BH G6

		RC	1	RC	2	RC	3	RC	4
Specimen No:									
Orientation of bedding planes with respect to the test specimen:			Perpendicular		Perpendicular		Perpendicular		Perpendicular
Storage condition of specimens:			Sealed		Sealed		Sealed		Sealed
Depth:			21.5m		23.3m		25.3m		29.5m
Run No:			n/a		n/a		n/a		n/a
Specimen end flat to 0.02mm:			Yes		Yes		Yes		Yes
Specimen perpendicular to 0.001 Radian, about 3.5' or 0.05mm/50mm:			Yes		Yes		Yes		Yes
Specimen sides smooth and straight to 0.3mm over full length of specimen:			Yes		Yes		Yes		Yes
Initial diameter:(Average)	mm		58.2		58.1		58.1		58.2
Initial length:(Average)	mm		129		131		130		130
Initial area:	mm <sup>2</sup>		2662.4		2647.0		2650.5		2662.8
Initial volume:	mL		342.4		340.4		344.4		347.0
Length/diameter ratio:	L/D		<b>2.21</b>		<b>2.26</b>		<b>2.24</b>		<b>2.24</b>
Condition as tested:			Slightly Dried		Slightly Dried		Slightly Dried		Slightly Dried
Mass of specimen	g		737.04		743.74		761.36		750.19
Water content (to 0.1%)	%		16.0		15.6		13.7		14.4
Pore Volume	m <sup>3</sup>								
Average	m <sup>3</sup>				0.00001168				
Porosity	%								
Average	%				31.97				
Bulk Density	kg/m <sup>3</sup>		2152		2185		2210		2162
Average	kg/m <sup>3</sup>				2177				
Dry Density	kg/m <sup>3</sup>		1807		1844		1908		1851
Average	kg/m <sup>3</sup>				1852				

#### Test details

		EQ001 No:6 (Range 0 - 150kN)	EQ001 No:6 (Range 0 - 150kN)	EQ001 No:6 (Range 0 - 150kN)	EQ001 No:6 (Range 0 - 150kN)
Machine type/ref:					
Rate of loading	N/min	3000	7000	5000	5000
Stress rate:	Mpa/s	0.019	0.044	0.031	0.031
Maximum failure load:	kN	26.4	33.0	33.6	41.6
Test duration:	sec	520	283	408	492
Uniaxial compressive strength:	Mpa	9.9	12.5	12.7	15.6
Average UCS:				12.7	
Mode of failure:		Multiple shear	Multiple shear	Multiple shear	Multiple shear
Degree of saturation:		100.0	100.0	100.0	100.0

Comments/Deviations from suggested method:

Nil

Measurment of Uncertainty:

Nil

Prepared by:



Jessica Farrugia  
Quality Manager

Approved by:



Chris Magro  
Laboratory Manager

# TEST CERTIFICATE

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock019
Client address:	Street 151-25 Maroussi Greece Sardine Street	Site:	Delimara	Date of certificate:	4 October 2014
Attn:	Sfakianakis Costantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock019
				Tested by:	CM

#### Sample Information

Borehole No: G6  
Depth of Sample: 21.5m  
Date of Sampling: 28/9/2014  
Length / Diameter Ratio: 2.21

#### Test Information

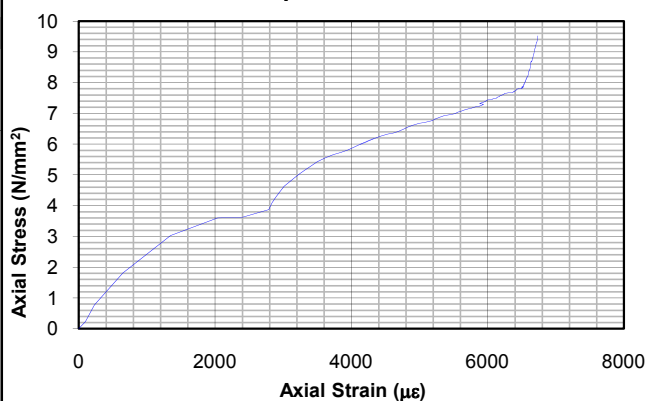
Date of Test: 41708  
Date of Preparation: 41680  
Type of Gauges Used: 30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

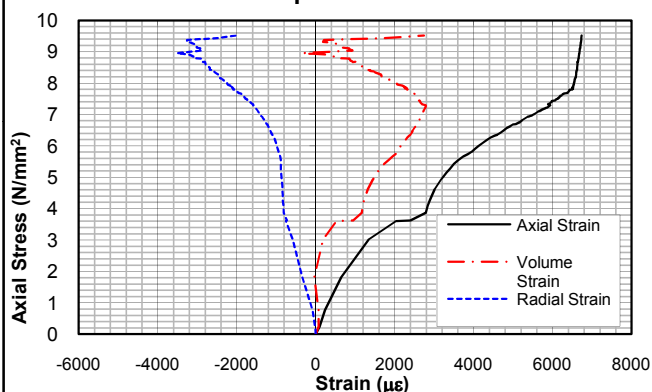
Calculated for axial  $\sigma$ : 4.76 N/mm<sup>2</sup>  
 $E_{\text{medio}}$ : 2.21 kN/mm<sup>2</sup>  
 $E_{\text{tan}}$ : 2.89 kN/mm<sup>2</sup>  
 $E_{\text{sec}}$ : 1.53 kN/mm<sup>2</sup>

Max. strength: 9.52 N/mm<sup>2</sup>  
Poisson at failure: 0.297  
Poisson: 0.280

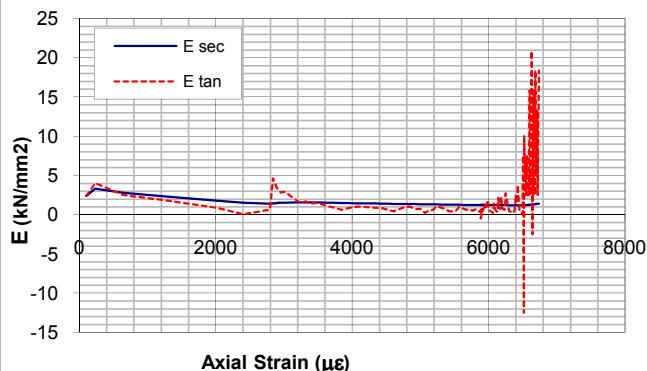
#### Compression Curve



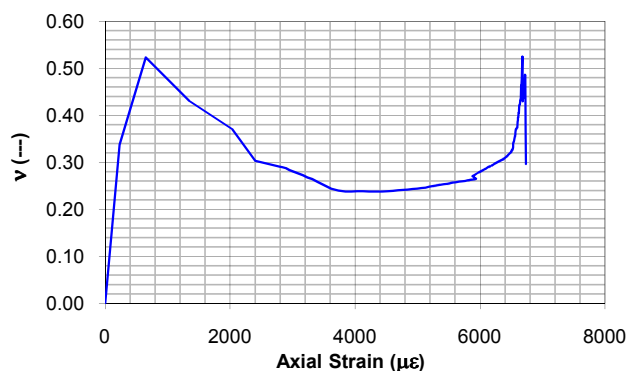
#### Compression Curve



#### Strain Modulus



#### Poisson Ratio



Prepared by:

Jessica Farrugia  
Quality Manager

Approved by:

Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock020
Client address:	27, Marousiou Pionerasia Street 151-25 Maroussi Greece Sardine Street	Site:	Delimara	Date of certificate:	4 October 2014
Attn:	Sfakianakis Costantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock020
				Tested by:	CM

#### Sample Information

Borehole No: G6  
Depth of Sample: 23.3m  
Date of Sampling: 28/9/2014  
Length / Diameter Ratio: 2.25

#### Test Information

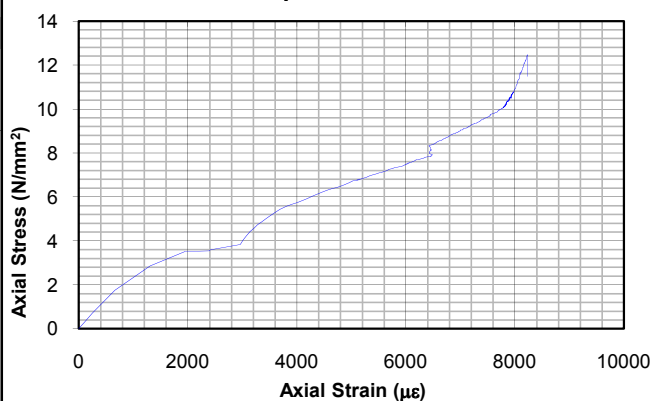
Date of Test: 41708  
Date of Preparation: 41680  
Type of Gauges Used: 30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

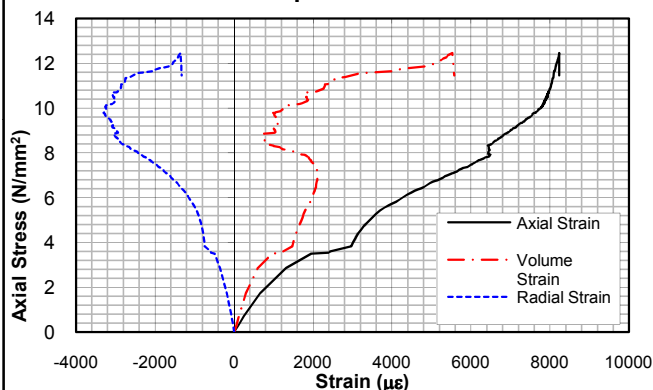
Calculated for axial  $\sigma$ : 6.23 N/mm<sup>2</sup>  
 $E_{medio}$ : 1.21 kN/mm<sup>2</sup>  
 $E_{tan}$ : 1.02 kN/mm<sup>2</sup>  
 $E_{sec}$ : 1.39 kN/mm<sup>2</sup>

Max. strength: 12.46 N/mm<sup>2</sup>  
Poisson at failure: 0.368  
Poisson: 0.275

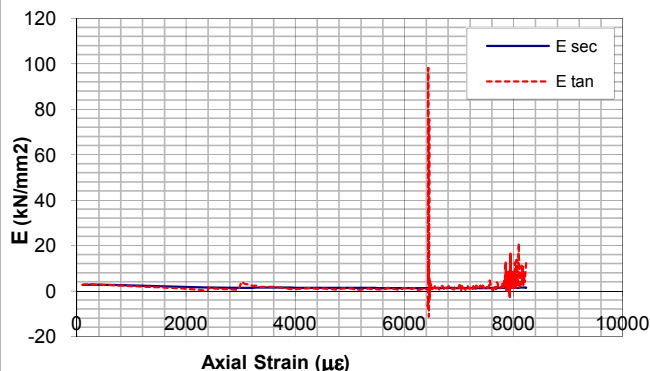
#### Compression Curve



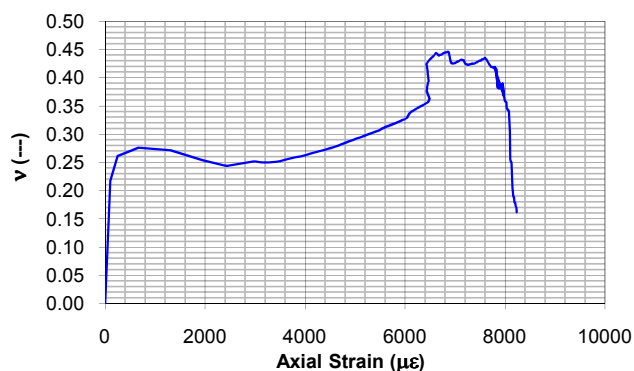
#### Compression Curve



#### Strain Modulus



#### Poisson Ratio



Prepared by:

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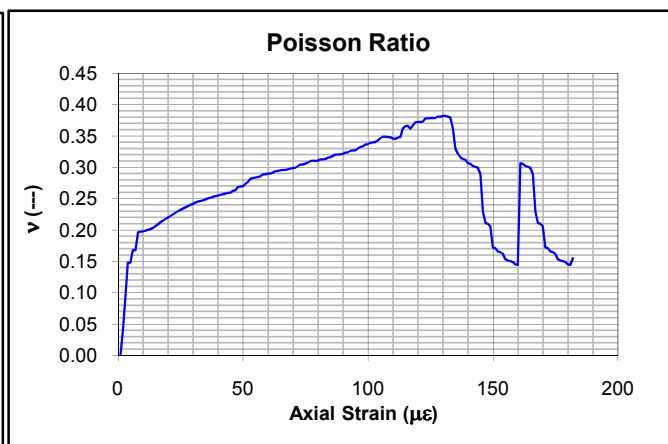
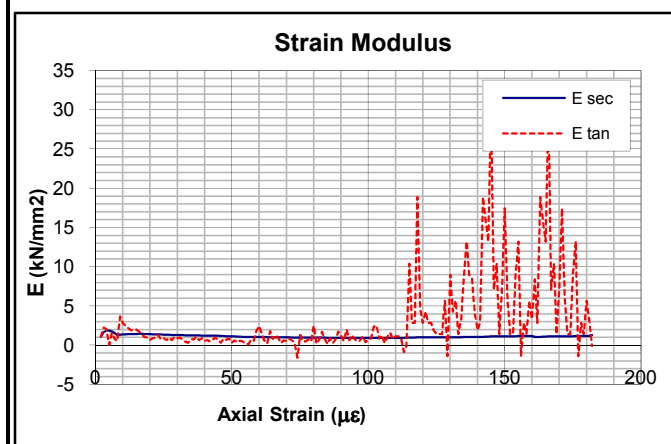
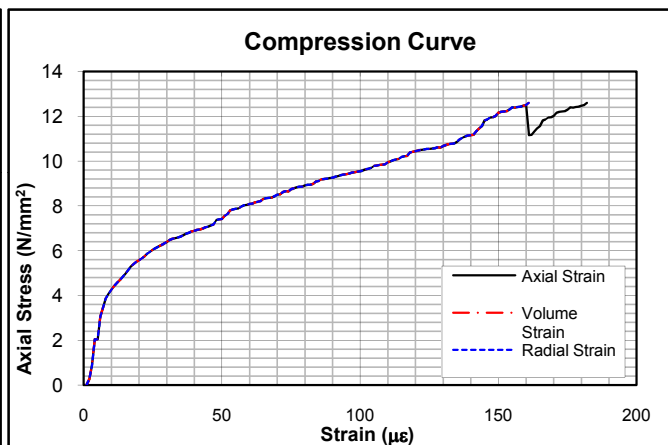
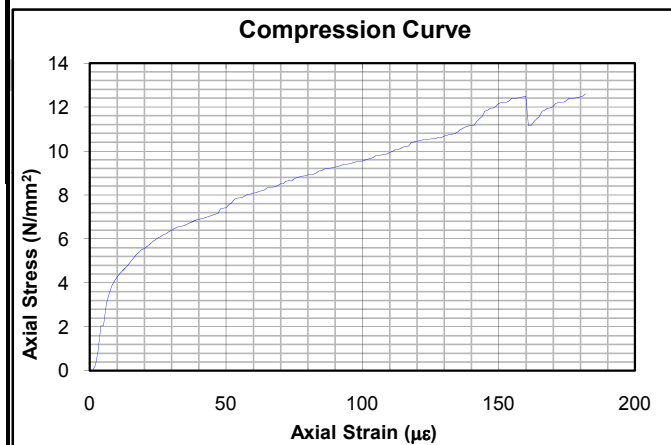
## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock021
Client address:	27, Marousiou Pothos Street 151-25 Maroussi Greece Sardine Street	Site:	Delimara	Date of certificate:	4 October 2014
Attn:	Sfakianakis Costantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock021
				Tested by:	CM

Sample Information	Test Information
Borehole No:	G6
Depth of Sample:	25.3m
Date of Sampling:	28/9/2014
Length / Diameter Ratio:	2.24
	Date of Test:
	41708
	Date of Preparation:
	41680
	Type of Gauges Used:
	30mm Strain Gauges

Elongation Modulus and Poisson Ratio	
Calculated for axial $\sigma$ :	6.30 N/mm <sup>2</sup>
$E_{\text{medio}}$ :	0.97 kN/mm <sup>2</sup>
$E_{\text{tan}}$ :	0.64 kN/mm <sup>2</sup>
$E_{\text{sec}}$ :	1.30 kN/mm <sup>2</sup>
	Max. strength:
	12.59 N/mm <sup>2</sup>
	Poisson at failure:
	0.144
	Poisson:
	0.238



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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock022
Client address:	27, Marousiou Pothos Street 151-25 Maroussi Greece Sardine Street	Site:	Delimara	Date of certificate:	4 October 2014
Attn:	Sfakianakis Costantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock022
				Tested by:	CM

#### Sample Information

Borehole No: G6  
Depth of Sample: 29.5m  
Date of Sampling: 28/9/2014  
Length / Diameter Ratio: 2.24

#### Test Information

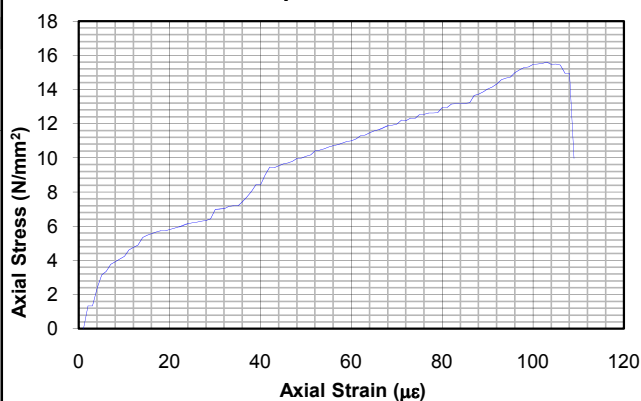
Date of Test: 41708  
Date of Preparation: 41680  
Type of Gauges Used: 30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

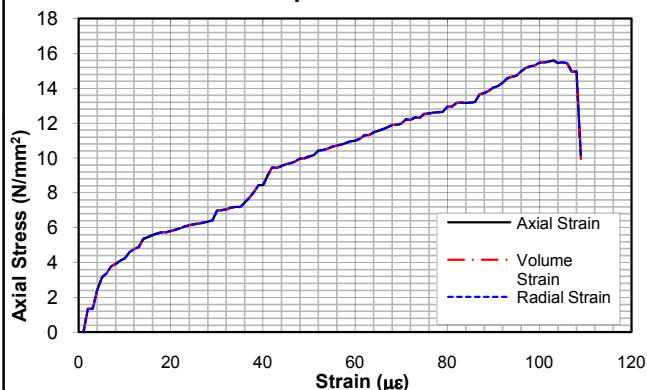
Calculated for axial  $\sigma$ : 7.80 N/mm<sup>2</sup>  
 $E_{\text{medio}}$ : 1.43 kN/mm<sup>2</sup>  
 $E_{\text{tan}}$ : 1.06 kN/mm<sup>2</sup>  
 $E_{\text{sec}}$ : 1.80 kN/mm<sup>2</sup>

Max. strength: 15.59 N/mm<sup>2</sup>  
Poisson at failure: 0.274  
Poisson: 0.210

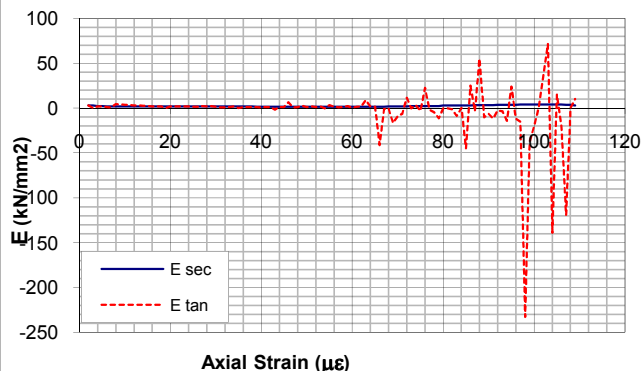
#### Compression Curve



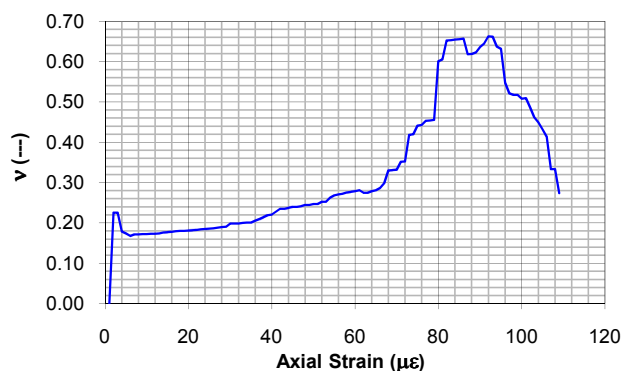
#### Compression Curve



#### Strain Modulus



#### Poisson Ratio



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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength of Rock materials according to ISRM Suggested Method

Client Name:	J&P AVAX S.A.	Date of sampling:	28/09/2014	Certificate no:	Report012
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test:	02/10/2014	Date of certificate:	03/10/2014
		Type of Corebarrel:	T286	Job no:	J2094
Commisioned by:	Giorgos Rousopoulos	Project:	Onshore & Offshore Geotechnical Investigation	Test reference no:	RCC012
Attn:	Giorgos Rousopoulos			Tested by:	LS
Client Tel No:	306972019434	Location/Town:	Delimara	Drill Type:	T44

#### Details of prepared specimens

#### Borehole number:

#### BH G7

		RC	1	RC	2	RC	3
Specimen No:							
Orientation of bedding planes with respect to the test specimen:			Perpendicular		Perpendicular		Perpendicular
Storage condition of specimens:			Sealed		Sealed		Sealed
Depth:			22.1m		25m		28.6m
Run No:			n/a		n/a		n/a
Specimen end flat to 0.02mm:			Yes		Yes		Yes
Specimen perpendicular to 0.001 Radian, about 3.5' or 0.05mm/50mm:			Yes		Yes		Yes
Specimen sides smooth and straight to 0.3mm over full length of specimen:			Yes		Yes		Yes
Initial diameter:(Average)	mm		58.0		58.2		58.1
Initial length:(Average)	mm		128		130		128
Initial area:	mm <sup>2</sup>		2640.1		2656.4		2655.8
Initial volume:	mL		337.5		339.6		340.8
Length/diameter ratio:	L/D		<b>2.21</b>		<b>2.24</b>		<b>2.21</b>
Condition as tested:			Slightly Dried		Slightly Dried		Slightly Dried
Mass of specimen	g		716.47		779.86		752.78
Water content (to 0.1%)	%		17.5		10.6		10.7
Pore Volume	m <sup>3</sup>						
Average	m <sup>3</sup>				0.0000135		
Porosity	%						
Average	%				30.35		
Bulk Density	kg/m <sup>3</sup>		2123		2296		2209
Average	kg/m <sup>3</sup>				2209		
Dry Density	kg/m <sup>3</sup>		1752		2052		1973
Average	kg/m <sup>3</sup>				1926		

#### Test details

		EQ001 No:6 (Range 0 - 150kN)	EQ001 No:6 (Range 0 - 150kN)	EQ001 No:6 (Range 0 - 150kN)
Machine type/ref:				
Rate of loading	N/min	3000	5000	5000
Stress rate:	Mpa/s	0.019	0.031	0.031
Maximum failure load:	kN	12.5	34.1	48.0
Test duration:	sec	260	408	576
Uniaxial compressive strength:	Mpa	4.7	12.8	18.1
Average UCS:				11.9
Mode of failure:		Multiple shear	Multiple shear	Multiple shear
Degree of saturation:		100.0	100.0	100.0
Comments/Deviations from suggested method:				Nil
Measurment of Uncertainty:				Nil

Prepared by:



Jessica Farrugia  
Quality Manager

Approved by:



Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation
Client address:	27, Marousiou Road Street 151-25 Maroussi Greece Sardine Street	Site:	Delimara
Attn:	Sfakianakis Costantinos	Drill Type:	T44
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286
		Certificate no:	Rock023
		Date of certificate:	4 October 2014
		Job no:	J2094
		Test reference no:	Rock023
		Tested by:	CM

#### Sample Information

Borehole No: G7  
Depth of Sample: 22.1m  
Date of Sampling: 28/9/2014  
Length / Diameter Ratio: 2.21

#### Test Information

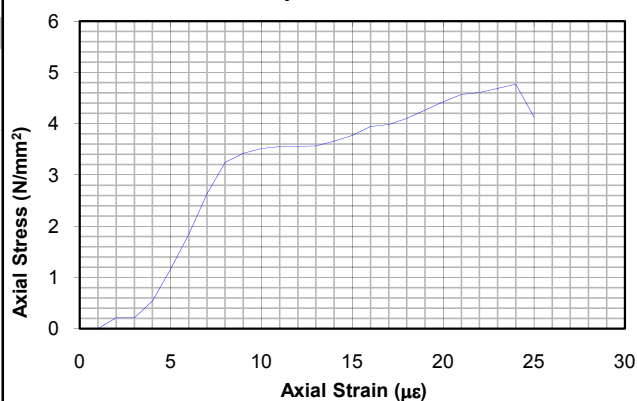
Date of Test: 41708  
Date of Preparation: 41680  
Type of Gauges Used: 30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

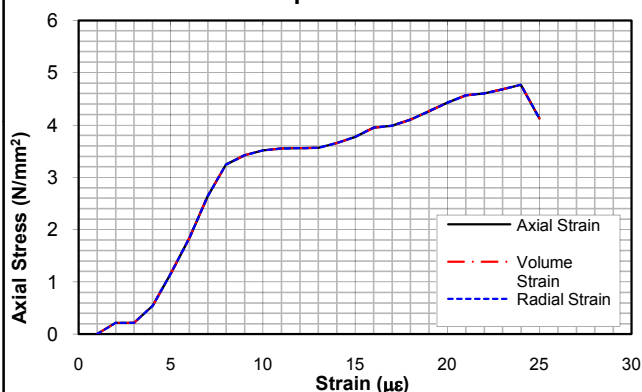
Calculated for axial  $\sigma$ : 2.39 N/mm<sup>2</sup>  
 $E_{\text{medio}}$ : 0.51 kN/mm<sup>2</sup>  
 $E_{\text{tan}}$ : 0.49 kN/mm<sup>2</sup>  
 $E_{\text{sec}}$ : 0.53 kN/mm<sup>2</sup>

Max. strength: 4.77 N/mm<sup>2</sup>  
Poisson at failure: 0.547  
Poisson: 0.288

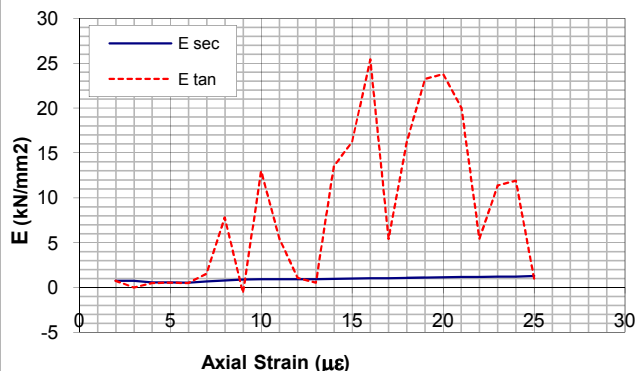
#### Compression Curve



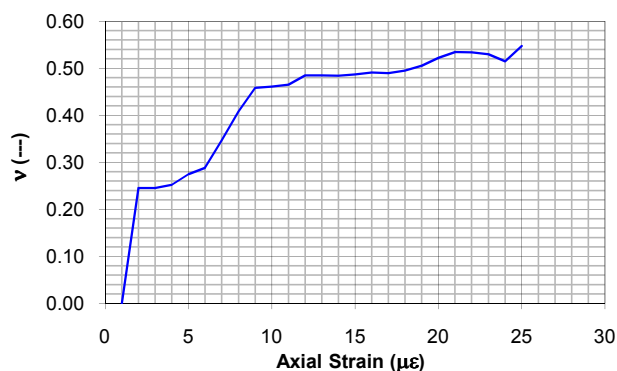
#### Compression Curve



#### Strain Modulus



#### Poisson Ratio



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Laboratory Manager

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock024
Client address:	27, Marousiou Road, Street 151-25 Maroussi Greece Sardine Street	Site:	Delimara	Date of certificate:	4 October 2014
Attn:	Sfakianakis Costantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock024
				Tested by:	CM

#### Sample Information

Borehole No: G7  
Depth of Sample: 25.0m  
Date of Sampling: 28/9/2014  
Length / Diameter Ratio: 2.24

#### Test Information

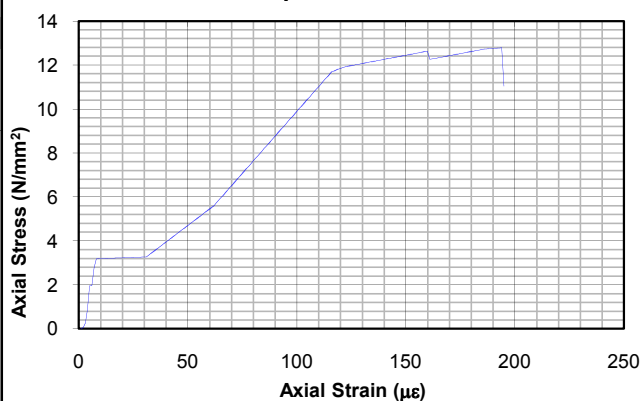
Date of Test: 41708  
Date of Preparation: 41680  
Type of Gauges Used: 30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

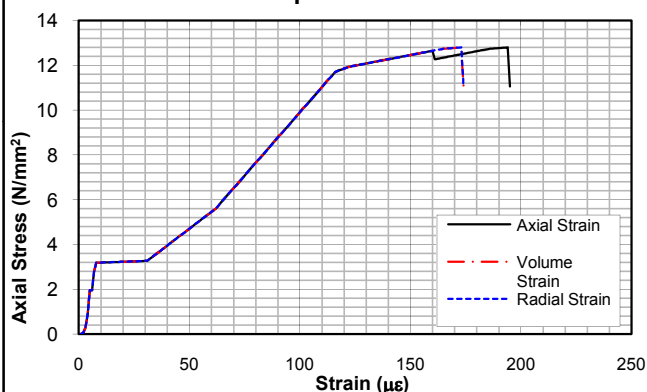
Calculated for axial  $\sigma$ : 6.40 N/mm<sup>2</sup>  
 $E_{\text{medio}}$ : 1.99 kN/mm<sup>2</sup>  
 $E_{\text{tan}}$ : 1.98 kN/mm<sup>2</sup>  
 $E_{\text{sec}}$ : 1.99 kN/mm<sup>2</sup>

Max. strength: 12.79 N/mm<sup>2</sup>  
Poisson at failure: 0.441  
Poisson: 0.591

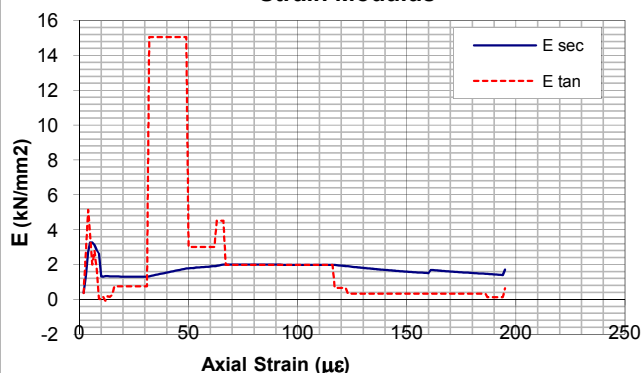
#### Compression Curve



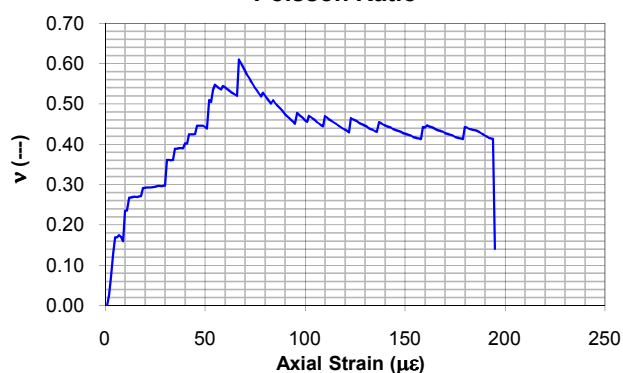
#### Compression Curve



#### Strain Modulus



#### Poisson Ratio



Prepared by:

Jessica Farrugia  
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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock025
Client address:	27, Marousiou Pothiaia Street 151-25 Maroussi Greece Sardine Street	Site:	Delimara	Date of certificate:	4 October 2014
Attn:	Sfakianakis Costantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock025
				Tested by:	CM

#### Sample Information

Borehole No: G7  
Depth of Sample: 28.6m  
Date of Sampling: 28/9/2014  
Length / Diameter Ratio: 2.21

#### Test Information

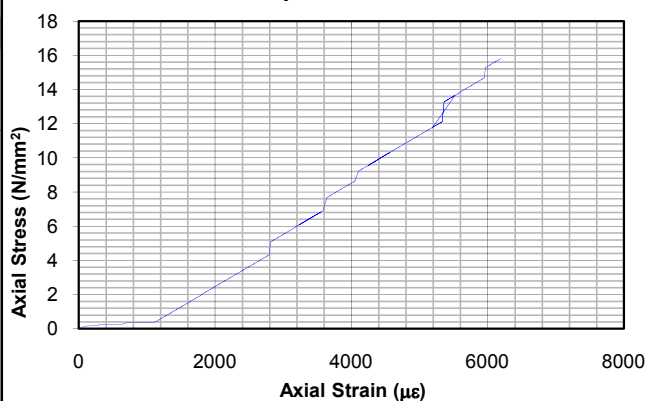
Date of Test: 41708  
Date of Preparation: 41680  
Type of Gauges Used: 30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

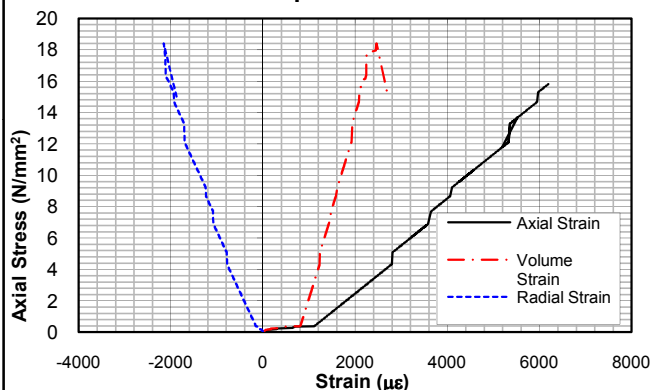
Calculated for axial  $\sigma$ : 7.91 N/mm<sup>2</sup>  
 $E_{\text{medio}}$ : 2.23 kN/mm<sup>2</sup>  
 $E_{\text{tan}}$ : 2.35 kN/mm<sup>2</sup>  
 $E_{\text{sec}}$ : 2.12 kN/mm<sup>2</sup>

Max. strength: 15.81 N/mm<sup>2</sup>  
Poisson at failure: 0.300  
Poisson: 0.300

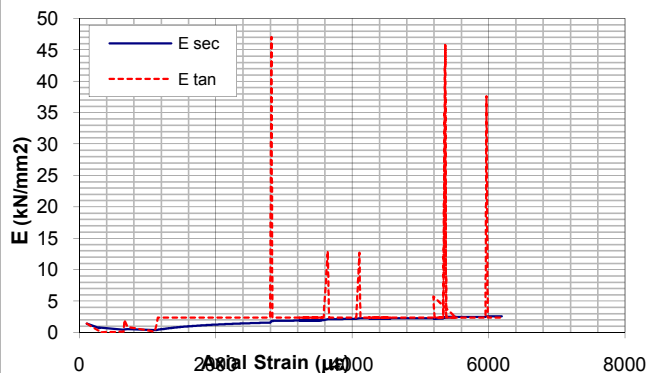
#### Compression Curve



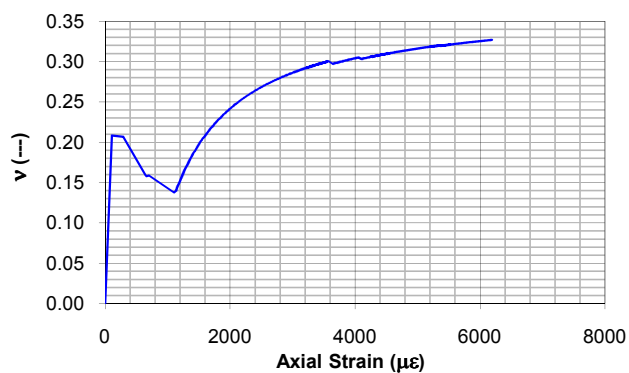
#### Compression Curve



#### Strain Modulus



#### Poisson Ratio



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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock005
Client address:	27, Marousiou Pothiarou Street 151-25 Maroussi Greece	Site:	Delimara	Date of certificate:	26/09/2014
Attn:	Sfakianakis Costantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock005
				Tested by:	CM

#### Sample Information

Borehole No: G8  
Depth of Sample: 16.7m  
Date of Sampling: 16/09/2014  
Length / Diameter Ratio: 2.03

#### Test Information

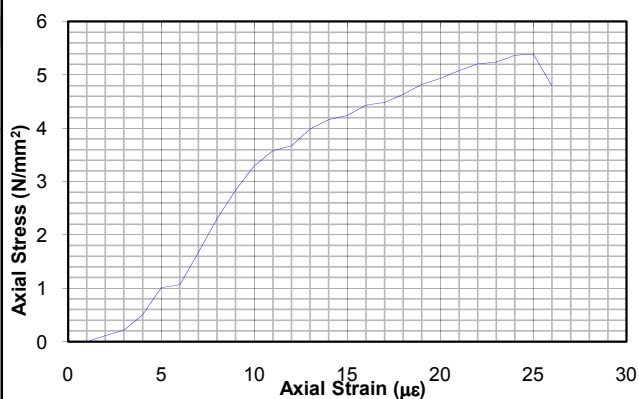
Date of Test: 26/09/2014  
Date of Preparation: 20/09/2014  
Type of Gauges Used: 30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

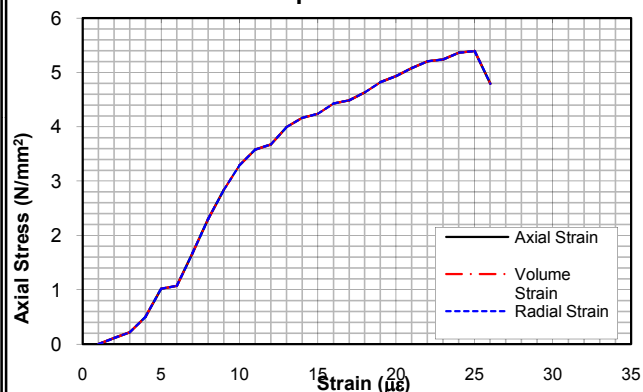
Calculated for axial  $\sigma$ : 2.70 N/mm<sup>2</sup>  
 $E_{\text{medio}}$ : 13.96 kN/mm<sup>2</sup>  
 $E_{\text{tan}}$ : 22.49 kN/mm<sup>2</sup>  
 $E_{\text{sec}}$ : 5.43 kN/mm<sup>2</sup>

Max. strength: 5.39 N/mm<sup>2</sup>  
Poisson at failure: 1.348  
Poisson: 1.303

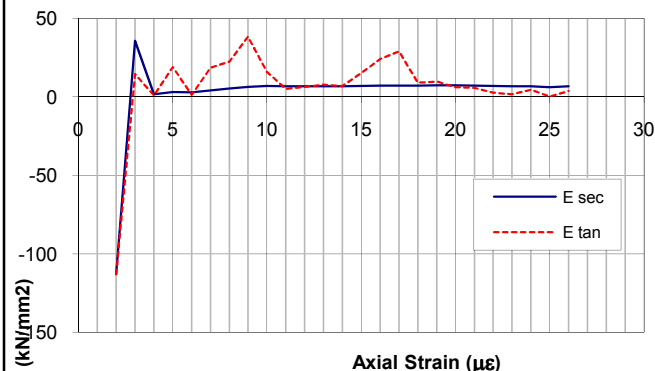
#### Compression Curve



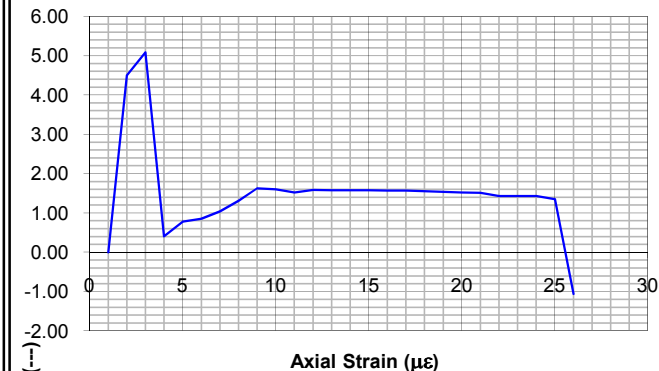
#### Compression Curve



#### Strain Modulus



#### Poisson Ratio



Prepared by:

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock006
Client address:	27, Marousiou Pionerasia Street 151-25 Maroussi Greece Sardine Street	Site:	Delimara	Date of certificate:	26/09/2014
Attn:	Sfakianakis Costantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock006
				Tested by:	CM

#### Sample Information

Borehole No: G8  
Depth of Sample: 18.8 m  
Date of Sampling: 16/09/2014  
Length / Diameter Ratio: 2.23

#### Test Information

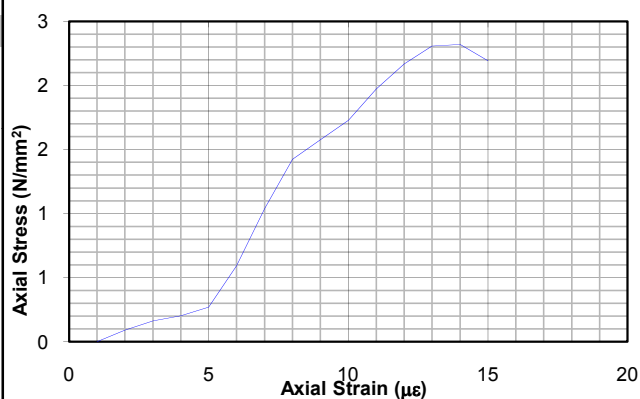
Date of Test: 26/09/2014  
Date of Preparation: 20/09/2014  
Type of Gauges Used: 30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

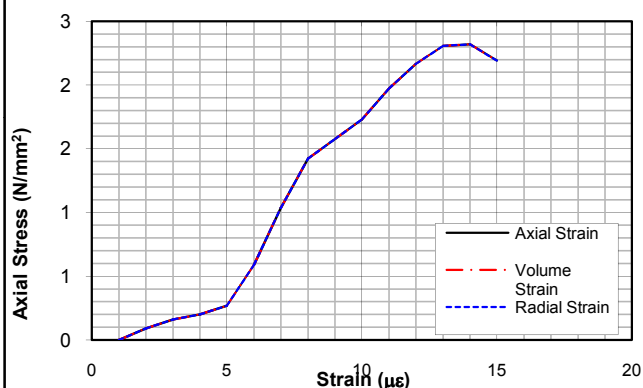
Calculated for axial  $\sigma$ : 1.16 N/mm<sup>2</sup>  
 $E_{medio}$ : 0.87 kN/mm<sup>2</sup>  
 $E_{tan}$ : 0.75 kN/mm<sup>2</sup>  
 $E_{sec}$ : 0.99 kN/mm<sup>2</sup>

Max. strength: 2.32 N/mm<sup>2</sup>  
Poisson at failure: 0.302  
Poisson: 0.311

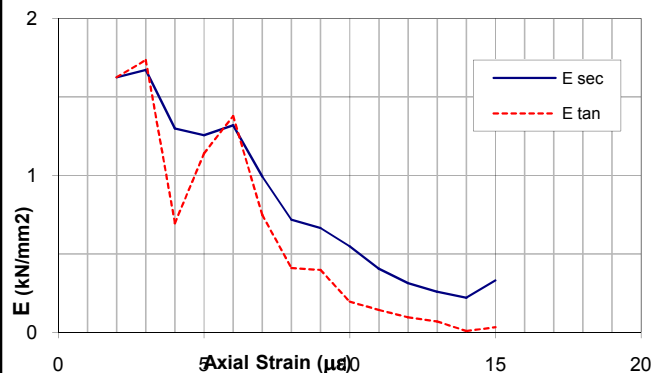
#### Compression Curve



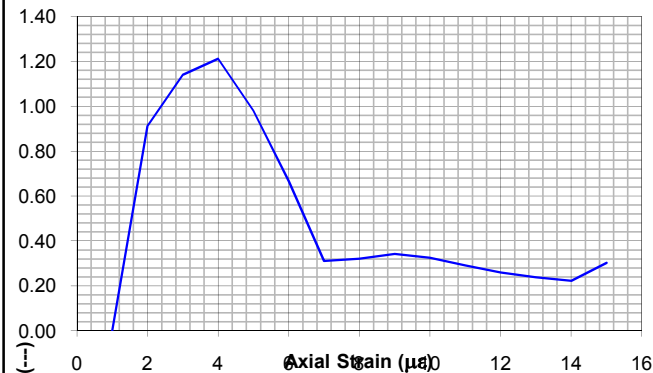
#### Compression Curve



#### Strain Modulus



#### Poisson Ratio



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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock007
Client address:	27, Marousiou Pothiarou Street 151-25 Maroussi Greece Sardine Street	Site:	Delimara	Date of certificate:	26/09/2014
Attn:	Sfakianakis Costantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock007
				Tested by:	CM

#### Sample Information

Borehole No: G8  
Depth of Sample: 22.3 m  
Date of Sampling: 16/09/2014  
Length / Diameter Ratio: 2.10

#### Test Information

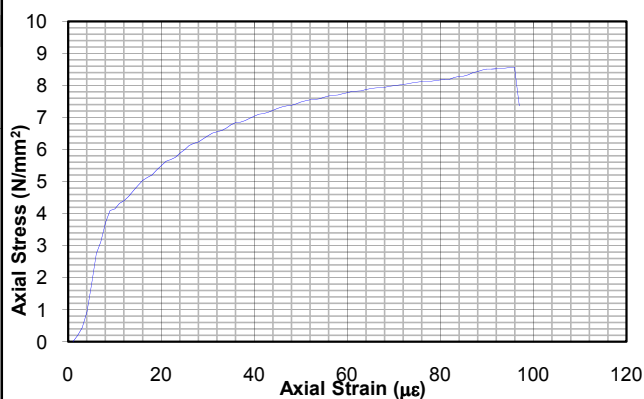
Date of Test: 26/09/2014  
Date of Preparation: 20/09/2014  
Type of Gauges Used: 30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

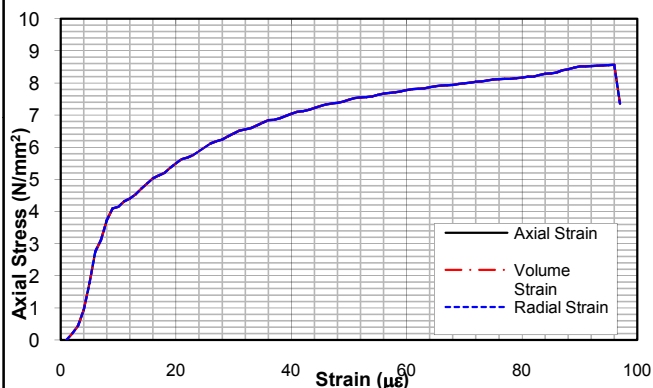
Calculated for axial  $\sigma$ : 4.29 N/mm<sup>2</sup>  
 $E_{\text{medio}}$ : 1.60 kN/mm<sup>2</sup>  
 $E_{\text{tan}}$ : 0.93 kN/mm<sup>2</sup>  
 $E_{\text{sec}}$ : 2.27 kN/mm<sup>2</sup>

Max. strength: 8.57 N/mm<sup>2</sup>  
Poisson at failure: 0.384  
Poisson: 1.136

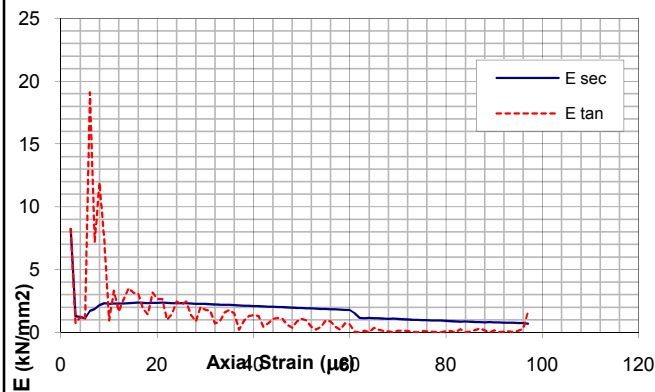
#### Compression Curve



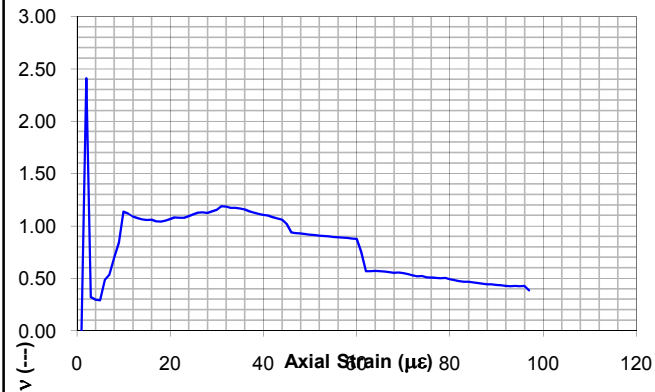
#### Compression Curve



#### Strain Modulus



#### Poisson Ratio



Prepared by:

Jessica Farrugia  
Quality Manager

Approved by:

Chris Magro  
Laboratory Manager

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### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock008
Client address:	27, Marousiou Pothos Street 151-25 Maroussi Greece Sardine Street	Site:	Delimara	Date of certificate:	26/09/2014
Attn:	Sfakianakis Costantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock008
				Tested by:	CM

#### Sample Information

Borehole No: G8  
Depth of Sample: 22.7 m  
Date of Sampling: 16/09/2014  
Length / Diameter Ratio: 1.90

#### Test Information

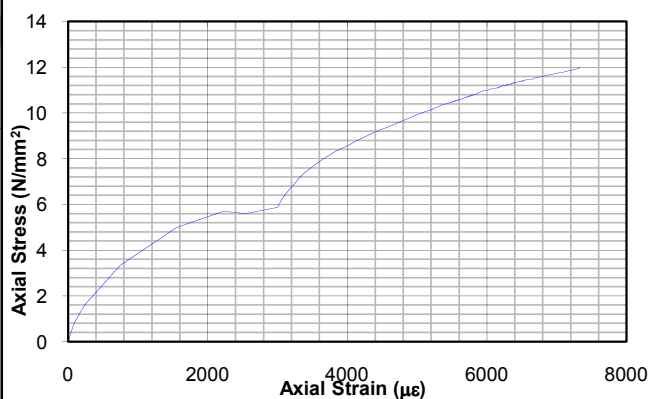
Date of Test: 26/09/2014  
Date of Preparation: 20/09/2014  
Type of Gauges Used: 30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

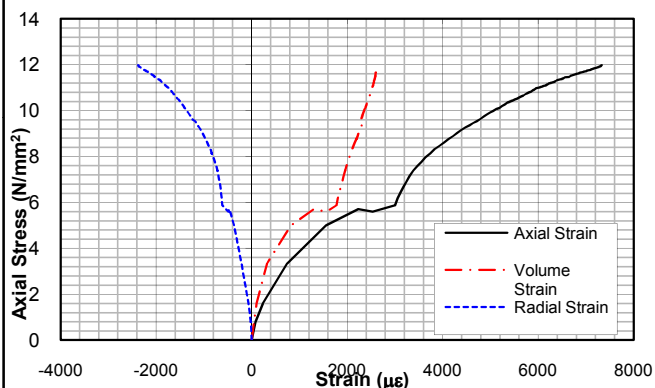
Calculated for axial  $\sigma$ : 7.25 N/mm<sup>2</sup>  
 $E_{medio}$ : 3.00 kN/mm<sup>2</sup>  
 $E_{tan}$ : 3.84 kN/mm<sup>2</sup>  
 $E_{sec}$ : 2.16 kN/mm<sup>2</sup>

Max. strength: 14.49 N/mm<sup>2</sup>  
Poisson at failure: 0.574  
Poisson: 0.210

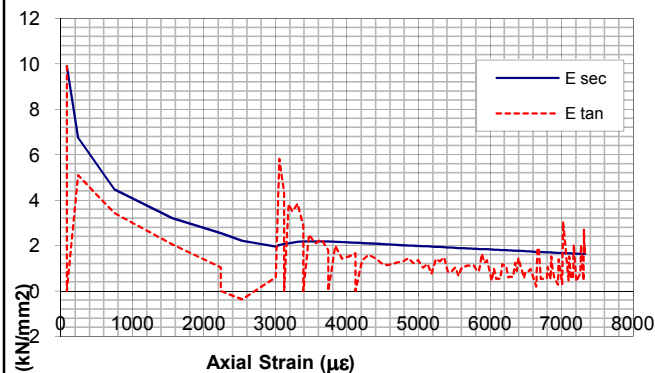
#### Compression Curve



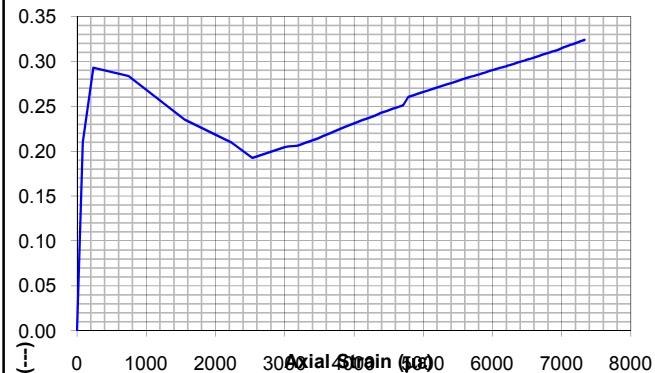
#### Compression Curve



#### Strain Modulus



#### Poisson Ratio



Prepared by:

Jessica Farrugia  
Quality Manager

Approved by:

Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength of Rock materials according to ISRM Suggested Method

Client Name:	J&P AVAX S.A.	Date of sampling:	16/09/2014	Certificate no:	Report013
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test:	03/10/2014	Date of certificate:	07/10/2014
		Type of Corebarrel:	T286	Job no:	J2094
Commisioned by:	Giorgos Rousopoulos	Project:	Onshore & Offshore Geotechnical Investigation	Test reference no:	RCC013
Attn:	Giorgos Rousopoulos			Tested by:	CM
Client Tel No:	306972019434	Location/Town:	Delimara	Drill Type:	Mobile Drill

#### Details of prepared specimens

#### Borehole number:

#### BH G8

		RC	1	RC	2	RC	3	RC	4
Specimen No:									
Orientation of bedding planes with respect to the test specimen:			Perpendicular		Perpendicular		Perpendicular		Perpendicular
Storage condition of specimens:			Sealed		Sealed		Sealed		Sealed
Depth:			25.4m		27.5m		31.0m		31.4m
Run No:			3		4		5		5
Specimen end flat to 0.02mm:			Yes		Yes		Yes		Yes
Specimen perpendicular to 0.001 Radian, about 3.5' or 0.05mm/50mm:			Yes		Yes		Yes		Yes
Specimen sides smooth and straight to 0.3mm over full length of specimen:			Yes		Yes		Yes		Yes
Initial diameter:(Average)	mm		59.1		55.5		58.9		50.0
Initial length:(Average)	mm		120		124		124		95
Initial area:	mm <sup>2</sup>		2746.2		2417.5		2727.4		1964.0
Initial volume:	mL		330.0		290.5		337.7		187.1
Length/diameter ratio:	L/D		<b>2.03</b>		<b>2.23</b>		<b>2.11</b>		<b>1.91</b>
Condition as tested:			Slightly Dried		Slightly Dried		Slightly Dried		Slightly Dried
Mass of specimen	g		702.03		631.73		709.83		408.65
Water content (to 0.1%)	%		14.2		14.8		14.7		12.0
Pore Volume	m <sup>3</sup>								
Average	m <sup>3</sup>				0.0000227				
Porosity	%								
Average	%				34.68				
Bulk Density	kg/m <sup>3</sup>		2128		2175		2102		2184
Average	kg/m <sup>3</sup>				2147				
Dry Density	kg/m <sup>3</sup>		1826		1854		1793		1921
Average	kg/m <sup>3</sup>				1849				

#### Test details

		EQ001 No:6 (Range 0 - 150kN)	EQ001 No:6 (Range 0 - 150kN)	EQ001 No:6 (Range 0 - 150kN)	EQ001 No:6 (Range 0 - 150kN)
Machine type/ref:					
Rate of loading	N/min	2000	2000	2000	2000
Stress rate:	Mpa/s	0.012	0.014	0.012	0.017
Maximum failure load:	kN	14.4	5.7	23.0	27.8
Test duration:	sec	420	180	690	840
Uniaxial compressive strength:	Mpa	5.3	2.4	8.4	14.1
Average UCS:				7.5	
Mode of failure:		Multiple shear	Shear	Multiple shear	Multiple shear
Degree of saturation:		100.0	100.0	100.0	100.0

Comments/Deviations from suggested method:

Sample No:2 - Failed through natural fractures

Measurment of Uncertainty:

Nil

Prepared by:



Jessica Farrugia  
Quality Manager

Approved by:



Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength of Rock materials according to ISRM Suggested Method

Client Name:	J&P AVAX S.A.	Date of sampling:	15/09/2014	Certificate no:	Report003
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test:	19/09/2014	Date of certificate:	22/09/2014
Commisioned by:	Giorgos Rousopoulos	Type of Corebarrel:	T2 - 86	Job no:	J2094
Attn:	Giorgos Rousopoulos	Project:	Onshore & Offshore Geotechnical Investigation	Test reference no:	RCC003
Client Tel No:	306972019434	Location/Town:	Delimara	Tested by:	MH, LS
				Drill Type:	Mobile Drill

#### Details of prepared specimens

#### Borehole number:

#### G9

		RC	7	RC	10	RC	11	RC	12
Specimen No:									
Orientation of bedding planes with respect to the test specimen:			Perpendicular		Perpendicular		Perpendicular		Perpendicular
Storage condition of specimens:			Sealed		Sealed		Sealed		Sealed
Depth:			9.2m		14.1m		18.3m		19.7m
Run No:			1		3		4		4
Specimen end flat to 0.02mm:			Yes		Yes		Yes		Yes
Specimen perpendicular to 0.001 Radian, about 3.5' or 0.05mm/50mm:			Yes		Yes		Yes		Yes
Specimen sides smooth and straight to 0.3mm over full length of specimen:			Yes		Yes		Yes		Yes
Initial diameter:(Average)	mm		57.7		62.6		66.4		64.5
Initial length:(Average)	mm		115		164		163		173
Initial area:	mm <sup>2</sup>		2617.7		3073.4		3461.5		3269.4
Initial volume:	mL		301.6		354.2		565.9		564.2
Length/diameter ratio:	L/D		<b>2.00</b>		<b>2.61</b>		<b>2.46</b>		<b>2.67</b>
Condition as tested:			As received		As received		As received		As received
Mass of specimen	g		640.36		1056.76		1209.6		1203.73
Water content (to 0.1%)	%		18.8		18.7		15.4		16.6
Pore Volume	m <sup>3</sup>				0.0000229				
Average	m <sup>3</sup>						0.0000229		
Porosity	%				30.64				
Average	%						30.64		
Bulk Density	kg/m <sup>3</sup>		2123		2984		2138		2134
Average	kg/m <sup>3</sup>						2344		
Dry Density	kg/m <sup>3</sup>		1724		2424		1808		1780
Average	kg/m <sup>3</sup>						1934		

#### Test details

		EQ001 No:6 (Range 0 - 150kN)	EQ001 No:6 (Range 0 - 150kN)	EQ001 No:6 (Range 0 - 150kN)	EQ001 No:6 (Range 0 - 150kN)
Machine type/ref:					
Rate of loading	N/min	4000	3000	5000	5000
Stress rate:	Mpa/s	0.025	0.016	0.024	0.025
Maximum failure load:	kN	10.1	9.7	35.1	32.5
Test duration:	sec	7	5	439	405
Uniaxial compressive strength:	Mpa	3.9	3.2	10.1	9.9
Average UCS:				6.8	
Mode of failure:		Multiple shear	Shear	Multiple shear	Multiple shear
Degree of saturation:		100.0	100.0	100.0	100.0
Comments/Deviations from suggested method:				Nil	
Measurment of Uncertainty:				Nil	

Prepared by:



Jessica Farrugia  
Quality Manager

Approved by:



Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength of Rock materials according to ISRM Suggested Method + Annex W

Client Name:	J&P AVAX S.A.	Date of sampling:	15/09/2014	Certificate no:	4
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test:	20/09/2014	Date of certificate:	22/09/2014
Commisioned by:	Sfakianakis Costantinos	Type of Corebarrel:	T2 - 86	Job no:	J2094
Attn:	Sfakianakis Costantinos	Location/Town:	Delimara	Test reference no:	RCC004
Client Tel No:	306972019434	Project:	Onshore & Offshore Geotechnical Investigation	Tested by:	MH, LS
				Drill Type:	Mobile Drill

#### Details of prepared specimens

#### BoreHole Number:

**G9**

Specimen No:	RC	13
Orientation of bedding planes with respect to the test specimen:	Perpendicular	
Storage condition of specimens:	Sealed	
Depth:	25m	
Run No:	6	
Specimen end flat to 0.02mm:	Yes	
Specimen perpendicular to 0.001 Radian, about 3.5' or 0.05mm/50mm:	Yes	
Specimen sides smooth and straight to 0.3mm over full length of specimen:	Yes	

Initial diameter:(Average)	mm	63.9
Initial length:(Average)	mm	165
Initial area:	mm <sup>2</sup>	3206.4
Initial volume:	mL	529.2
Length/diameter ratio:	L/D	<b>2.59</b>
Condition as tested:	As received	
Mass of specimen	g	1117.55
Water content (to 0.1%)	%	17.6
Bulk Density	kg/m <sup>3</sup>	2112
Dry Density	kg/m <sup>3</sup>	1739.61

#### Test details

Machine type/ref:	EQ001 No:6 (Range 0 - 150kN)
Rate of loading	N/min 5000
Stress rate:	Mpa/s 0.026
Maximum failure load:	kN 30.0
Test duration:	sec 376
Uniaxial compressive strength:	Mpa 9.4
Average UCS:	9.4
Mode of failure:	Shear
Degree of saturation:	100.0

Comments/Deviations from suggested method: Nil

Measurment of Uncertainty: Nil

Prepared by:



Jessica Farrugia  
Quality Manager

Approved by:



Chris Magro  
Laboratory Manager

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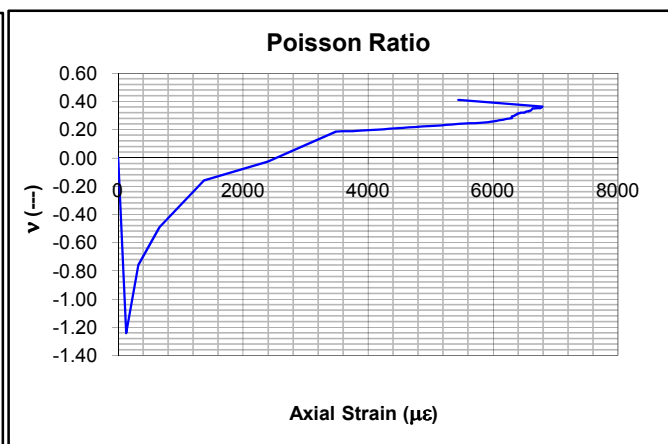
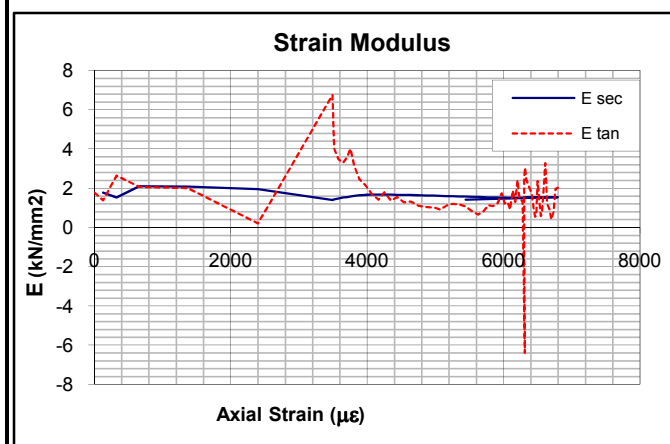
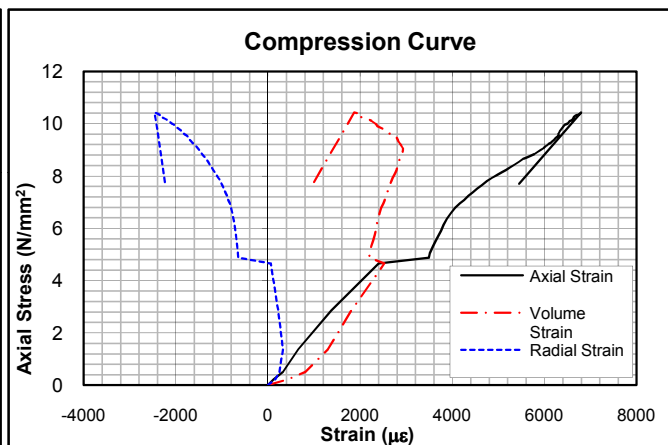
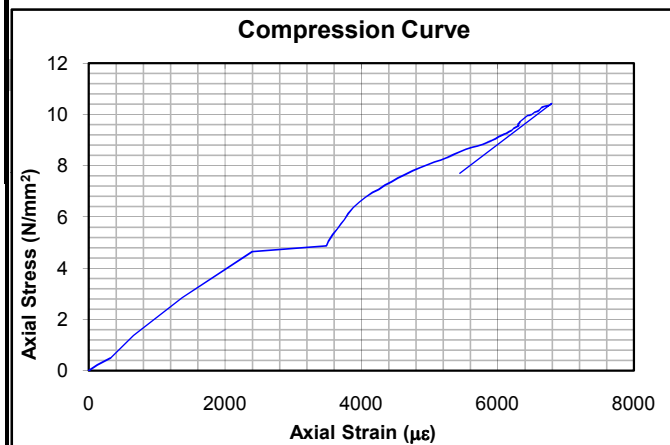
## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock046
Client address:	27, Marousiou Pothos Street 151-25 Maroussi Greece Sardine Street	Site:	Delimara	Date of certificate:	18/10/2014
Attn:	Sfakianakis Costantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock046
				Tested by:	CM

Sample Information	Test Information
Borehole No: G9	Date of Test: 18/10/2014
Depth of Sample: 16	Date of Preparation: 17/10/2014
Date of Sampling: 15/9/2014	Type of Gauges Used: 30mm Strain Gauges
Length / Diameter Ratio: 1.79	

Elongation Modulus and Poisson Ratio	
Calculated for axial $\sigma$ : 5.21 N/mm <sup>2</sup>	Max. strength: 10.43 N/mm <sup>2</sup>
$E_{medio}$ : 4.09 kN/mm <sup>2</sup>	Poisson at failure: 0.362
$E_{tan}$ : 6.75 kN/mm <sup>2</sup>	Poisson: 0.186
$E_{sec}$ : 1.43 kN/mm <sup>2</sup>	



Prepared by:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

Approved by:

*Chris Magro*

Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation
Client address:	Street 151-25 Maroussi Greece Sardine Street	Site:	Delimara
Attn:	Sfakianakis Costantinos	Drill Type:	T44
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286
		Certificate no:	Rock047
		Date of certificate:	18/10/2014
		Job no:	J2094
		Test reference no:	Rock047
		Tested by:	CM

#### Sample Information

Borehole No: G9  
Depth of Sample: 18  
Date of Sampling: 15/9/2014  
Length / Diameter Ratio: 2.19

#### Test Information

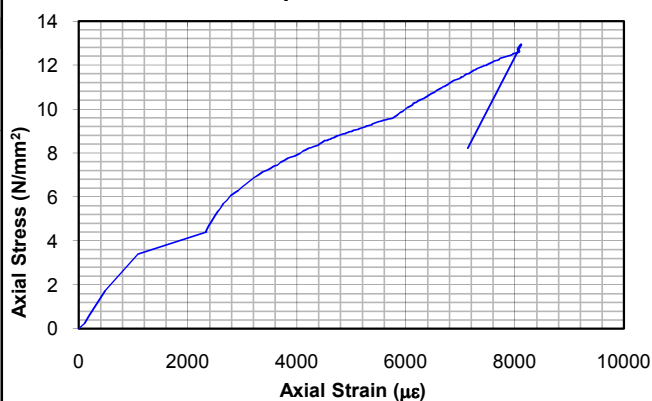
Date of Test: 18/10/2014  
Date of Preparation: 17/10/2014  
Type of Gauges Used: 30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

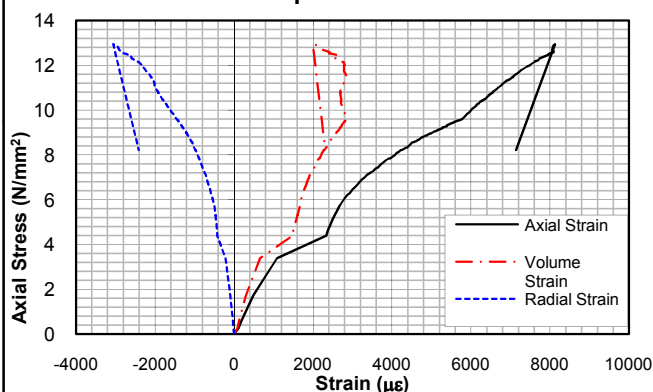
Calculated for axial  $\sigma$ : 6.47 N/mm<sup>2</sup>  
 $E_{\text{medio}}$ : 2.23 kN/mm<sup>2</sup>  
 $E_{\text{tan}}$ : 2.31 kN/mm<sup>2</sup>  
 $E_{\text{sec}}$ : 2.15 kN/mm<sup>2</sup>

Max. strength: 12.94 N/mm<sup>2</sup>  
Poisson at failure: 0.350  
Poisson: 0.204

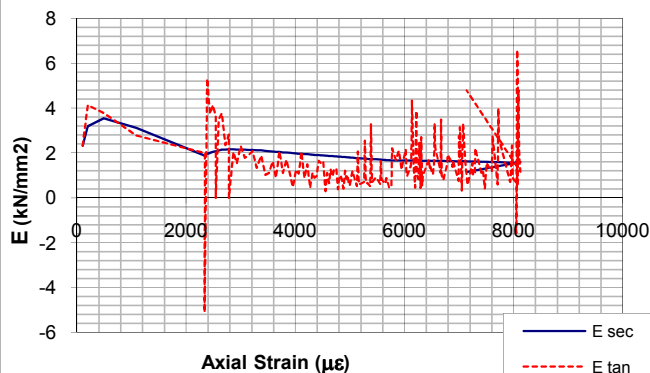
**Compression Curve**



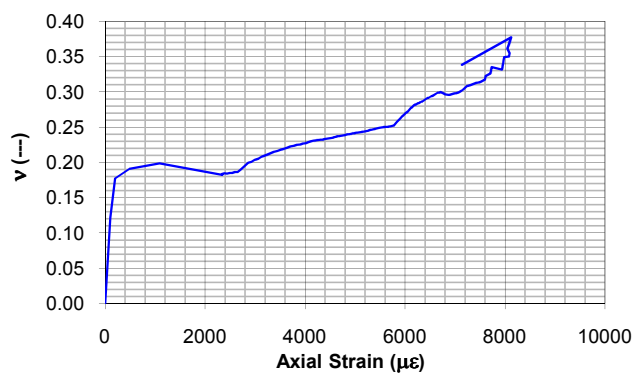
**Compression Curve**



**Strain Modulus**



**Poisson Ratio**



Prepared by:

Jessica Farrugia  
Quality Manager

Approved by:

Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock048
Client address:	27, Marousiou Road, Street 151-25 Maroussi Greece Sardine Street	Site:	Delimara	Date of certificate:	18/10/2014
Attn:	Sfakianakis Costantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock048
				Tested by:	CM

#### Sample Information

Borehole No: G9  
 Depth of Sample: 24  
 Date of Sampling: 15/9/2014  
 Length / Diameter Ratio: 2.12

#### Test Information

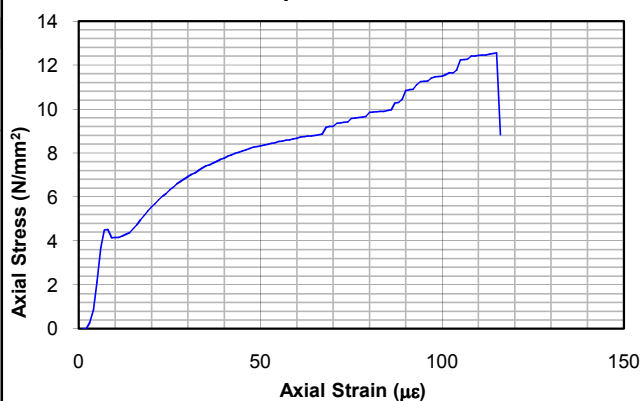
Date of Test: 18/10/2014  
 Date of Preparation: 17/10/2014  
 Type of Gauges Used: 30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

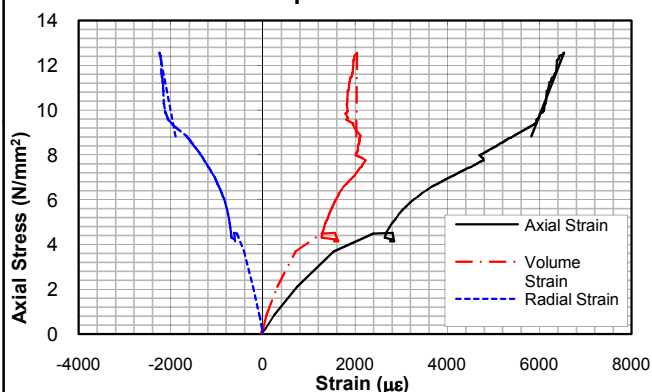
Calculated for axial  $\sigma$ : 6.28 N/mm<sup>2</sup>  
 $E_{medio}$ : 1.59 kN/mm<sup>2</sup>  
 $E_{tan}$ : 1.36 kN/mm<sup>2</sup>  
 $E_{sec}$ : 1.83 kN/mm<sup>2</sup>

Max. strength: 12.56 N/mm<sup>2</sup>  
 Poisson at failure: 0.344  
 Poisson: 0.259

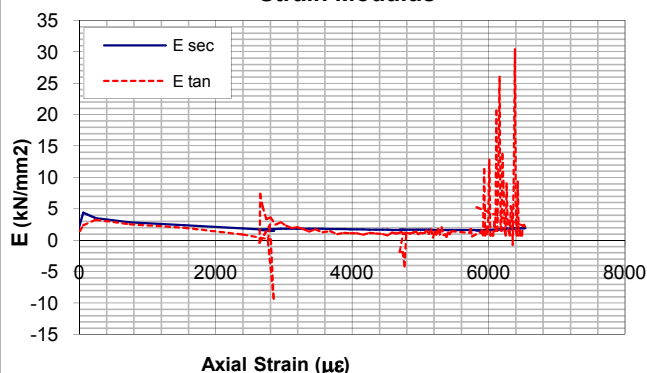
**Compression Curve**



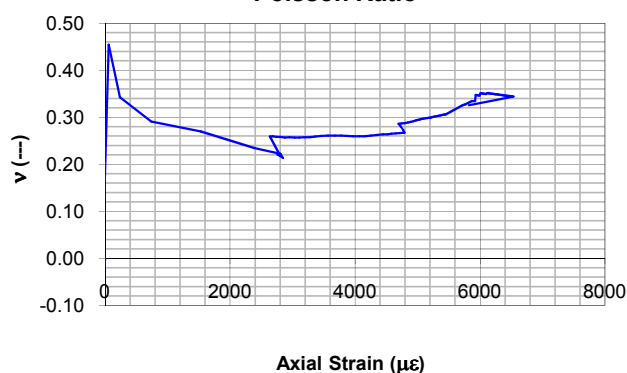
**Compression Curve**



**Strain Modulus**



**Poisson Ratio**



Prepared by:

*Jessica Farrugia*

Jessica Farrugia  
Quality Manager

Approved by:

*Chris Magro*

Chris Magro  
Laboratory Manager

## TEST CERTIFICATE

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength of Rock materials according to ISRM Suggested Method + Annex W

Client Name:	J&P AVAX S.A.	Date of sampling:	15/09/2014	Certificate no:	52
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test:	18/10/2014	Date of certificate:	22/10/2014
Commisioned by:	Giorgos Rousopoulos	Type of Corebarrel:	T286	Job no:	J2094
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Test reference no:	RCC052
Client Tel No:	3.06972E+11	Project:	Onshore & Offshor	Tested by:	CM
				Drill Type:	T44

#### Details of prepared specimens

		<b>BoreHole Number:</b>		
		<b>G9</b>		
		RC 1	RC 2	RC 3
Specimen No:				
Orientation of bedding planes with respect to the test specimen:		Perpendicular	Perpendicular	Perpendicular
Storage condition of specimens:		Air Sealed	Air Sealed	Air Sealed
Depth:		16m	18m	24m
Run No:		n/a	n/a	n/a
Specimen end flat to 0.02mm:		Yes	Yes	Yes
Specimen perpendicular to 0.001 Radian, about 3.5' or 0.05mm/50mm:		Yes	Yes	Yes
Specimen sides smooth and straight to 0.3mm over full length of specimen:		Yes	Yes	Yes
Initial diameter: (Average)	mm	56.4	58.8	58.8
Initial length: (Average)	mm	101	129	125
Initial area:	mm <sup>2</sup>	2498.2	2713.8	2715.0
Initial volume:	mL	252.7	348.9	338.6
Length/diameter ratio:	L/D	<b>1.80</b>	<b>2.18</b>	<b>2.12</b>
Condition as tested:		As received	As received	As received
Mass of specimen	g	535.47	753.27	719.22
Water content (to 0.1%)	%	7.7	7.4	8.6
Bulk Density	kg/m <sup>3</sup>	2119	2159	2124
Dry Density	kg/m <sup>3</sup>	1956.212	1998.156	1942.200

#### Test details

	EQ001 No: 6 (Range 0 - 150kN)	EQ001 No: 6 (Range 0 - 150kN)	EQ001 No: 6 (Range 0 - 150kN)
Machine type/ref:			
Rate of loading	N/min	5000	7000
Stress rate:	Mpa/s	0.033	0.043
Maximum failure load:	kN	26.2	34.7
Test duration:	sec	312	300
Uniaxial compressive strength:	Mpa	10.5	12.8
Average UCS:			12.1
Mode of failure:	Multiple shear	Multiple shear	Shear
Degree of saturation:	100.0	100.0	100.0

Comments/Deviations from suggested method:

Nil

Measurment of Uncertainty:

Nil

Prepared by:

Approved by:




Jessica Farrugia  
Quality Manager

Chris Magro  
Laboratory Manager

# TEST CERTIFICATE

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength of Rock materials according to ISRM Suggested Method + Annex W

Client Name:	J&P AVAX S.A.	Date of sampling:	12/09/2014	Certificate no:	1
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test:	19/09/2014	Date of certificate:	22/09/2014
Commisioned by:	Sfakianakis Costantinos	Type of Corebarrel:	T2 - 86	Job no:	J2094
Attn:	Sfakianakis Costantinos	Location/Town:	Delimara	Test reference no:	RCC001
Client Tel No:	306972019434	Project:	Onshore & Offshore Geotechnical Investigation	Tested by:	MH, LS
				Drill Type:	Mobile Drill

### Details of prepared specimens

		BoreHole Number:		G10
		RC 1	RC 2	RC 4
Specimen No:				
Orientation of bedding planes with respect to the test specimen:		Perpendicular	Perpendicular	Perpendicular
Storage condition of specimens:		Sealed	Sealed	Sealed
Depth:		13.9m	14.7 - 15m	18.6m
Run No:		3	3	4
Specimen end flat to 0.02mm:		Yes	Yes	Yes
Specimen perpendicular to 0.001 Radian, about 3.5' or 0.05mm/50mm:		Yes	Yes	Yes
Specimen sides smooth and straight to 0.3mm over full length of specimen:		Yes	Yes	Yes
Initial diameter: (Average)	mm	61.4	67.2	67.4
Initial length: (Average)	mm	134	156	155
Initial area:	mm <sup>2</sup>	2957.9	3547.2	3566.9
Initial volume:	mL	395.9	553.9	552.6
Length/diameter ratio:	L/D	2.17	2.33	2.31
Condition as tested:		As received	As received	As received
Mass of specimen	g	842.36	1189.4	1172.96
Water content (to 0.1%)	%	16.4	15.9	17.4
Bulk Density	kg/m <sup>3</sup>	2128	2147	2122
Dry Density	kg/m <sup>3</sup>	1778.80	1806.46	1753.76

### Test details

		EQ001 No:6 (Range 0 - 150kN)	EQ001 No:6 (Range 0 - 150kN)	EQ001 No:6 (Range 0 - 150kN)
Machine type/ref:				
Rate of loading	N/min	5500	5000	5000
Stress rate:	Mpa/s	0.031	0.023	0.023
Maximum failure load:	kN	23.2	23.9	23.2
Test duration:	sec	275	308	301
Uniaxial compressive strength:	Mpa	7.8	6.7	6.5
Average UCS:			7.0	
Mode of failure:		Multiple shear	Multiple shear	Multiple shear
Degree of saturation:		100.0	100.0	100.0

Comments/Deviations from suggested method: Sample 1 - Out of time range

Measurment of Uncertainty: Nil

Prepared by:



Jessica Farrugia  
Quality Manager

Approved by:



Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength of Rock materials according to ISRM Suggested Method

Client Name:	J&P AVAX S.A.	Date of sampling:	12/09/2014	Certificate no:	Report002
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test:	19/09/2014	Date of certificate:	22/09/2014
Commisioned by:	Giorgos Rousopoulos	Type of Corebarrel:	T2 - 86	Job no:	J2094
Attn:	Giorgos Rousopoulos	Project:	Onshore & Offshore Geotechnical Investigation	Test reference no:	RCC002
Client Tel No:	306972019434	Location/Town:	Delimara	Tested by:	MH, LS
				Drill Type:	Mobile Drill

#### Details of prepared specimens

#### Borehole number:

#### G10

Specimen No:	RC	5	RC	6	
Orientation of bedding planes with respect to the test specimen:		Perpendicular		Perpendicular	
Storage condition of specimens:		Sealed		Sealed	
Depth:		21.5 - 22.0m		24.6m	
Run No:		5		6	
Specimen end flat to 0.02mm:		Yes		Yes	
Specimen perpendicular to 0.001 Radian, about 3.5' or 0.05mm/50mm:		Yes		Yes	
Specimen sides smooth and straight to 0.3mm over full length of specimen:		Yes		Yes	
Initial diameter:(Average)	mm	65.6		65.5	
Initial length:(Average)	mm	169		162	
Initial area:	mm <sup>2</sup>	3384.9		3370.5	
Initial volume:	mL	573.7		571.2	
Length/diameter ratio:	L/D	2.60		2.46	
Condition as tested:		As received		As received	
Mass of specimen	g	1229.51		1162.02	
Water content (to 0.1%)	%	15.7		15.4	
Pore Volume	m <sup>3</sup>			0.0000197	
Average	m <sup>3</sup>			0.0000197	
Porosity	%			30.08	
Average	%			30.08	
Bulk Density	kg/m <sup>3</sup>	2143		2034	
Average	kg/m <sup>3</sup>			2089	
Dry Density	kg/m <sup>3</sup>	1808		1720	
Average	kg/m <sup>3</sup>			1764	

#### Test details

Machine type/ref:	EQ001 No:6 (Range 0 - 150kN)	EQ001 No:6 (Range 0 - 150kN)	
Rate of loading	N/min	5000	5000
Stress rate:	Mpa/s	0.025	0.025
Maximum failure load:	kN	29.5	33.3
Test duration:	sec	367	415
Uniaxial compressive strength:	Mpa	8.7	9.9
Average UCS:			9.3
Mode of failure:	Multiple shear	Multiple shear	
Degree of saturation:	100.0	100.0	
Comments/Deviations from suggested method:			Nil
Measurment of Uncertainty:			Nil

Prepared by:



Jessica Farrugia  
Quality Manager

Approved by:



Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock049
Client address:	27, Marousiou Pothiarou Street 151-25 Maroussi Greece Sardine Street	Site:	Delimara	Date of certificate:	18/10/2014
Attn:	Sfakianakis Costantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock049
				Tested by:	CM

#### Sample Information

Borehole No: G10  
Depth of Sample: 14.5  
Date of Sampling: 12/9/2014  
Length / Diameter Ratio: 2.19

#### Test Information

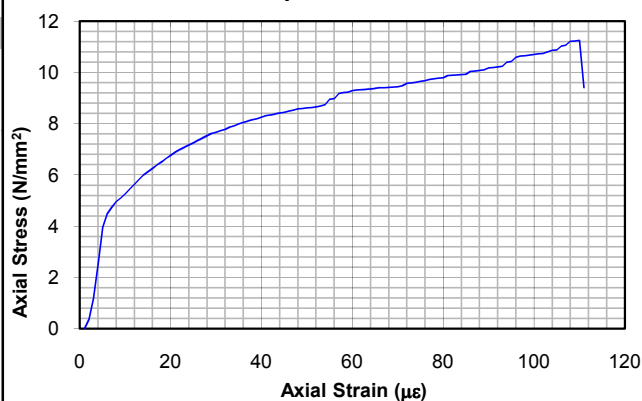
Date of Test: 18/10/2014  
Date of Preparation: 17/10/2014  
Type of Gauges Used: 30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

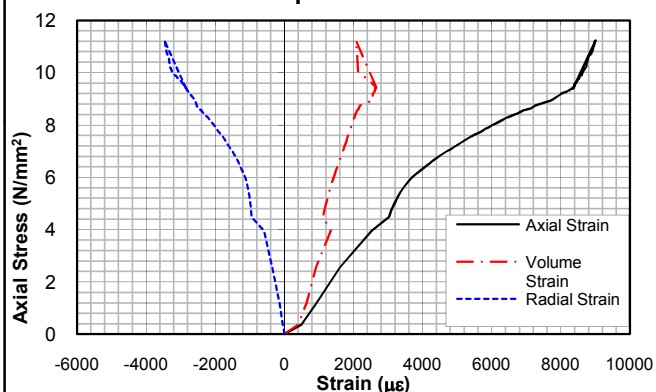
Calculated for axial  $\sigma$ : 5.62 N/mm<sup>2</sup>  
 $E_{\text{medio}}$ : 1.95 kN/mm<sup>2</sup>  
 $E_{\text{tan}}$ : 2.27 kN/mm<sup>2</sup>  
 $E_{\text{sec}}$ : 1.62 kN/mm<sup>2</sup>

Max. strength: 11.24 N/mm<sup>2</sup>  
Poisson at failure: 0.385  
Poisson: 0.307

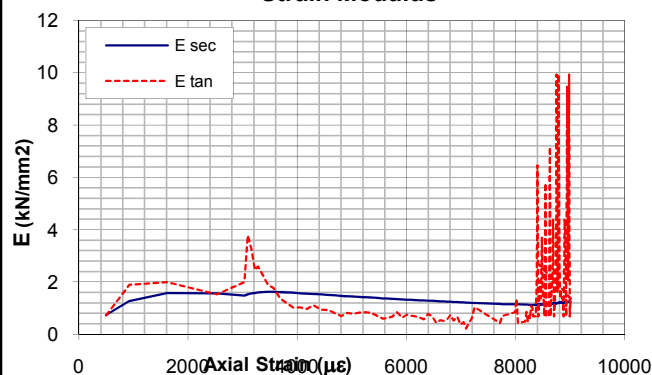
#### Compression Curve



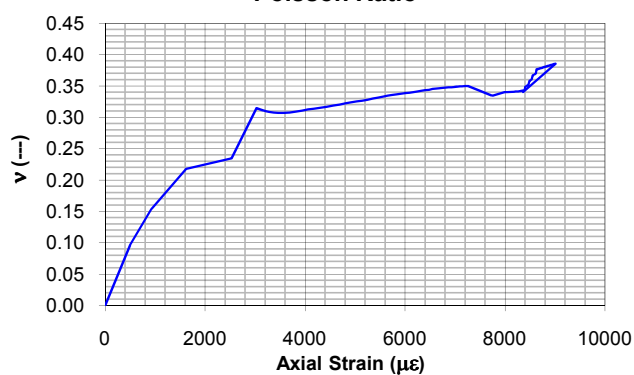
#### Compression Curve



#### Strain Modulus



#### Poisson Ratio



Prepared by:

Jessica Farrugia  
Quality Manager

Approved by:

Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock050
Client address:	27, Marousiou Pionerasia Street 151-25 Maroussi Greece	Site:	Delimara	Date of certificate:	18/10/2014
	Sardine Street	Drill Type:	T44	Job no:	J2094
Attn:	Sfakianakis Costantinos	Type of Corebarrel:	T286	Test reference no:	Rock050
Client Tel No:	3.06972E+11			Tested by:	CM

#### Sample Information

Borehole No: G10  
Depth of Sample: 19  
Date of Sampling: 12/9/2014  
Length / Diameter Ratio: 2.16

#### Test Information

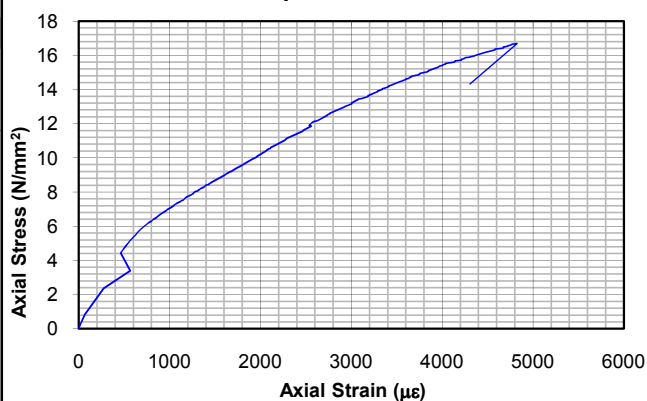
Date of Test: 18/10/2014  
Date of Preparation: 17/10/2014  
Type of Gauges Used: 30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

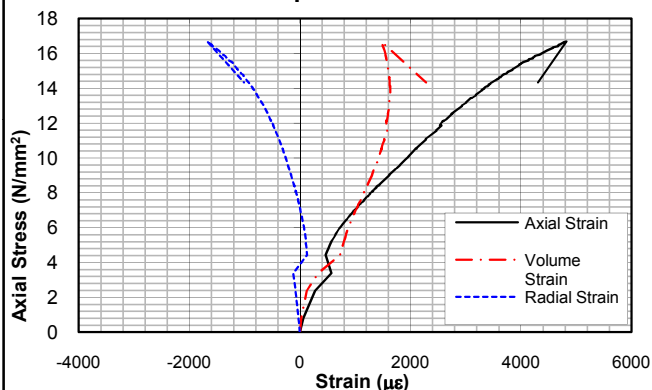
Calculated for axial  $\sigma$ : 8.34 N/mm<sup>2</sup>  
 $E_{\text{medio}}$ : 5.80 kN/mm<sup>2</sup>  
 $E_{\text{tan}}$ : 5.59 kN/mm<sup>2</sup>  
 $E_{\text{sec}}$ : 6.01 kN/mm<sup>2</sup>

Max. strength: 16.68 N/mm<sup>2</sup>  
Poisson at failure: 0.329  
Poisson: 0.066

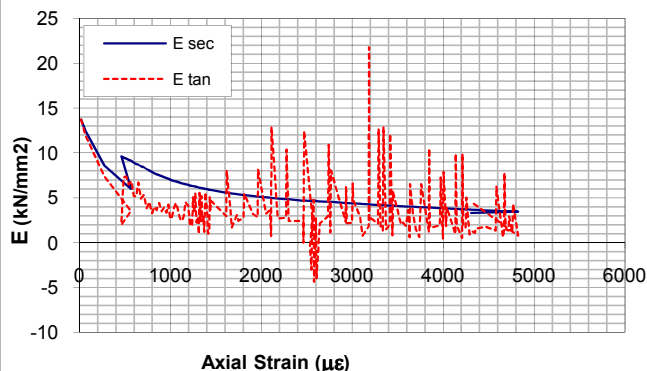
#### Compression Curve



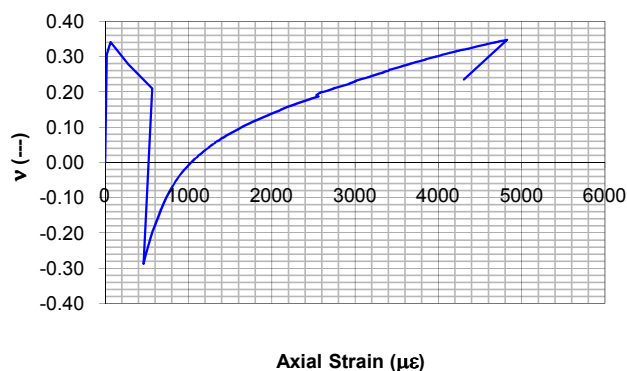
#### Compression Curve



#### Strain Modulus



#### Poisson Ratio



Prepared by:

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Approved by:

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength and Deformability of Rock Materials according to ISRM Suggested Method Part 2

Client Name:	J&P AVAX S.A.	Project:	Onshore & Offshore Geotechnical Investigation	Certificate no:	Rock051
Client address:	27, Marousiou Pothos Street 151-25 Maroussi Greece Sardine Street	Site:	Delimara	Date of certificate:	18/10/2014
Attn:	Sfakianakis Costantinos	Drill Type:	T44	Job no:	J2094
Client Tel No:	3.06972E+11	Type of Corebarrel:	T286	Test reference no:	Rock051
				Tested by:	CM

#### Sample Information

Borehole No: G10  
Depth of Sample: 21.5  
Date of Sampling: 12/9/2014  
Length / Diameter Ratio: 2.17

#### Test Information

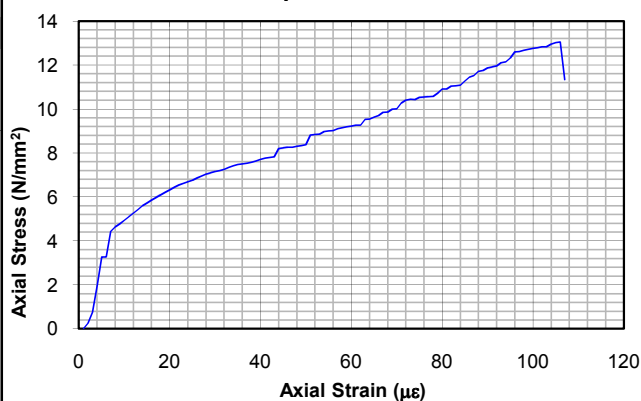
Date of Test: 18/10/2014  
Date of Preparation: 17/10/2014  
Type of Gauges Used: 30mm Strain Gauges

#### Elongation Modulus and Poisson Ratio

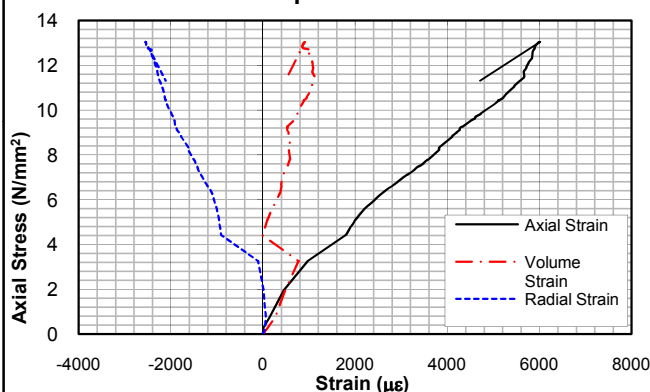
Calculated for axial  $\sigma$ : 6.52 N/mm<sup>2</sup>  
 $E_{\text{medio}}$ : 1.98 kN/mm<sup>2</sup>  
 $E_{\text{tan}}$ : 1.55 kN/mm<sup>2</sup>  
 $E_{\text{sec}}$ : 2.40 kN/mm<sup>2</sup>

Max. strength: 13.04 N/mm<sup>2</sup>  
Poisson at failure: 0.448  
Poisson: 0.427

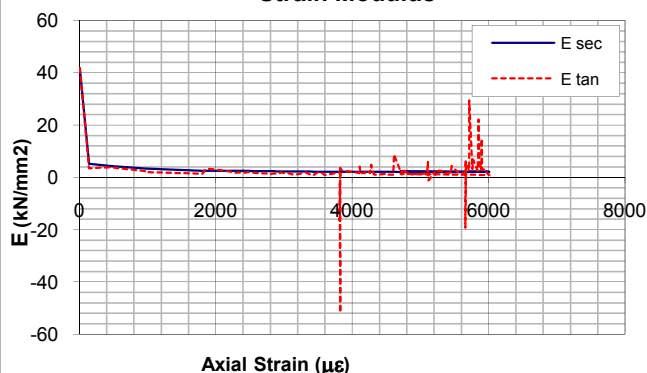
#### Compression Curve



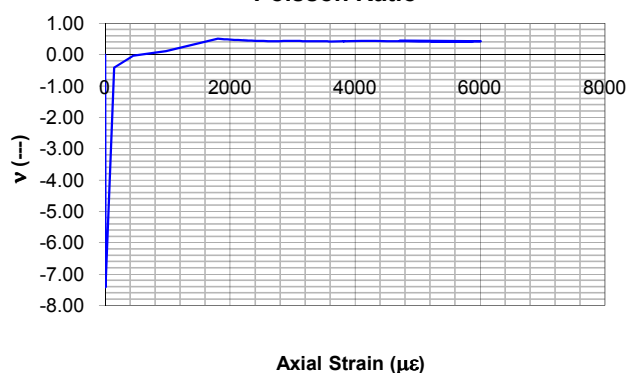
#### Compression Curve



#### Strain Modulus



#### Poisson Ratio



Prepared by:

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Quality Manager

Approved by:

Chris Magro  
Laboratory Manager

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## Laboratory Test Certificate

### Determination of Uniaxial Compressive Strength of Rock materials according to ISRM Suggested Method + Annex W

Client Name:	J&P AVAX S.A.	Date of sampling:	12/09/2014	Certificate no:	53
Client address:	29, Maroussiou Holandriou Street 151-25 Maroussi Greece	Date of test:	18/10/2014	Date of certificate:	22/10/2014
Commisioned by:	Giorgos Rousopoulos	Type of Corebarrel:	T286	Job no:	J2094
Attn:	Giorgos Rousopoulos	Location/Town:	Delimara	Test reference no:	RCC053
Client Tel No:	3.06972E+11	Project:	Onshore & Offshor	Tested by:	CM
				Drill Type:	T44

#### Details of prepared specimens

		BoreHole Number:	
		G10	
Specimen No:	RC 4	RC 5	RC 6
Orientation of bedding planes with respect to the test specimen:	Perpendicular	Perpendicular	Perpendicular
Storage condition of specimens:	Air Sealed	Air Sealed	Air Sealed
Depth:	14.5m	19m	21.5m
Run No:	n/a	n/a	n/a
Specimen end flat to 0.02mm:	Yes	Yes	Yes
Specimen perpendicular to 0.001 Radian, about 3.5' or 0.05mm/50mm:	Yes	Yes	Yes
Specimen sides smooth and straight to 0.3mm over full length of specimen:	Yes	Yes	Yes
Initial diameter: (Average)	mm 58.7	59.2	58.7
Initial length: (Average)	mm 128	128	127
Initial area:	mm <sup>2</sup> 2704.7	2753.4	2708.4
Initial volume:	mL 347.1	352.7	344.8
Length/diameter ratio:	L/D 2.19	2.16	2.17
Condition as tested:	As received	As received	As received
Mass of specimen	g 756.55	801.32	735.3
Water content (to 0.1%)	% 7.7	5.5	7.5
Bulk Density	kg/m <sup>3</sup> 2179	2272	2133
Dry Density	kg/m <sup>3</sup> 2011.800	2147.767	1973.593

#### Test details

		EQ001 No: 6 (Range 0 - 150kN)	EQ001 No: 6 (Range 0 - 150kN)	EQ001 No: 6 (Range 0 - 150kN)
Machine type/ref:				
Rate of loading	N/min	7000	7000	7000
Stress rate:	Mpa/s	0.043	0.042	0.043
Maximum failure load:	kN	30.4	46.2	35.6
Test duration:	sec	257	394	309
Uniaxial compressive strength:	Mpa	11.2	16.8	13.1
Average UCS:			13.7	
Mode of failure:		Multiple shear	Multiple shear	Multiple shear
Degree of saturation:		100.0	100.0	100.0

Comments/Deviations from suggested method:

Nil

Measurment of Uncertainty:

Nil

Prepared by:



Jessica Farrugia  
Quality Manager

Approved by:



Chris Magro  
Laboratory Manager

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