

**LEGEND:**

- Site
- + EM conductivity/gravity reading
- R1 2D resistivity profile
- S1 Seismic refraction profile
- M1 MASW sounding
- TP1  Previous Trial Pit (K denotes black waste on log.)
- ⊗ Monitoring Well

The information displayed here is to be used in conjunction with Report AGL18164\_01 Report on the Geophysical Investigation at Killycard Landfill, Co. Monaghan, APEX Geoservices Ltd. 14-11-2018.

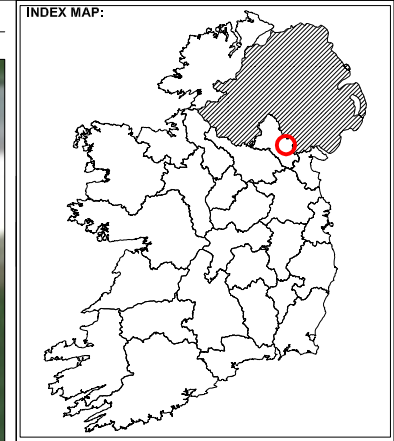
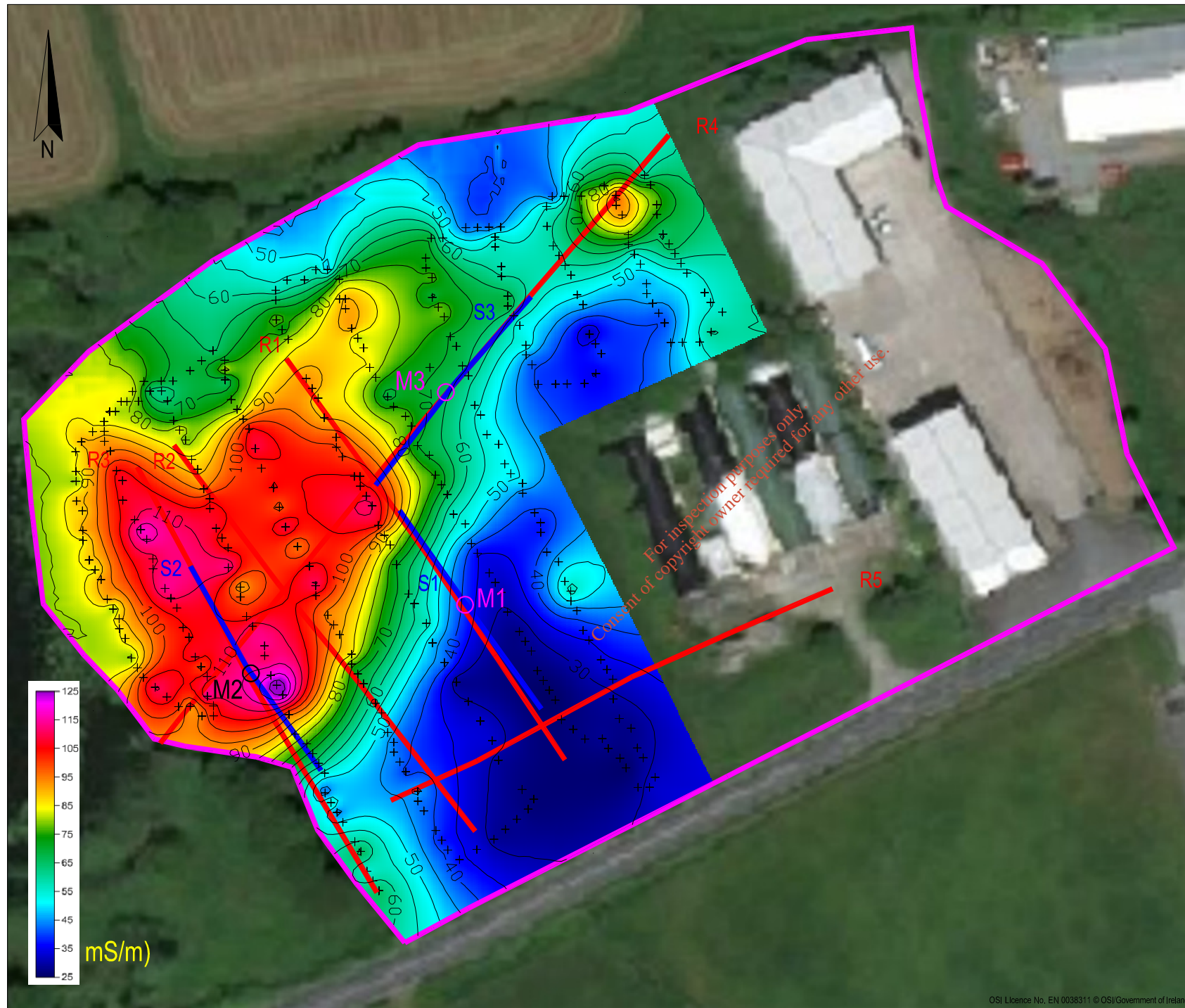
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E info@apexgeoservices.ie  
www.apexgeoservices.ie

PROJECT: KILLYCARD LANDFILL			
GEOPHYSICAL INVESTIGATION			
CLIENT: FEHILY TIMONEY & CO.			
DRAWING NO: AGL18164_01			
SCALE: AS INDICATED @ A4			
DATE: 14-11-2018			
Version:	Date:	Drawn By:	Checked:
01	14-11-2018	POC	YOC

EM CONDUCTIVITY CONTOURS (mS/m)

SCALE 1:1000



**LEGEND:**

- Site
- + EM conductivity/gravity reading
- R1 S1 2D resistivity profile
- S1 Seismic refraction profile
- M1 MASW sounding
- TP1  Previous Trial Pit (K denotes black waste on log.)
- GW Monitoring Well

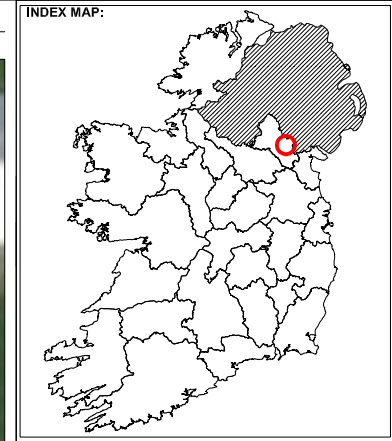
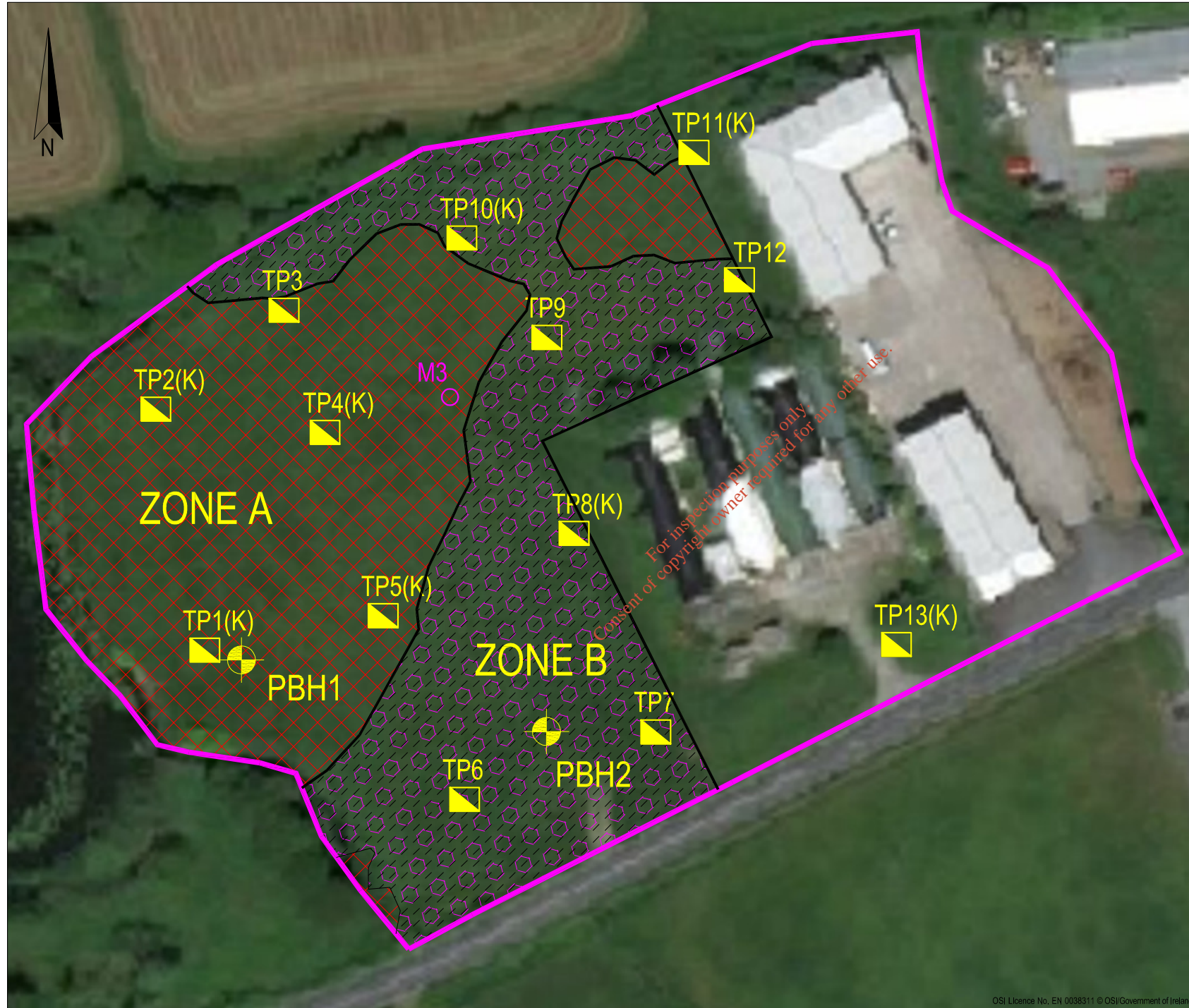
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<b>PROJECT:</b> KILLYCARD LANDFILL			
<b>CLIENT:</b> FEHILY TIMONEY & CO.			
<b>DRAWING NO.:</b> AGL18164_02			
<b>SCALE:</b> AS INDICATED @ A4			
<b>DATE:</b> 14-11-2018			
<b>Version:</b>	<b>Date:</b>	<b>Drawn By:</b>	<b>Checked:</b>
01	14-11-2018	POC	YOC





**LEGEND:**

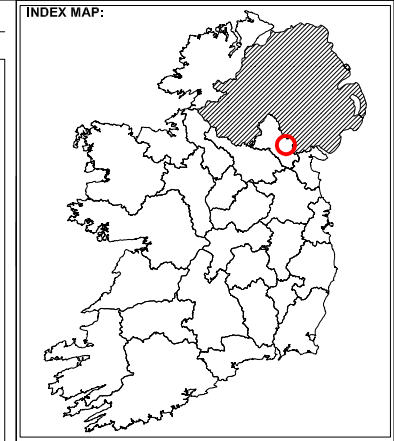
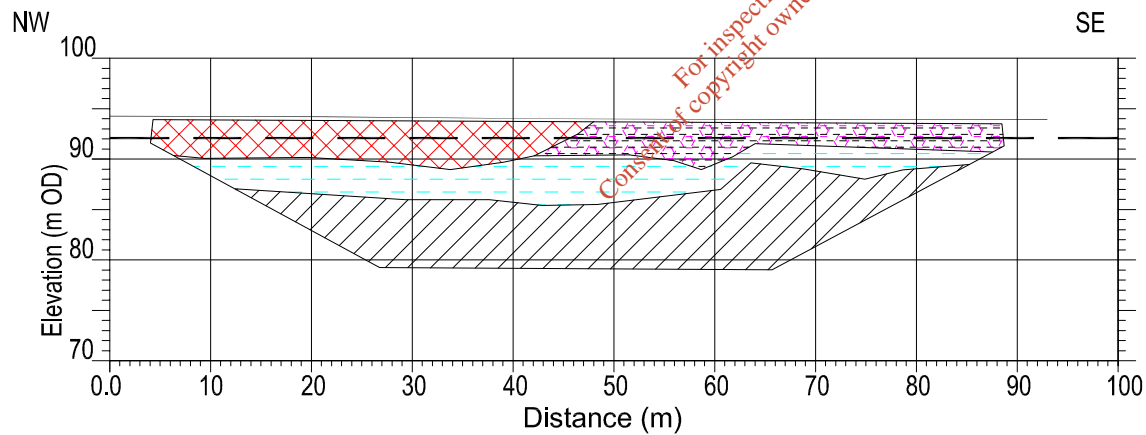
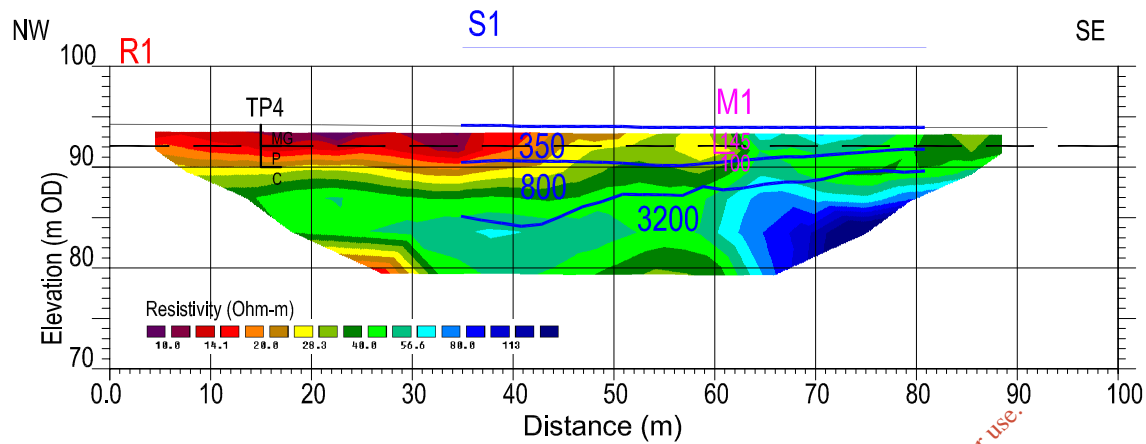
- SITE
- ZONE A - TOPSOIL OVER MADE GROUND/WASTE (PRED. ORGANIC) OVER VERY SOFT PEAT/CLAY WITH LEACHATE
- ZONE B - TOPSOIL OVER MADE GROUND/WASTE (MIXED WITH CLAY/SILT) OVER VERY SOFT PEAT/CLAY
- PROPOSED BOREHOLE

The information displayed here is to be used in conjunction with Report AGL18164\_01 Report on the Geophysical Investigation at Killycard Landfill, Co. Monaghan, APEX Geoservices Ltd. 14-11-2018.

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PROJECT: KILLYCARD LANDFILL			
GEOPHYSICAL INVESTIGATION			
CLIENT: FEHILY TIMONEY & CO.			
DRAWING NO: AGL18164_03			
SCALE: AS INDICATED @ A4			
DATE: 14-11-2018			
Version:	Date:	Drawn By:	Checked:
01	14-11-2018	POC	YOC



**LEGEND:**

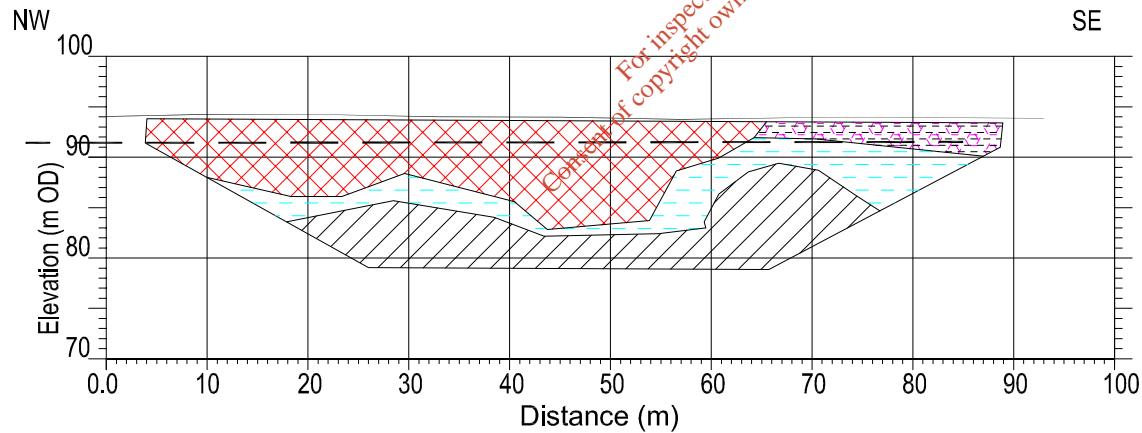
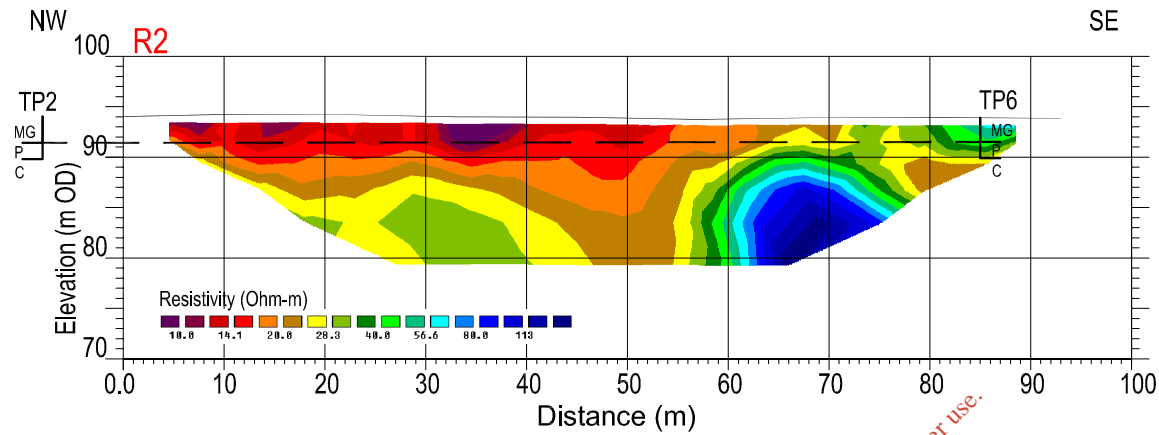
- MADE GROUND/WASTE (PRED. ORGANIC) OVER VERY SOFT PEAT/CLAY WITH LEACHATE
- MADE GROUND/WASTE (MIXED WITH CLAY/SILT) OVER VERY SOFT PEAT/CLAY
- SOFT-FIRM CLAY/SILT
- PYRITIC SHALE/SCHIST BEDROCK
- TP1 Previous Trial Pit Summary
- MG(Made Ground/Waste), P(Peat),C(Clay)**
- Base of waste (from Trial Pits)
- Seismic refraction layer with interpreted P-wave velocity (m/s)
- MASW with S-wave velocity (m/s)
- PBH1 Proposed borehole

The information displayed here is to be used in conjunction with Report AGL18164\_01 Report on the Geophysical Investigation at Killycard Landfill, Co. Monaghan, APEX Geoservices Ltd. 14-11-2018.

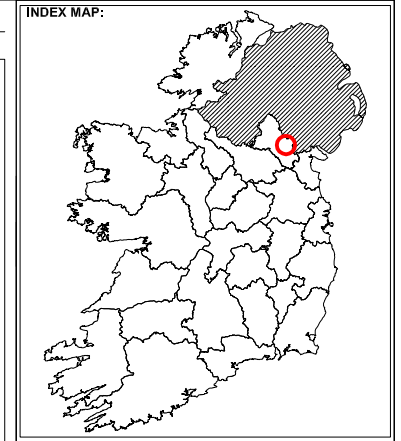


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PROJECT:	KILLYCARD LANDFILL GEOPHYSICAL INVESTIGATION		
CLIENT:	FEHILY TIMONEY & CO.		
DRAWING NO:	AGL18164_R1		
SCALE:	AS INDICATED @ A4		
DATE:	14-11-2018		
Version:	Date:	Drawn By:	Checked:
01	14-11-2018	POC	YOC



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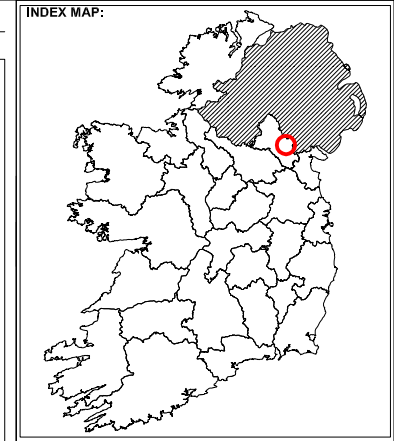
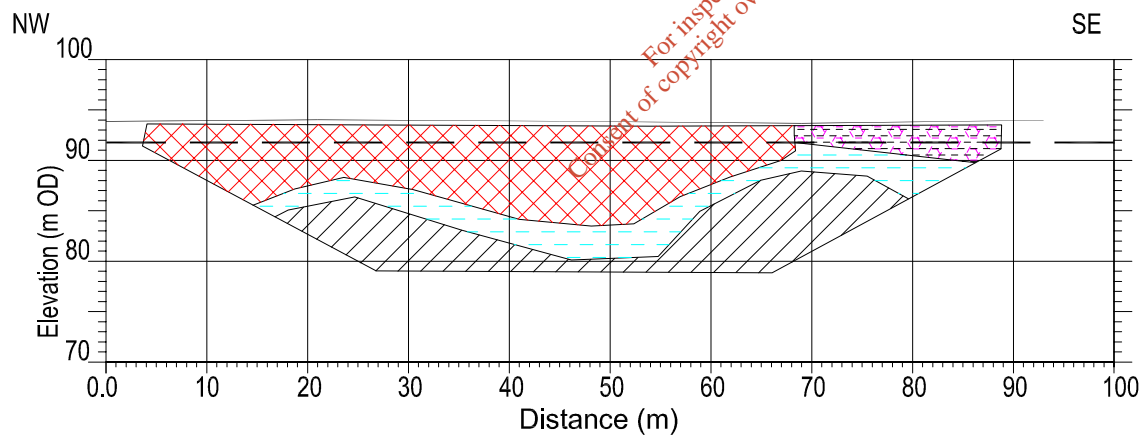
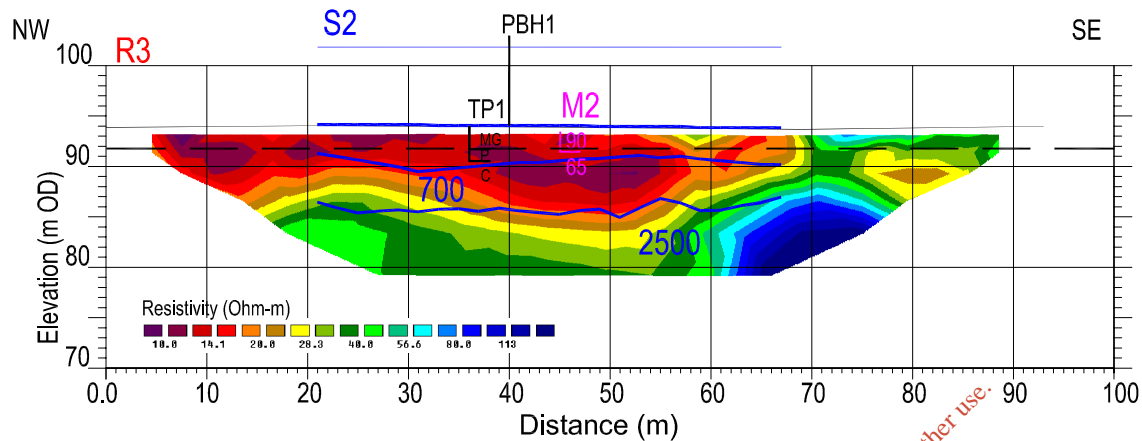
- LEGEND:**
- MADE GROUND/WASTE (PRED. ORGANIC) OVER VERY SOFT PEAT/CLAY WITH LEACHATE
  - MADE GROUND/WASTE (MIXED WITH CLAY/SILT) OVER VERY SOFT PEAT/CLAY
  - SOFT-FIRM CLAY/SILT
  - PYRITIC SHALE/SCHIST BEDROCK
  - TP1 Previous Trial Pit Summary
  - MG(Made Ground/Waste), P(Peat), C(Clay)
  - Base of waste (from Trial Pits)
  - Seismic refraction layer with interpreted P-wave velocity (m/s)
  - MASW with S-wave velocity (m/s)
  - PBH1 Proposed borehole

The information displayed here is to be used in conjunction with Report AGL18164\_01 Report on the Geophysical Investigation at Killycard Landfill, Co. Monaghan, APEX Geoservices Ltd. 14-11-2018.



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PROJECT:	KILLYCARD LANDFILL GEOPHYSICAL INVESTIGATION		
CLIENT:	FEHILY TIMONEY & CO.		
DRAWING NO:	AGL18164_R2		
SCALE:	AS INDICATED @ A4		
DATE:	14-11-2018		
Version:	Date:	Drawn By:	Checked:
01	14-11-2018	POC	YOC



**LEGEND:**

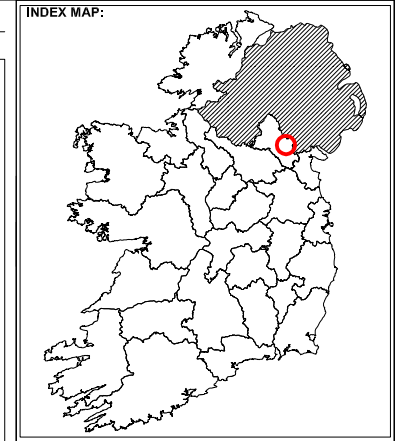
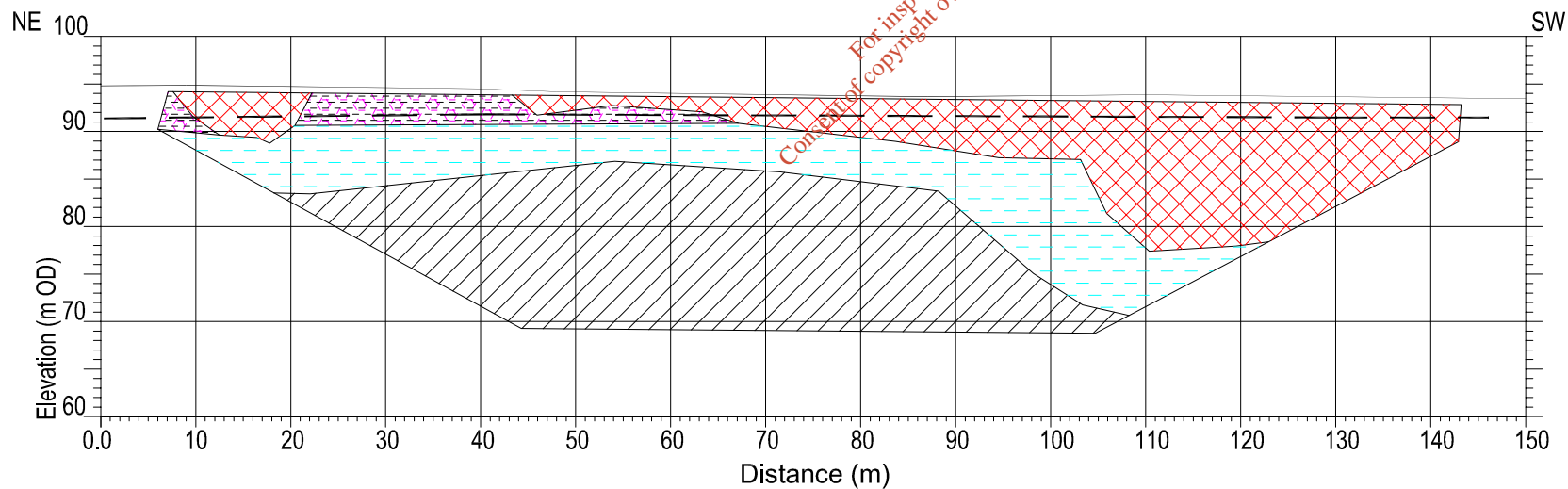
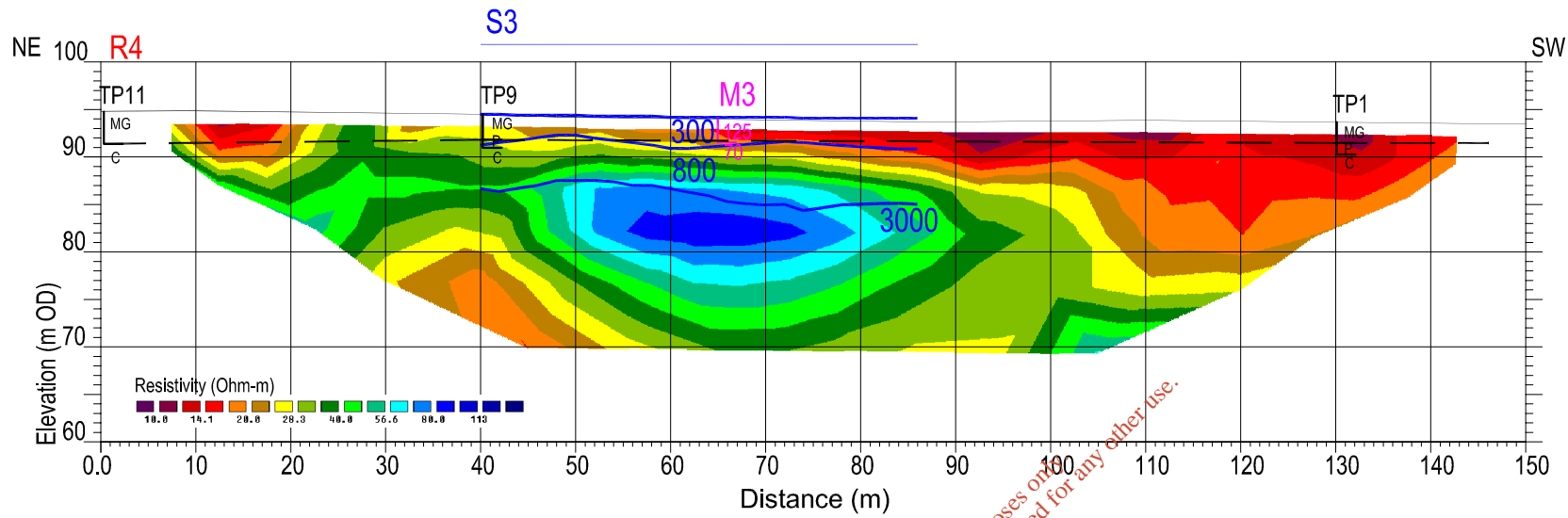
- MADE GROUND/WASTE (PRED. ORGANIC) OVER VERY SOFT PEAT/CLAY WITH LEACHATE
- MADE GROUND/WASTE (MIXED WITH CLAY/SILT) OVER VERY SOFT PEAT/CLAY
- SOFT-FIRM CLAY/SILT
- PYRITIC SHALE/SCHIST BEDROCK
- TP1 Previous Trial Pit Summary
- MG Made Ground/Waste, P(Peat), C(Clay)
- Base of waste (from Trial Pits)
- Seismic refraction layer with interpreted P-wave velocity (m/s)
- MASW with S-wave velocity (m/s)
- PBH1 Proposed borehole

The information displayed here is to be used in conjunction with Report AGL18164\_01 Report on the Geophysical Investigation at Killycard Landfill, Co. Monaghan, APEX Geoservices Ltd. 14-11-2018.

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PROJECT:	KILLYCARD LANDFILL GEOPHYSICAL INVESTIGATION		
CLIENT:	FEHILY TIMONEY & CO.		
DRAWING NO:	AGL18164_R3		
SCALE:	AS INDICATED @ A4		
DATE:	14-11-2018		
Version:	Date:	Drawn By:	Checked:
01	14-11-2018	POC	YOC





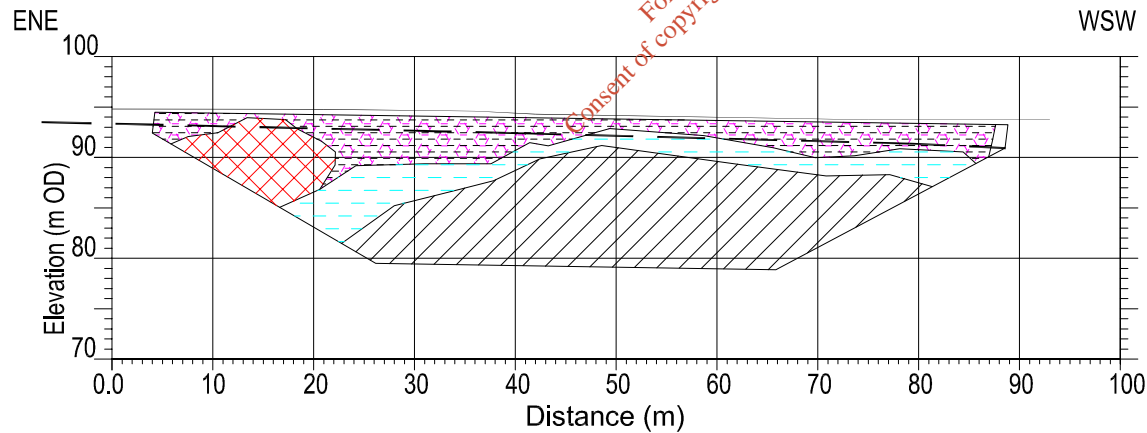
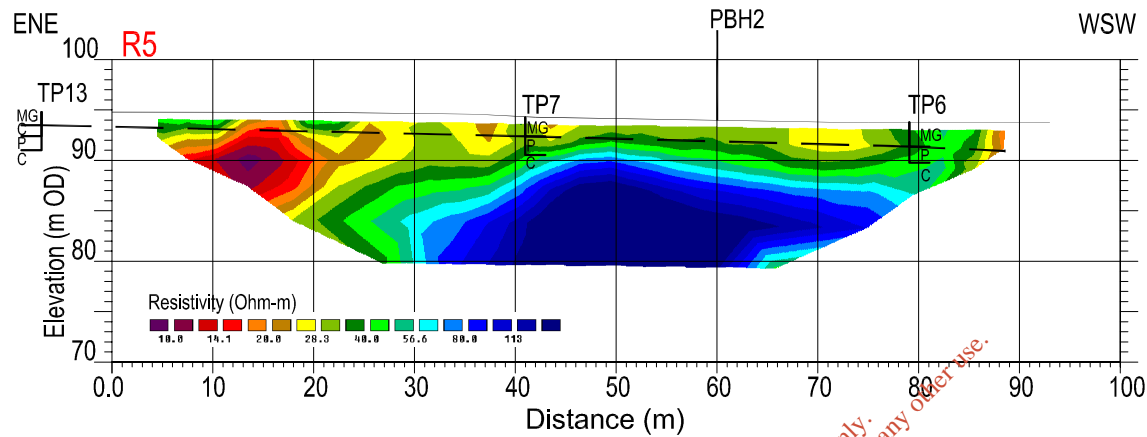
- LEGEND:**
- MADE GROUND/WASTE (PRED. ORGANIC) OVER VERY SOFT PEAT/CLAY WITH LEACHATE
  - MADE GROUND/WASTE (MIXED WITH CLAY/SILT) OVER VERY SOFT PEAT/CLAY
  - SOFT-FIRM CLAY/SILT
  - PYRITIC SHALE/SCHIST BEDROCK
  - TP1 Previous Trial Pit Summary
  - MG(Made Ground/Waste), P(Peat),C(Clay)
  - Base of waste (from Trial Pits)
  - Seismic refraction layer with interpreted P-wave velocity (m/s)
  - MASW with S-wave velocity (m/s)
  - PBH1 Proposed borehole

The information displayed here is to be used in conjunction with Report AGL18164\_01 Report on the Geophysical Investigation at Killycard Landfill, Co. Monaghan, APEX Geoservices Ltd. 14-11-2018.

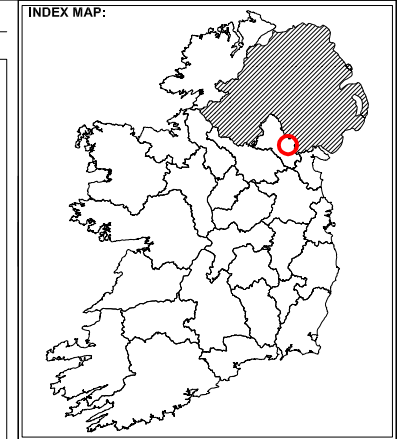
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PROJECT: KILLYCARD LANDFILL			
GEOPHYSICAL INVESTIGATION			
CLIENT: FEHILY TIMONEY & CO.			
DRAWING NO: AGL18164_R5			
SCALE: AS INDICATED @ A4			
DATE: 14-11-2018			
Version:	Date:	Drawn By:	Checked:
01	14-11-2018	POC	YOC



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- LEGEND:**
- MADE GROUND/WASTE (PRED. ORGANIC) OVER VERY SOFT PEAT/CLAY WITH LEACHATE
  - MADE GROUND/WASTE (MIXED WITH CLAY/SILT) OVER VERY SOFT PEAT/CLAY
  - SOFT-FIRM CLAY/SILT
  - PYRITIC SHALE/SCHIST BEDROCK
  - TP1 Previous Trial Pit Summary
  - MG(Made Ground/Waste), P(Peat),C(Clay)**
  - Base of waste (from Trial Pits)
  - Seismic refraction layer with interpreted P-wave velocity (m/s)
  - MASW with S-wave velocity (m/s)
  - PBH1 Proposed borehole

The information displayed here is to be used in conjunction with Report AGL18164\_01 Report on the Geophysical Investigation at Killycard Landfill, Co. Monaghan, APEX Geoservices Ltd. 14-11-2018.

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PROJECT:	KILLYCARD LANDFILL GEOPHYSICAL INVESTIGATION		
CLIENT:	FEHILY TIMONEY & CO.		
DRAWING NO:	AGL18164_R5		
SCALE:	AS INDICATED @ A4		
DATE:	14-11-2018		
Version:	Date:	Drawn By:	Checked:
01	14-11-2018	POC	YOC



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**APPENDIX C: SEISMIC PLATES**

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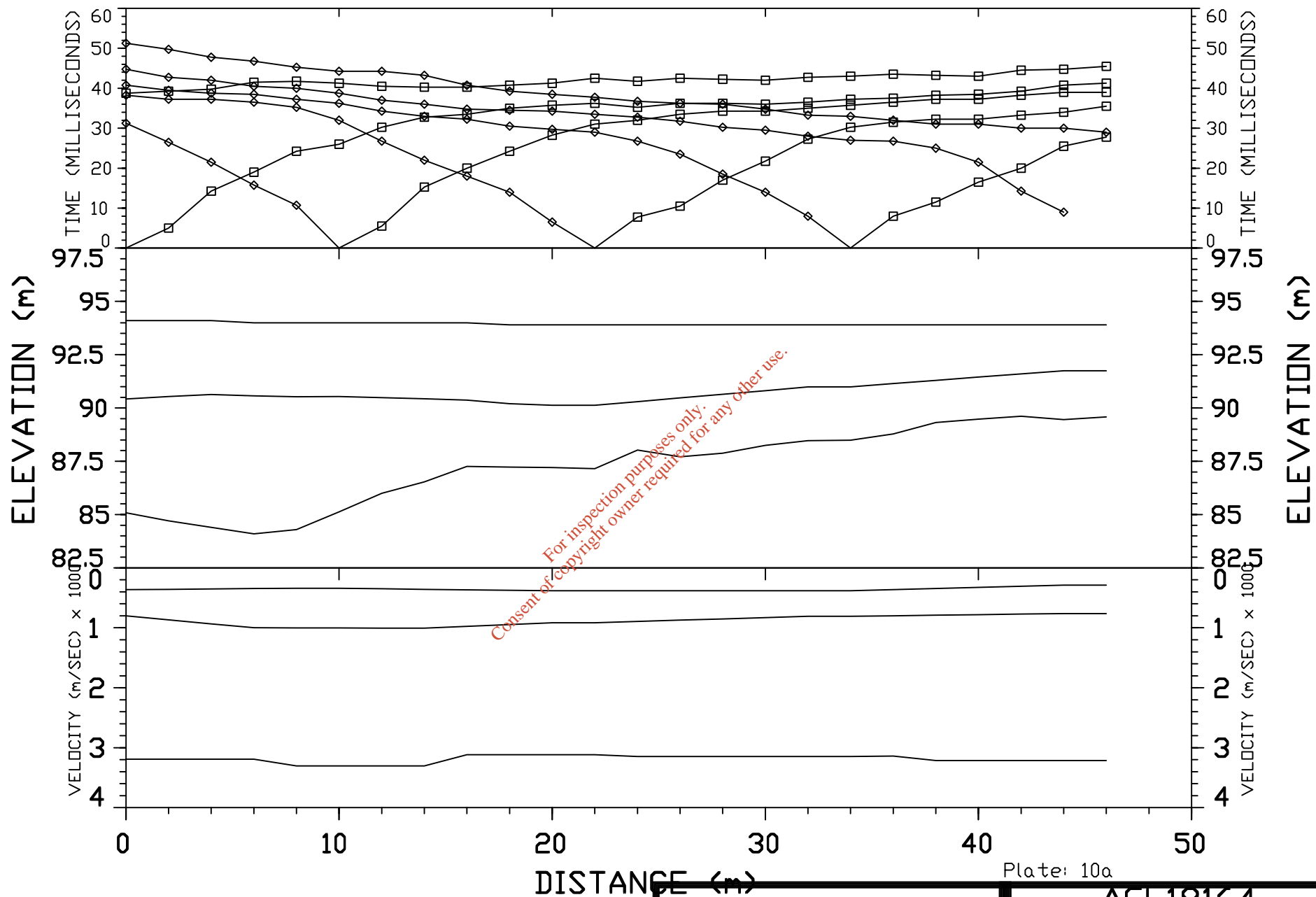


Plate: 10a

for: Fehilly Timoney & Co.

by: APEX Geoservices Ltd.

**Data SetS1**

Date: 5-10-18

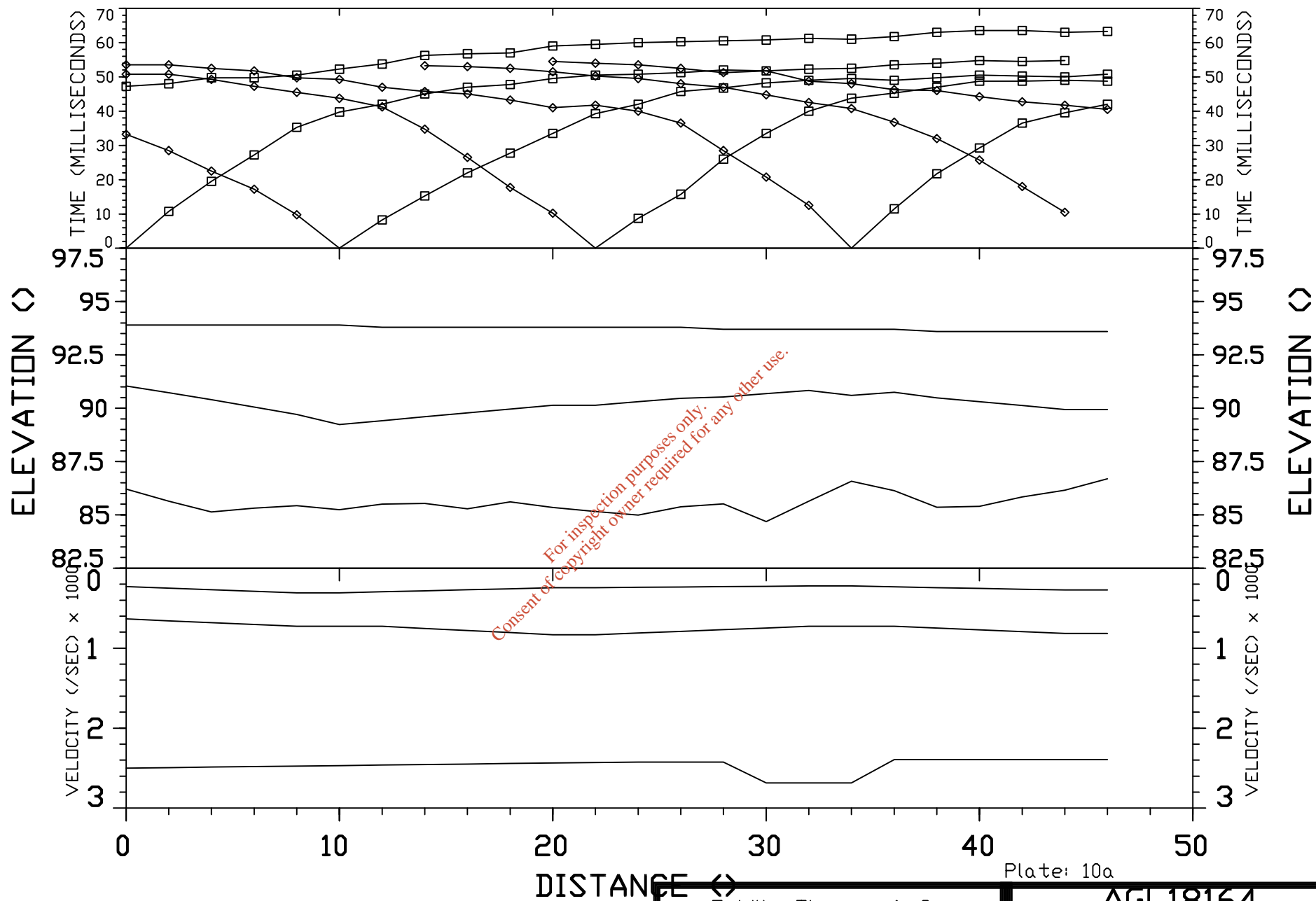
Equipment: Geode

**Spread: 1**

**AGL18164**

**Killicard  
Monaghan**

**Azimuth:**



for: Fehilly Timoney & Co.	
by: APEX Geoservices Ltd.	
<b>Data Set</b> S2	Date: 5-10-18
Equipment: Geode	<b>Spread: 2</b>

<b>AGL18164</b>
<b>Kilycard Monaghan</b>
<b>Azimuth:</b>

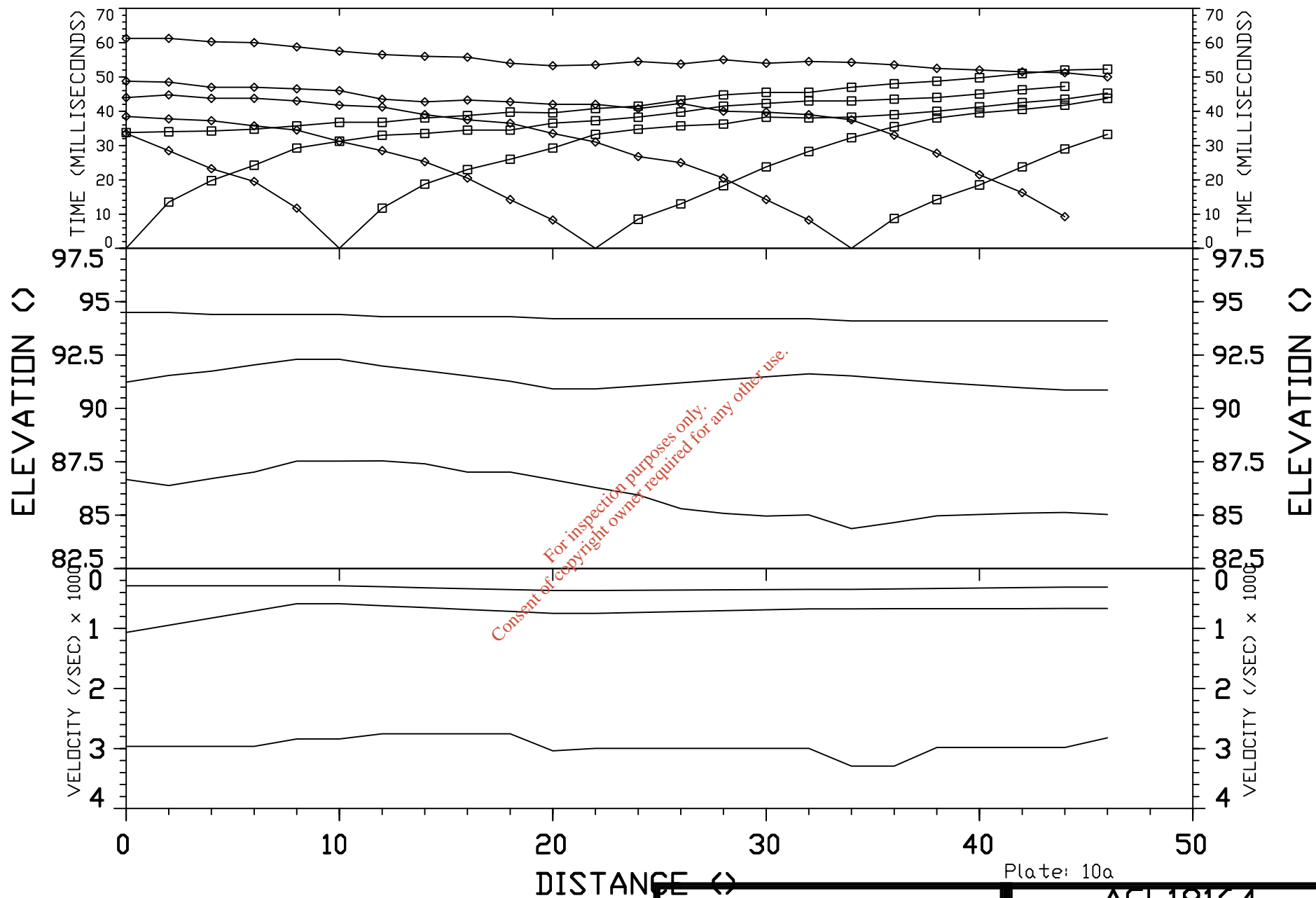


Plate: 10a

for: Fehilly Timoney & Co.

by: APEX Geoservices Ltd.

**Data SetS3**

Date: 5-10-18

Equipment: Geode

**Spread: 3**

**AGL18164**

**Kilycard  
Monaghan**

**Azimuth:**



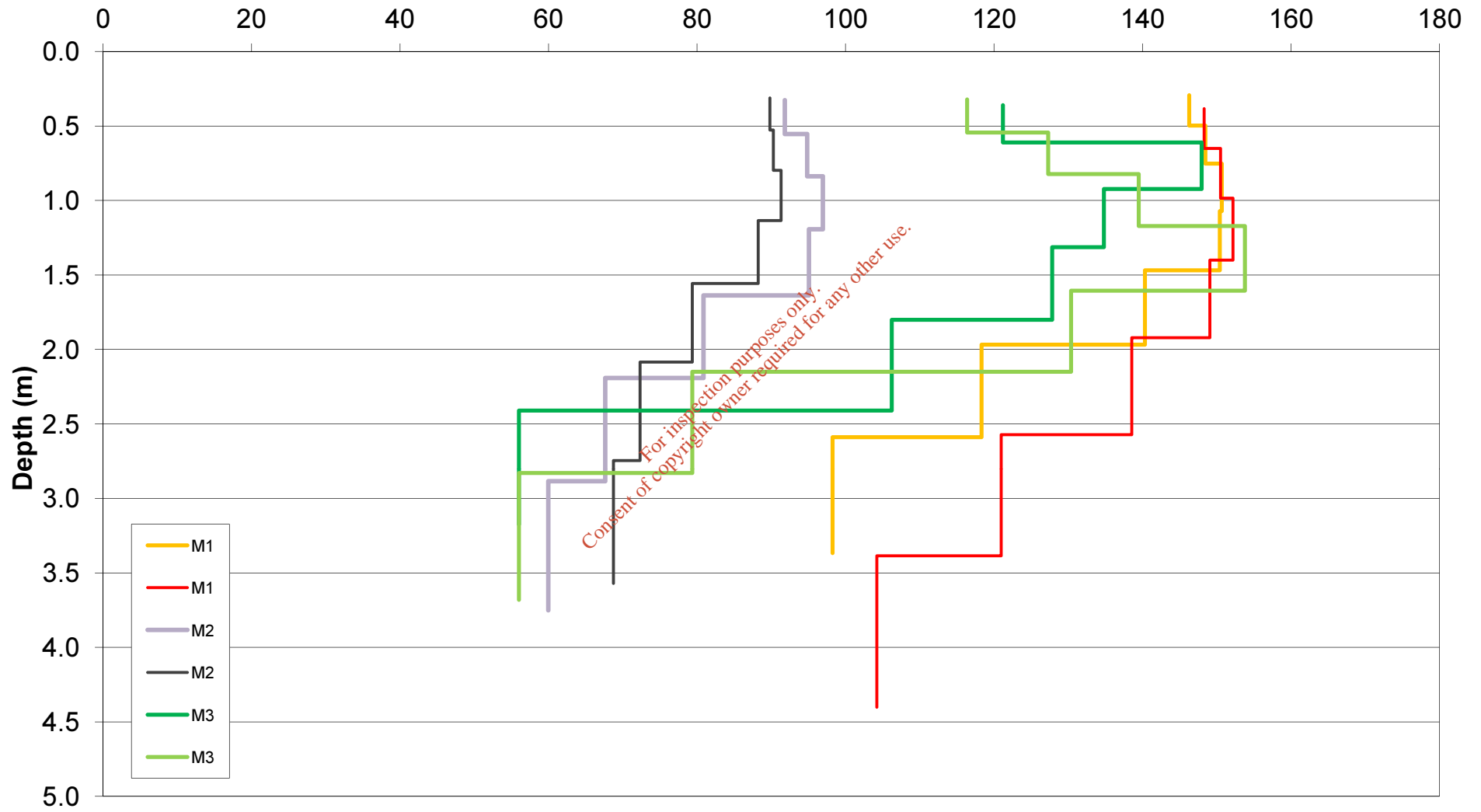
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**APPENDIX D: MASW DATA**

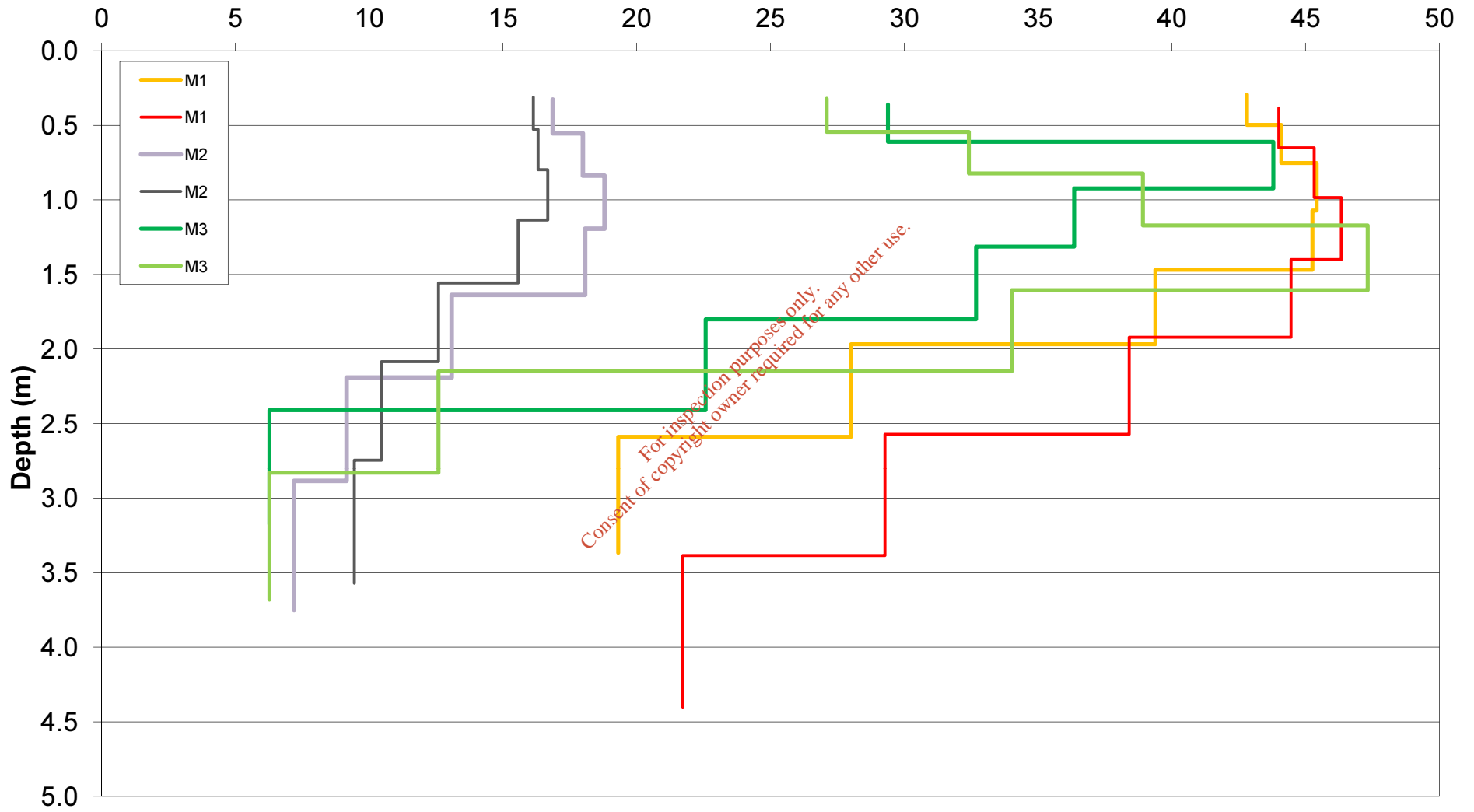
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M1 1004			M1 1013			M2 1019			M2 1028			M3 1034			M3 1043		
Depth m	Vs m/s	Gmax MPa	Depth m	Vs m/s	Gmax MPa	Depth m	Vs m/s	Gmax MPa	Depth m	Vs m/s	Gmax MPa	Depth m	Vs m/s	Gmax MPa	Depth m	Vs m/s	Gmax MPa
0.3	146	43	0.4	148	44	0.3	92	17	0.3	90	16	0.4	121	29	0.3	116	27
0.5	146	43	0.7	148	44	0.6	92	17	0.5	90	16	0.6	121	29	0.5	116	27
0.5	148	44	0.7	151	45	0.6	95	18	0.5	90	16	0.6	148	44	0.5	127	32
0.8	148	44	1.0	151	45	0.8	95	18	0.8	90	16	0.9	148	44	0.8	127	32
0.8	151	45	1.0	152	46	0.8	97	19	0.8	91	17	0.9	135	36	0.8	139	39
1.1	151	45	1.4	152	46	1.2	97	19	1.1	91	17	1.3	135	36	1.2	139	39
1.1	150	45	1.4	149	44	1.2	95	18	1.1	88	16	1.3	128	33	1.2	154	47
1.5	150	45	1.9	149	44	1.6	95	18	1.6	88	16	1.8	128	33	1.6	154	47
1.5	140	39	1.9	139	38	1.6	81	13	1.6	79	13	1.8	106	23	1.6	130	34
2.0	140	39	2.6	139	38	2.2	81	13	2.1	79	13	2.4	106	23	2.2	130	34
2.0	118	28	2.6	121	29	2.2	68	9	2.1	72	10	2.4	56	6	2.2	79	13
2.6	118	28	3.4	121	29	2.9	68	9	2.7	72	10	3.2	56	6	2.8	79	13
2.6	98	19	3.4	104	22	2.9	60	7	2.7	69	9				2.8	56	6
3.4	98	19	4.4	104	22	3.8	60	7	3.6	69	9				3.7	56	6

# Shear wave Velocity, $V_s$ (m/s)



# Gmax (MPa)



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# Appendix VI

## CONTROL SURVEYS TOPOGRAPHICAL MAPPING

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- NOTES:
- All levels are relative to Ordnance Datum Main Head
  - 50m sq grid relative to Irish Transverse Mercator Co-ordinate reference system
  - Contours are at .25m intervals

SYMBOL LEGEND			
AV	Air Valve	SV	Sluice Valve
V	Valve	WV	Water Valve
FH	Fire Hydrant	WM	Water Meter
IC	Inspection Chamber	Post	Post
TD	Telecom Duct	ESB Duct	ESB Duct
TB	Telecom Box	ESB Box	ESB Box
T	Tree	EP	ESB Pole
TS	Tree Spread	TP	Telecom Pole
B/S	Bush/Shrub	LS	Lamp Standard
S	Sign	TS	Traffic Sign
AJ	Armstrong Junction	GY	Gully
ER	Earth Road	Gas	Gas
TL	Traffic Light	B	Bollard
CATV	Cable TV Duct	Bin	Bin
G	Gate	Stay	Stay
M&C	Manhole & Cover Level	Service	Service
S	Survey Station	Pipe	Pipe
RH	Ridge Height	CH	Coping Height
FL	Finished Floor Level	GH	Gutter Height
EH	Eaves Height	RH	Roof Height
BH	Boundary Height	SH	Spot Height

LINE TYPE LEGEND	
Wall	Concrete Edge
Fence	Centerline of Trees
Footpath	Hedge
Drain/River	Step
Flower Bed	Plinth
ESB Line	Telecom Line
Mound	Building
Kerb	Road
Contour Major	Contour Minor
Bottom of Bank	Top of Bank
Yellow Line	White Line



REVISIONS		
No.	Date	Description

**Control Surveys**  
land and building surveys

6 Crestwood, Kilteragh, Doooradyle, Limerick.  
Tel: 087 2659112 email: cian@controlsurveys.ie  
website: www.controlsurveys.ie

- Topographical Surveys
- Measured Building Surveys
- Legal Mapping
- As Built Surveys
- GPS Surveys
- Setting Out

**Client:**

**Professional:**  
Fehilly Timoney & Company

**Project Title:**  
Topographical Survey of Site Located at  
Killycard, Co. Monaghan.  
(Preliminary Issue)

Drawn:	J. P.	Dwg No.:	18-293-01
Scale:	1:500	Date:	13-09-18