

CIVIL GEOTECHNICAL SERVICES ABN 26 474 013 724

PO Box 678 Croydon Vic 3136 Telephone: 9723 0744 Facsimile: 9723 0799

20th October 2023

Our Reference: 22578:NB1727

Winslow Constructors Pty Ltd 50 Barry Road CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING MARIGOLD – STAGE 8 (TARNEIT)

Please find attached our Report No's 22578/R001 to 22578/R008 which relate to the field density testing that was conducted within the filled allotments at the above subdivision. The level 1 inspections and associated field density testing commenced in September 2022 and was completed in February 2023.

The inspections and testing of the earthworks was undertaken in general accordance with the Level 1 requirements of AS 3798 - Guidelines on Earthworks for Commercial and Residential Developments.

The site inspection and testing was performed by experienced geotechnicians from this office. Any areas that were deemed unsatisfactory were reworked and retested under their supervision. The testing was performed to the relevant Australian Standards and the accompanying test reports carry NATA endorsement. The attached compaction results, which were located randomly throughout the fill profile, are considered to be representative of the bulk fill materials that were placed across the reported allotments by Winslow Constructors during the aforementioned period. The approximate locations of the field density tests can be seen on the attached plan (Figure 1).

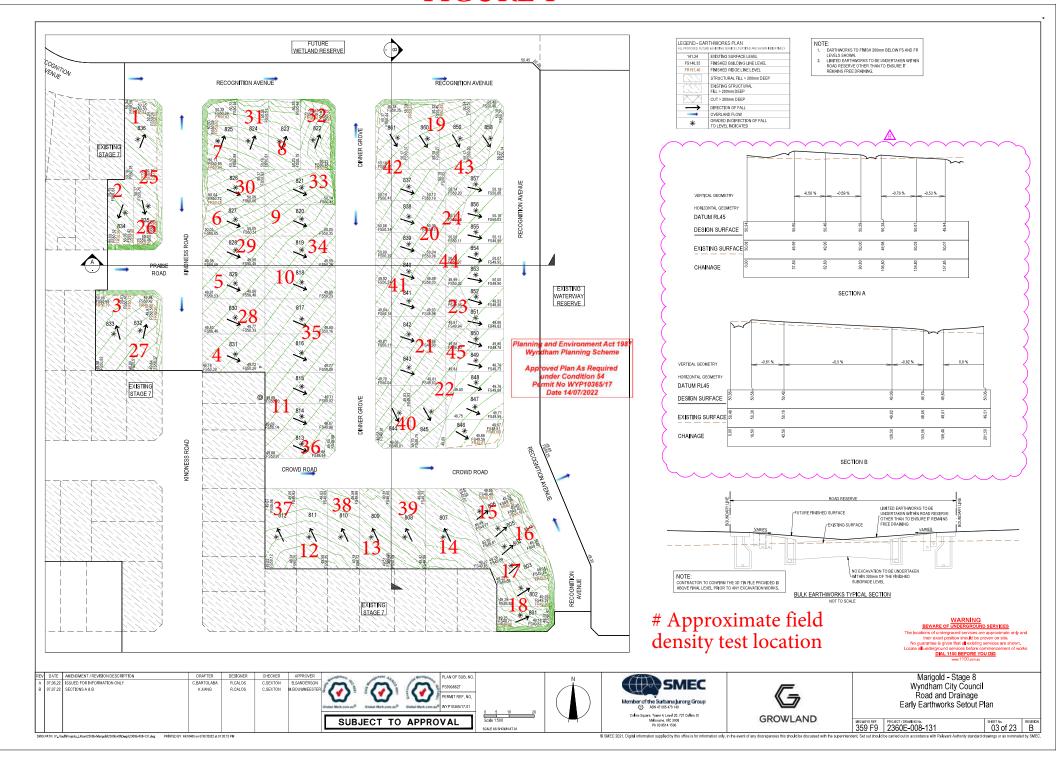
We are of the view that the bulk fill materials that have been placed across the reported allotments by Winslow Constructors during the aforementioned period can be considered as having been placed in a controlled manner to a minimum density ratio of 95% (standard compactive effort).

Please contact the undersigned if you require any additional information.

Civil Geotechnical Services

Nick Brock

FIGURE 1





Location

COMPACTION ASSESSMENT

Job No 22578 **CIVIL GEOTECHNICAL SERVICES** Report No 22578/R001 Date Issued 14/10/2022 6 - 8 Rose Avenue, Croydon 3136 WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD) Tested by JB Client Project MARIGOLD - STAGE 8 Date tested 29/09/22

Feature **EARTHWORKS** Layer thickness 200 mm Time: 13:00

Test procedure AS 1289.2.1.1 & 5.8.1

TARNEIT

Test No		1	2	3	4	5	6
Location							
		REFER	REFER	REFER	REFER	REFER	REFER
		TO	TO	TO	TO	TO	TO
		FIGURE 1					
Approximate depth below FSL							
Measurement depth	mm	175	175	175	175	175	175
Field wet density	t/m³	1.98	1.97	1.96	1.98	1.90	1.94
Field moisture content	%	23.6	23.2	22.9	23.3	26.3	23.4

Test procedure AS 1289.5.7.1

1001 procedure 110 1200.0.7.1							
Test No		1	2	3	4	5	6
Compactive effort				Star	ndard		
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	19.0	19.0
Percent of oversize material	wet	0	0	0	0	0	0
Peak Converted Wet Density	t/m³	2.01	2.02	2.00	2.03	1.95	1.98
Adjusted Peak Converted Wet Density	t/m³	•	-	-	-	-	-
Optimum Moisture Content	%	25.5	25.5	25.0	25.5	28.5	25.5

Moisture Variation From	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Optimum Moisture Content	dry	dry	dry	dry	dry	dry

density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio (R _{HD}) % 98	8.5 98.0	98.5	97.5	98.0	98.0
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Material description

No 1 - 6 Clay Fill

NATA Accredited Laboratory No 9909 Accredited for compliance with ISO/IEC 17025 - Testing

AVRLOT HILF V1.10 MAR 13

Approved Signatory: Justin Fry

Checked by

JHF



 CIVIL GEOTECHNICAL SERVICES
 Job No
 22578

 6 - 8 Rose Avenue, Croydon 3136
 Report No
 22578/R002

 Date Issued
 14/10/2022

ClientWINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)Tested byJBProjectMARIGOLD - STAGE 8Date tested30/09/22LocationTARNEITChecked byJHF

Feature EARTHWORKS Layer thickness 200 mm Time: 12:30

Test procedure AS 1289.2.1.1 & 5.8.1

Test No		7	8	9	10	11	12
Location							
		REFER	REFER	REFER	REFER	REFER	REFER
		ТО	ТО	TO	TO	TO	TO
		FIGURE 1					
Approximate depth below FSL							
Measurement depth	mm	175	175	175	175	175	175
Field wet density	t/m³	1.93	1.90	1.97	2.00	1.90	1.98
Field moisture content	%	20.8	21.3	21.9	20.9	23.6	22.1

Test procedure AS 1289.5.7.1

1001 procedure 710 1200:0:7:1							
Test No		7	8	9	10	11	12
Compactive effort				Stan	ndard		
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	19.0	19.0
Percent of oversize material	wet	0	0	0	0	0	0
Peak Converted Wet Density	t/m³	1.98	2.01	2.02	2.05	1.95	2.04
Adjusted Peak Converted Wet Density	t/m³	-	-	-	-	-	-
Optimum Moisture Content	%	23.0	23.5	24.0	23.0	25.5	24.5

Moisture Variation From	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Optimum Moisture Content	dry	dry	dry	dry	dry	dry

density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

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Material description

No 7 - 12 Clay Fill

NATA Accredited Laboratory No 9909
Accredited for compliance with
ISO/IEC 17025 - Testing

AVRLOT HILF V1.10 MAR 13



 CIVIL GEOTECHNICAL SERVICES
 Job No
 22578

 6 - 8 Rose Avenue, Croydon 3136
 Report No
 22578/R003

 Date Issued
 14/10/2022

ClientWINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)Tested byJBProjectMARIGOLD - STAGE 8Date tested03/10/22LocationTARNEITChecked byJHF

Feature EARTHWORKS Layer thickness 200 mm Time: 12:00

Test procedure AS 1289.2.1.1 & 5.8.1

Test No		13	14	15	16	17	18
Location							
		REFER	REFER	REFER	REFER	REFER	REFER
		TO	TO	TO	TO	TO	TO
		FIGURE 1					
Approximate depth below FSL							
Measurement depth	mm	175	175	175	175	175	175
Field wet density	t/m³	1.99	2.11	2.15	1.99	1.93	1.95
Field moisture content	%	22.6	20.0	22.3	21.9	19.4	21.2

Test procedure AS 1289.5.7.1

1631 procedure A6 1265.5.1.1							
Test No		13	14	15	16	17	18
Compactive effort	pactive effort Standard						
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	19.0	19.0
Percent of oversize material	wet	0	0	0	0	0	0
Peak Converted Wet Density	t/m³	2.10	2.19	2.21	2.04	2.02	2.00
Adjusted Peak Converted Wet Density	t/m³	ı	-	-	-	-	-
Optimum Moisture Content	%	24.5	22.0	24.5	24.0	21.5	23.5

Moisture Variation From	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Optimum Moisture Content	dry	dry	dry	dry	dry	dry

density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio (R _{HD}) %	95.0	96.5	97.5	97.5	95.5	97.5
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Material description

No 13 - 18 Clay Fill

NATA Accredited Laboratory No 9909
Accredited for compliance with
ISO/IEC 17025 - Testing

AVRLOT HILF V1.10 MAR 13



Job No 22578 **CIVIL GEOTECHNICAL SERVICES** Report No 22578/R004 Date Issued 14/10/2022 6 - 8 Rose Avenue, Croydon 3136 WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD) Tested by JB Client Project MARIGOLD - STAGE 8 Date tested 03/10/22 Location **TARNEIT** Checked by JHF

Feature EARTHWORKS Layer thickness 200 mm Time: 12:30

i est	proceaure AS	1289.2.1.1	& 5.8.1

Test No		19	20	21	-	-	-
Location							
		REFER	REFER	REFER			
		TO	TO	TO			
		FIGURE 1	FIGURE 1	FIGURE 1			
Approximate depth below FSL							
Measurement depth	mm	175	175	175	-	-	-
Field wet density	t/m³	2.03	2.01	2.00	-	-	-
Field moisture content	%	22.1	18.2	23.0	-	-	-

Test procedure AS 1289.5.7.1

1001 procedure 110 1200.0.7.1							
Test No		19	20	21	-	-	-
Compactive effort				Star	ndard		
Oversize rock retained on sieve	mm	19.0	19.0	19.0	-	-	-
Percent of oversize material	wet	0	0	0	-	-	-
Peak Converted Wet Density	t/m³	2.06	2.06	2.05	-	-	-
Adjusted Peak Converted Wet Density	t/m³	-	-	-	-	-	-
Optimum Moisture Content	%	24.5	20.5	25.0	-	-	-

Moisture Variation From	2.0%	2.0%	2.0%	-	-	-
Optimum Moisture Content	dry	dry	dry			

density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

	Density Ratio (R _{HD}) %	98.0	98.0	97.5	-	•	-
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Material description

No 19 - 21 Clay Fill

NATA Accredited Laboratory No 9909
Accredited for compliance with
ISO/IEC 17025 - Testing

AVRLOT HILF V1.10 MAR 13



Job No 22578 **CIVIL GEOTECHNICAL SERVICES** Report No 22578/R005 Date Issued 14/10/2022 6 - 8 Rose Avenue, Croydon 3136

WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD) Tested by JB Client Project MARIGOLD - STAGE 8 Date tested 04/10/22 Location **TARNEIT** Checked by JHF

Feature **EARTHWORKS** Layer thickness 200 mm Time: 12:00

Test procedure AS 1289.2.1.1 & 5.8.1

Test No		22	23	24	25	26	27
Location							
		REFER	REFER	REFER	REFER	REFER	REFER
		TO	TO	TO	TO	TO	TO
		FIGURE 1					
Approximate depth below FSL							
Measurement depth	mm	175	175	175	175	175	175
Field wet density	t/m³	2.06	2.06	2.05	1.98	2.01	2.02
Field moisture content	%	19.9	20.6	18.9	20.1	18.6	20.3

Test procedure AS 1289.5.7.1

Tost procedure Ao 1203.0.1.1							
Test No		22	23	24	25	26	27
Compactive effort				Stan	dard		
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	19.0	19.0
Percent of oversize material	wet	0	0	0	0	0	0
Peak Converted Wet Density	t/m³	2.11	2.11	2.10	2.02	2.06	2.07
Adjusted Peak Converted Wet Density	t/m³	-	-	-	-	-	-
Optimum Moisture Content	%	22.0	23.0	21.0	22.0	21.0	22.5

Moisture Variation From	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Optimum Moisture Content	dry	dry	dry	dry	dry	dry

density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio (R _{HD})	%	97.5	97.5	98.0	98.0	97.5	97.5

Material description

No 22 - 27 Clay Fill

NATA Accredited Laboratory No 9909 Accredited for compliance with ISO/IEC 17025 - Testing

AVRLOT HILF V1.10 MAR 13



 CIVIL GEOTECHNICAL SERVICES
 Job No
 22578

 6 - 8 Rose Avenue, Croydon 3136
 Report No
 22578/R006

 Date Issued
 14/10/2022

ClientWINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)Tested byJBProjectMARIGOLD - STAGE 8Date tested05/10/22LocationTARNEITChecked byJHF

Feature EARTHWORKS Layer thickness 200 mm Time: 12:00

Test procedure AS 1289.2.1.1 & 5.8.1

Test No		28	29	30	31	32	33
Location							
		REFER	REFER	REFER	REFER	REFER	REFER
		TO	TO	TO	TO	TO	TO
		FIGURE 1					
Approximate depth below FSL							
Measurement depth	mm	175	175	175	175	175	175
Field wet density	t/m³	1.90	2.02	2.02	1.92	1.90	1.95
Field moisture content	%	21.2	20.2	23.0	21.6	20.6	20.5

Test procedure AS 1289.5.7.1

1001 procedure 110 1200.0.7.1							
Test No		28	29	30	31	32	33
Compactive effort				Stan	dard		
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	19.0	19.0
Percent of oversize material	wet	0	0	0	0	0	0
Peak Converted Wet Density	t/m³	1.95	2.05	2.07	1.95	1.95	2.00
Adjusted Peak Converted Wet Density	t/m³	•	-	-	-	-	•
Optimum Moisture Content	%	23.5	22.5	25.0	24.0	23.0	22.5

Moisture Variation From	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Optimum Moisture Content	dry	dry	dry	dry	dry	dry

density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Material description

No 28 - 33 Clay Fill

NATA Accredited Laboratory No 9909
Accredited for compliance with
ISO/IEC 17025 - Testing

AVRLOT HILF V1.10 MAR 13



Job No 22578 **CIVIL GEOTECHNICAL SERVICES** Report No 22578/R007 Date Issued 22/02/23 6 - 8 Rose Avenue, Croydon 3136 WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD) Tested by Client JB Project MARIGOLD - STAGE 8 Date tested 13/02/23 Location **TARNEIT** Checked by JHF

FeatureEARTHWORKSLayer thickness200 mmTime: 13:00

Test procedure AS	1289.2.1.1 & 5.8.1
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Test No		34	35	36	=	=	-
Location							
		REFER	REFER	REFER			
		TO	TO	TO			
		FIGURE 1	FIGURE 1	FIGURE 1			
Approximate depth below FSL							
Measurement depth	mm	175	175	175	1	-	-
Field wet density	t/m³	1.89	1.90	1.91	-	-	-
Field moisture content	%	24.4	21.7	22.9	-	-	-

Test procedure AS 1289.5.7.1

1001 procedure 110 1200.0.7.1								
Test No		34	35	36	-	-	-	
Compactive effort		Standard						
Oversize rock retained on sieve	mm	19.0	19.0	19.0	-	-	-	
Percent of oversize material	wet	0	0	0	-	-	-	
Peak Converted Wet Density	t/m³	1.96	1.93	1.93	-	-	-	
Adjusted Peak Converted Wet Density	t/m³	•	-	-	-	-	-	
Optimum Moisture Content	%	26.0	22.0	25.0	-	-	-	

Moisture Variation From	1.5%	0.0%	2.0%	-	-	-
Optimum Moisture Content	dry		dry			

density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

	Density Ratio (R _{HD}) %	96.5	98.5	99.5	-	•	-
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Material description

No 34 - 36 Clay Fill



AVRLOT HILF V1.10 MAR 13



 CIVIL GEOTECHNICAL SERVICES
 Job No
 22578

 6 - 8 Rose Avenue, Croydon 3136
 Report No
 22578/R008

 Date Issued
 02/03/23

ClientWINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)Tested byJBProjectMARIGOLD - STAGE 8Date tested16/02/23LocationTARNEITChecked byJHF

Feature EARTHWORKS Layer thickness 200 mm Time: 13:00

Test procedure AS 1289.2.1.1 & 5.8.1

Test No		37	38	39	-	-	-
Location							
		REFER	REFER	REFER			
		ТО	TO	TO			
		FIGURE 1	FIGURE 1	FIGURE 1			
Approximate depth below FSL							
Measurement depth	mm	175	175	175	ı	-	-
Field wet density	t/m³	1.79	1.91	1.90	-	-	-
Field moisture content	%	19.4	23.8	19.2	-	-	-

Test procedure AS 1289.5.7.1

Test No		37	38	39	-	-	-
Compactive effort				Stan	dard		
Oversize rock retained on sieve	mm	19.0	19.0	19.0	-	-	-
Percent of oversize material	wet	0	0	0	-	-	-
Peak Converted Wet Density	t/m³	1.83	1.94	1.94	-	-	-
Adjusted Peak Converted Wet Density	t/m³	-	-	-	-	-	-
Optimum Moisture Content	%	22.0	24.0	20.5	-	-	-

Moisture Variation From	2.5%	0.5%	1.5%	-	-	-
Optimum Moisture Content	dry	dry	dry			

density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

Density Ratio (R _{HD})	%	97.5	98.5	98.0	-	-	-

Material description

No 37 - 39 Clay Fill

NATA Accredited Laboratory No 9909
Accredited for compliance with
ISO/IEC 17025 - Testing

AVRLOT HILF V1.10 MAR 13



 CIVIL GEOTECHNICAL SERVICES
 Job No
 22578

 6 - 8 Rose Avenue, Croydon 3136
 Report No
 22578/R009

 Date Issued
 07/03/23

ClientWINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)Tested byJBProjectMARIGOLD - STAGE 8Date tested17/02/23LocationTARNEITChecked byJHF

Feature EARTHWORKS Layer thickness 200 mm Time: 11:00

Test procedure AS 1289.2.1.1 & 5.8.1

Test No		40	41	42	-	-	-
Location							
		REFER	REFER	REFER			
		TO	ТО	TO			
		FIGURE 1	FIGURE 1	FIGURE 1			
Approximate depth below FSL							
Measurement depth	mm	175	175	175	ı	-	-
Field wet density	t/m³	1.85	1.87	1.86	-	-	-
Field moisture content	%	22.4	22.1	20.0	-	-	-

Test procedure AS 1289.5.7.1

Test No		40	41	42	-	-	-
Compactive effort				Stan	dard		
Oversize rock retained on sieve	mm	19.0	19.0	19.0	-	-	-
Percent of oversize material	wet	0	0	0	-	-	-
Peak Converted Wet Density	t/m³	1.88	1.85	1.89	-	-	-
Adjusted Peak Converted Wet Density	t/m³	-	-	-	-	-	-
Optimum Moisture Content	%	23.5	22.5	22.5	-	-	-

Moisture Variation From	1.0%	0.5%	2.5%	-	-	-
Optimum Moisture Content	dry	dry	dry			

density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

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Density Ratio (R _{HD})	%	99.0	101.0	98.5	-	-	-

Material description

No 40 - 42 Clay Fill

NATA Accredited Laboratory No 9909
Accredited for compliance with
ISO/IEC 17025 - Testing

AVRLOT HILF V1.10 MAR 13



 CIVIL GEOTECHNICAL SERVICES
 Job No
 22578

 6 - 8 Rose Avenue, Croydon 3136
 Report No
 22578/R010

 Date Issued
 24/02/23

ClientWINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD)Tested byJBProjectMARIGOLD - STAGE 8Date tested18/02/23LocationTARNEITChecked byJHF

Feature EARTHWORKS Layer thickness 200 mm Time: 12:00

Test procedure AS 1289.2.1.1 & 5.8.1

Test No		43	44	45	=	=	-
Location							
		REFER	REFER	REFER			
		TO	ТО	TO			
		FIGURE 1	FIGURE 1	FIGURE 1			
Approximate depth below FSL							
Measurement depth	mm	175	175	175	ı	-	-
Field wet density	t/m³	1.92	1.92	1.95	-	-	-
Field moisture content	%	20.7	19.3	21.4	-	-	-

Test procedure AS 1289.5.7.1

Test No	_	43	44	45	-	-	-
Compactive effort				Stan	ndard		
Oversize rock retained on sieve	mm	19.0	19.0	19.0	-	-	-
Percent of oversize material	wet	0	0	0	-	-	-
Peak Converted Wet Density	t/m³	1.95	1.94	2.00	-	-	-
Adjusted Peak Converted Wet Density	t/m³	-	-	-	-	-	-
Optimum Moisture Content	%	23.0	22.0	23.5	-	-	-

Moisture Variation From	2.5%	2.5%	2.0%	-	-	-
Optimum Moisture Content	dry	dry	dry			

density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

	-						
Density Ratio (R _{HD})	%	99.0	99.0	97.5	-	-	-

Material description

No 43 - 45 Clay Fill

NATA Accredited Laboratory No 9909
Accredited for compliance with
ISO/IEC 17025 - Testing

AVRLOT HILF V1.10 MAR 13