



A&R ENGINEERING and TESTING, INC.

Geotechnical & Material Engineers • Registration No. F-4123

GENERAL REPORT

Project:	4130 Gairloch Lane	Client:	Fred Emmite
Project #:	18C11034	Report #:	105214
Date:	02-05-18	Technician:	Marc Aya
Report of:	FIELD DENSITY TESTING / SOIL SAMPLE PICK UP		

A&R technician was dispatched to the above referenced project on 02-08-18 for density testing. Densities were performed on structural fill material . A total of three (3) tests were performed. Results of these tests are provided on report number 105214A. Technician also obtained a sample of structural fill soil for laboratory testing to determine the optimum moisture/density relationship and Atterberg Limits (PI). Results of these tests are provided on report number 105214B.

Left office: 11:45 am
Arrive site: 12:00 pm
Lunch: N/A
Left site: 4:30 pm
Arrive office: 5:15 pm
Total hours: 6.0 hrs

Charges:

Soils Technician:	6.0 hrs.
Standard Proctor:	1 each
Atterberg Limits:	1 each
Density Gauge:	1 each
Vehicle Charge:	1 each

Remarks:

Respectfully Submitted,

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IN-PLACE FIELD DENSITY TEST REPORT

Client: Fred Emmite Date: 02-058-18
 Project: 4130 Gairloch Ln. Project #: 18C11034
 Contractor: Report #: 105214A Page 1 of 1

SPECIFICATIONS: COMPACTION: 95% of ASTM D-698 ASTM D-1557 MOISTURE: +/- 5%

SOIL DESCRIPTION: Reddish brown sandy clay
 PROCTOR #: 4041
 OPTIMUM WATER CONTENT, %: 12.0
 MAXIMUM DRY DENSITY, pcf: 116

TEST NO	TEST LOCATION <i>Pool Backfill</i>	ELEV / LIFT	Probe Depth (in.)	FIELD MOIST		FIELD DENSITY		PROCTOR NUMBER	PERCENT DENSITY
				lbs	%	WET	DRY		
1	Center of Area	1 st lift	6"	22.4	20.3	132.5	110.1	4041	95.0
2	Center of Area	2 nd lift	6"	22.2	19.4	136.7	114.5	4041	98.7
3	Center of Area	3 rd lift	6"	20.4	18.2	132.1	111.7	4041	96.3

TEST PROCEDURES: Density: ASTM D 6938 (Nuclear)
 TEST EQUIPMENT: MAKE: Humboldt MODEL: 5001-EZ SER. #: 1813 MS: 482 DS: 2317
 TEST PERFORMED BY: Marc Aya

Remarks:

Respectfully Submitted,

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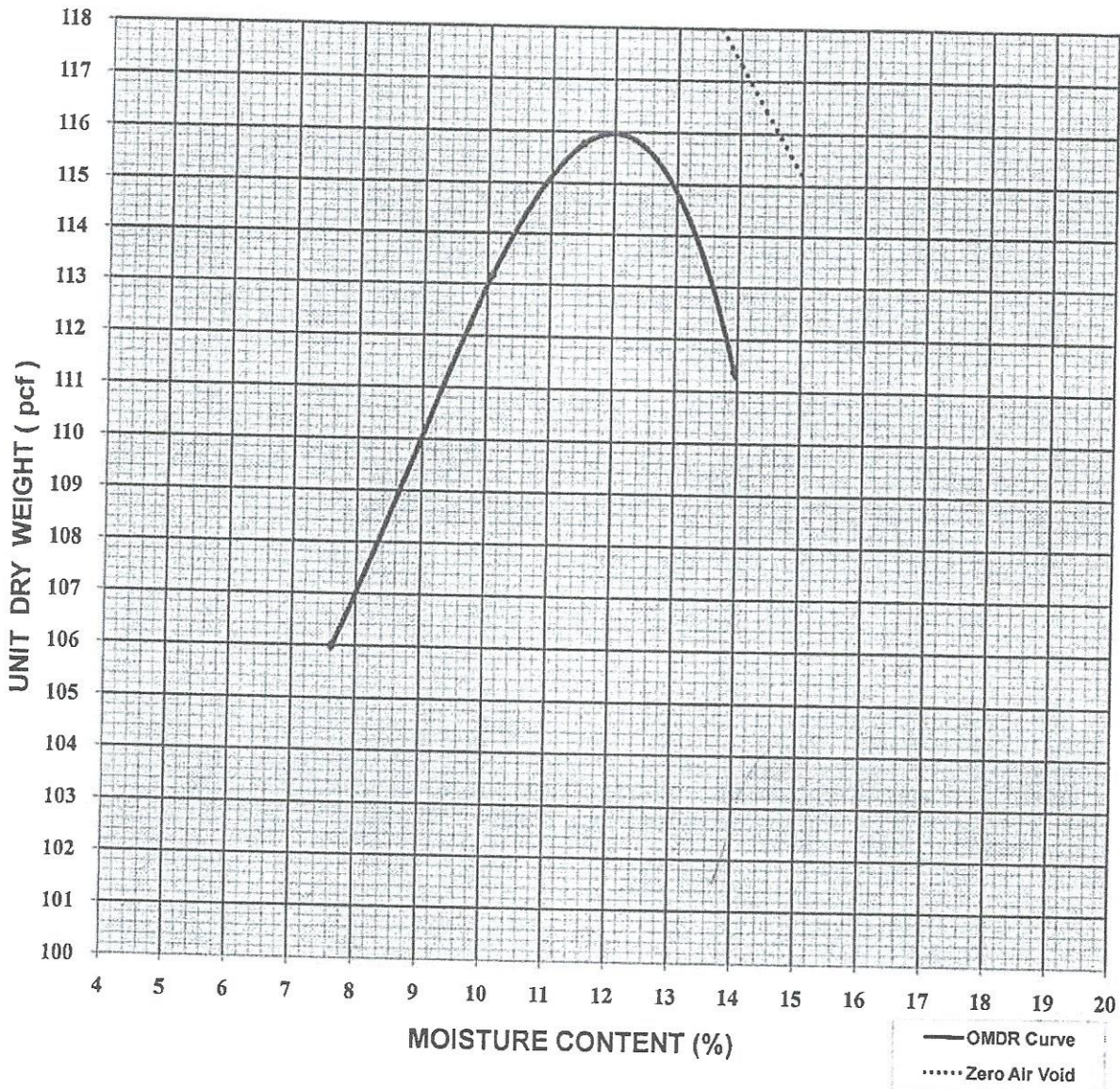
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OPTIMUM MOISTURE/DENSITY RELATIONSHIP OF SOILS

Client: Fred Emmite
 Project: 4130 Gairloch
 Test Method: ASTM D-698 "A"
 Sample Location: on site stockpile
 Optimum Water Content (%): 12
 Liquid Limit (%): 30

Plastic Limit (%): 13

Date: 2/5/2018
 Project No: 18C11034
 Report No./Sample No.: 105214B/4041
 Material Description: Reddish brown sandy clay
 Max. Unit Dry Weight (pcf): 116
 Plasticity Index (%): 17



Estimated Specific Gravity: 2.550

[Signature]
 Respectfully Submitted

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GENERAL REPORT

Project:	4130 Gairloch Ln.	Client:	Fred Emmite
Project #:	18C11034	Report #:	105246
Date:	02-06-18	Technician:	Jim Bolding
Report of:	FIELD DENSITY TESTING		

A&R technician was dispatched to the above referenced project on 02-06-18 for density testing. Densities were performed on pool backfill. A total of four (4) tests were performed. Results of these tests are provided on report number 105246A.

Left office: 10:45 am
Arrive site: 11:30 am
Lunch: N/A
Left site: 12:00 pm
Arrive office: 12:45 pm
Total hours: 2.0 hrs.

Charges:

Soils Technician:	4.0 hrs. (Min)
Density Gauge:	1 each
Vehicle Charge:	1 each

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IN-PLACE FIELD DENSITY TEST REPORT

Client: Fred Emmite Date: 02-06-18
 Project: 4130 Gairloch Ln. Project #: 18C11034
 Contractor: Report #: 105246A Page 1 of 1

SPECIFICATIONS: COMPACTION: 95% of ASTM D-698 √ ASTM D-1557 MOISTURE: as needed

SOIL DESCRIPTION PROCTOR # OPTIMUM WATER CONTENT, % MAXIMUM DRY DENSITY, pcf

Reddish Brown Sandy Clay 4041 12.0 116.0

TEST NO	TEST LOCATION <i>Pool Backfill</i>	ELEV / LIFT	Probe Depth (in.)	FIELD MOIST		FIELD DENSITY		PROCTOR NUMBER	PERCENT DENSITY
				lbs	%	WET	DRY		
1	East end	4 th lift	8"	21.2	19.1	132.5	111.2	4041	95.9
2	West end	5 th lift	8"	20.3	17.9	134.0	113.6	4041	97.9
3	East end	6 th lift	8"	21.6	19.3	133.4	111.8	4041	96.4
4	West end	7 th lift	8"	21.8	19.5	133.8	112.0	4041	96.5

TEST PROCEDURES: Density: ASTM D 6938 (Nuclear)
 TEST EQUIPMENT: MAKE: Humboldt MODEL: 5001-EZ SER. #: 249 MS: 527 DS: 2032
 TEST PERFORMED BY: Jim Bolding

Remarks:

Respectfully Submitted,

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