



To: Taylor Eshpeter, P.Eng. **Date:** September 22, 2025
cc: **Memo No.:** 001
From: Chad Cowan, P.Eng., Andrew Krueger C.E.T. **File:** 704-ENG.WARC04791-01

Subject: Whistle Bend Ph 9 – Lot Fill Placement

Tetra Tech Canada Inc. (Tetra Tech) was retained by the Government of Yukon Department of Community Services, Land Development Branch (YG) to conduct on-site materials testing for construction of Whistle Bend Phase 9, for the 2023 construction season. Construction was completed by YG’s contractors Castle Rock Enterprises, of Whitehorse, YT for Phase 9A and P.S. Sidhu Trucking Ltd., of Whitehorse YT for Phase 9B.

Tetra Tech completed compaction testing during Phase 9 construction activities. Site Grading Field Density Test Summary Report is included as an attachment.

Tetra Tech can confirm that the fill material placed, compacted and tested meets the requirements as engineered/structural fill for safe soil bearing pressure for footings, greater than 75kPa.

If you have any questions or comments, please contact the undersigned.

Respectfully Submitted,
Tetra Tech Canada Inc.

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/et

FIELD DENSITY TEST SUMMARY REPORT

ASTM D6938

PROJECT INFORMATION

Project Number: 704-ENG.WARC03938-23
Project: Whistle Bend Phase 9
Client: Government of Yukon, c/o Government of Yukon
 308 Steele Street Whitehorse, Yukon Y1A 2C5
 Whitehorse Yukon

Attention:

Site: Infrastructure
Tech(s): CSC
Densometer(s): 63324
Report #: 4

TEST INFORMATION

Contractor: Castle Rock Enterprises

Standard Area Name: [Other Info]

Site Grading : [Lot Fill]

Proctor Type: Standard (ASTM D698)

Soil Description(s):

o Sand, some clay : 1680kg/m³ @8.0%
 o Sand : 1750kg/m³ @10.0

Specified Compaction (%): 98.0

Test #	Date	Location	Grade Depth (m)	Probe Depth (mm)	Dry Density (kg/m ³)	MC (%)	Proctor Density (kg/m ³)	MC Opt (%)	MC Range (%)	Cmpct. (%)
1	Jun 12, 2023	Middle of lot 57	-2.00	150	1738	8.1	1750	10.0	8.0 12.0	99.3
2	Jun 12, 2023	Middle of lot 58	-2.00	150	1719	8.0	1750	10.0	8.0 12.0	98.2
3	Jun 13, 2023	Middle of lot 85	-1.30	200	1653	8.6	1680	8.0	6.0 10.0	98.4
4	Jun 13, 2023	Middle of lot 87	-1.30	200	1659	11.5	1680	8.0	6.0 10.0	98.8
5	Jun 13, 2023	Middle of lot 82	-2.00	200	1658	12.7	1680	8.0	6.0 10.0	98.7
6	Jun 13, 2023	Middle of lot 80	-2.00	200	1750	13.9	1750	10.0	8.0 12.0	100.0
7	Jun 13, 2023	Middle of lot 55	-1.30	200	1665	9.5	1680	8.0	6.0 10.0	99.1
8	Jun 13, 2023	Middle of lot 57	-1.70	200	1676	4.3	1680	8.0	6.0 10.0	99.8
9	Jun 14, 2023	Front of lot 1	-1.70	200	1663	10.1	1680	8.0	6.0 10.0	99.0
10	Jun 14, 2023	Middle of lot 7	-1.70	200	1647	13.9	1680	8.0	6.0 10.0	98.0

Remarks:

cc:

Reviewed By:

Name:

Andrew Krueger C.E.T.

Data presented herein is for the sole use of the stipulated client. Tetra Tech Canada Inc. is not responsible nor can be held liable, for use made of this report by any other party, with or without the knowledge of Tetra Tech Canada Inc.. The testing services reported herein have been performed to recognised industry Standards, unless noted. No other warranty is made. These data do not include or represent any interpretation or opinion of specification compliance or material suitability. Should engineering interpretation be required, Tetra Tech Canada Inc. will provide it upon written request.



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Attention:

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Densometer(s): 63324
Report #: 4

TEST INFORMATION

Contractor: Castle Rock Enterprises
Standard Area Name: [Other Info]
Site Grading : [Lot Fill]
Proctor Type: Standard (ASTM D698)
Soil Description(s):

o Sand, some clay : 1680kg/m³ @8.0%

Specified Compaction (%): 98.0

Test #	Date	Location	Grade Depth (m)	Probe Depth (mm)	Dry Density (kg/m ³)	MC (%)	Proctor Density (kg/m ³)	MC Opt (%)	MC Range (%)	Cmpct. (%)
11	Jun 14, 2023	Front of lot 7	-1.40	300	1671	11.5	1680	8.0	6.0 10.0	99.5
12	Jun 14, 2023	Back of lot 2	-1.70	200	1700	7.2	1680	8.0	6.0 10.0	101.2
13	Jun 14, 2023	Middle of lot 1	-1.50	300	1673	7.0	1680	8.0	6.0 10.0	99.6
14	Jun 14, 2023	Front of lot 8	-1.30	300	1649	13.3	1680	8.0	6.0 10.0	98.2
15	Jun 15, 2023	Front of lot 1	-1.10	300	1634	7.1	1680	8.0	6.0 10.0	97.3
16	Jun 15, 2023	Back of lot 7	-1.50	300	1646	9.4	1680	8.0	6.0 10.0	98.0
17	Jun 15, 2023	Middle of lot 7	-1.30	300	1687	7.4	1680	8.0	6.0 10.0	100.4
18	Jun 15, 2023	Front of lot 1	-0.90	300	1689	13.6	1680	8.0	6.0 10.0	100.5
19	Jun 15, 2023	Front of lot 1	-0.90	300	1689	13.6	1680	8.0	6.0 10.0	100.5
20	Jun 16, 2023	Middle of lot 57	-1.10	300	1692	7.6	1680	8.0	6.0 10.0	100.7

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 308 Steele Street Whitehorse, Yukon Y1A 2C5
 Whitehorse Yukon

Attention:

Site: Infrastructure
Tech(s): CSC, GSp
Densometer(s): 63324, 65868
Report #: 4

TEST INFORMATION

Contractor: Castle Rock Enterprises

Standard Area Name: [Other Info]

Site Grading : [Lot Fill]

Proctor Type: Standard (ASTM D698)

Soil Description(s):

o Sand, some clay : 1680kg/m3 @8.0%
 o SILT, sandy : 1680kg/m3 @18.0
 o Sand - trace clay : 1720kg/m3 @8.0% : Est

Specified Compaction (%): 98.0

Test #	Date	Location	Grade Depth (m)	Probe Depth (mm)	Dry Density (kg/m ³)	MC (%)	Proctor Density (kg/m ³)	MC Opt (%)	MC Range (%)	Cmpct. (%)
21	Jun 16, 2023	Front of lot 1	-0.70	300	1664	9.7	1680	8.0	6.0 10.0	99.0
22	Jun 16, 2023	Back of lot 1	-0.80	300	1669	7.3	1680	8.0	6.0 10.0	99.3
23	Jun 16, 2023	Middle of lot 7	-0.90	300	1637	6.9	1680	8.0	6.0 10.0	97.4
24	Jun 16, 2023	Front of lot 2	-0.60	300	1685	7.4	1680	8.0	6.0 10.0	100.3
25	Jun 16, 2023	Front of lot 57	-0.90	300	1684	6.9	1680	8.0	6.0 10.0	100.2
26	Jun 16, 2023	Back of lot 2	0.00	200	1667	12.9	1680	18.0	16.0 20.0	99.2
27	Jun 19, 2023	Middle of lot 82	-0.90	300	1661	6.4	1680	8.0	6.0 10.0	98.9
28	Jun 19, 2023	Front of lot 2	-0.60	300	1668	6.0	1680	8.0	6.0 10.0	99.3
29	Jun 19, 2023	Back of lot 81	-0.90	300	1692	5.1	1680	8.0	6.0 10.0	100.7
30	Jun 20, 2023	Middle of lot 2	-0.50	300	1721	10.7	1720 (Est)	8.0	-2.0 18.0	100.1

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Tech(s): CSC, GSp, PC
Densometer(s): 63324, 65868
Report #: 4

TEST INFORMATION

Contractor: Castle Rock Enterprises

Standard Area Name: [Other Info]

Site Grading : [Lot Fill]

Proctor Type: Standard (ASTM D698)

Soil Description(s):

o SILT, sandy	: 1680kg/m ³ @18.0
o Sand - trace clay	: 1720kg/m ³ @8.0% : Est
o Silty SAND	: 1820kg/m ³ @16.0 : Est
o SAND trace silt	: 1620kg/m ³ @14.0 : Est

Specified Compaction (%): 98.0

Test #	Date	Location	Grade Depth (m)	Probe Depth (mm)	Dry Density (kg/m ³)	MC (%)	Proctor Density (kg/m ³)	MC Opt (%)	MC Range (%)	Cmpct. (%)
31	Jun 20, 2023	Front of lot 6	-1.00	300	1705	9.0	1720 (Est)	8.0	-2.0 18.0	99.1
32	Jun 23, 2023	Middle of lot 100	-0.40	300	1864	14.2	1820 (Est)	16.0	14.0 18.0	102.4
33	Jun 23, 2023	Lot 60	0.00	200	1811	8.0	1820 (Est)	16.0	13.0 19.0	99.5
34	Jun 23, 2023	Lot 63	0.00	200	1785	7.7	1820 (Est)	16.0	13.0 19.0	98.1
35	Jun 23, 2023	Lot 79	0.00	200	1594	5.6	1620 (Est)	14.0	11.0 17.0	98.4
36	Jun 23, 2023	Lot 57	0.00	200	1819	17.5	1820 (Est)	16.0	13.0 19.0	99.9
37	Jun 23, 2023	Lot 56	0.00	200	1822	11.7	1820 (Est)	16.0	13.0 19.0	100.1
38	Jun 24, 2023	Lot 82	0.00	250	1698	7.1	1720 (Est)	8.0	-2.0 18.0	98.7
39	Jun 24, 2023	Lot 56	-0.30	300	1733	4.8	1720 (Est)	8.0	-2.0 18.0	100.8
40	Jun 24, 2023	Lot 56	-0.30	250	1677	4.5	1680	18.0	16.0 20.0	99.8

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TEST INFORMATION

Contractor: Castle Rock Enterprises

Standard Area Name: [Other Info]

Site Grading : [Lot Fill]

Proctor Type: Standard (ASTM D698)

Soil Description(s):

o Sand, some clay	: 1680kg/m3 @8.0%
o SILT, sandy	: 1680kg/m3 @18.0
o SandySilt, trace gravel	: 1850kg/m3 @12.0 : Est
o SAND, Silty	: 1800kg/m3 @15.0 : Est
o silty SAND	: 1920kg/m3 @15.0 : Est

Specified Compaction (%): 98.0

Test #	Date	Location	Grade Depth (m)	Probe Depth (mm)	Dry Density (kg/m ³)	MC (%)	Proctor Density (kg/m ³)	MC Opt (%)	MC Range (%)	Cmpct. (%)
41	Jun 24, 2023	Lot 55	-0.30	250	1813	12.5	1850 (Est)	12.0	10.0 14.0	98.0
42	Jun 24, 2023	Lot 86	0.00	200	1661	8.6	1680	8.0	6.0 10.0	98.9
43	Jun 24, 2023	Lot 100 40m S of 90 + 360	-0.20	250	1672	6.5	1680	18.0	16.0 20.0	99.5
44	Jun 30, 2023	Lot 100 W side	-1.00	250	1936	10.5	1920 (Est)	15.0	12.0 18.0	100.8
45	Jun 30, 2023	Lot 100 Middle	-1.00	250	1767	13.6	1800 (Est)	15.0	13.0 17.0	98.2
46	Jun 30, 2023	Lot 100 E side	-1.00	250	1775	8.2	1800 (Est)	15.0	13.0 17.0	98.6

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