



**Underground Improvements Package for:
Rancho Vistoso Valley-5X & 5W Phase 1A**

Attention: Tom Collins

PHOENIX
1102 West Southern Avenue, Suite 4
Tempe, Arizona 85282
Dispatch 602-272-7890
(o) 602-272-PTX1 (7891)
(f) 602-272-7892



TUCSON
916 West Grant Road
Tucson, Arizona 85705
Dispatch 520-352-0150
(o) 520-352-0150
(f) 520-731-9344

March 02, 2020

Pulte Tucson Land - MS-1021

P.O. Box 3660

Portland, OR 97208

Re: Underground Report

[117170302]

5X and 5W Phase 1A @ Rancho Vistoso Valley Vista

Lot #: Underground Improvements Permit #:

ProTeX Job ID#: 0234Dev-3579-8866

To Whom It May Concern:

In accordance with your request, we have completed the material testing of the underground improvements within the subject project. To the best of my knowledge, the results are in substantial conformance with Pima County and City of Tucson specifications and requirements. Field density tests and lab results are enclosed.

For questions or comments regarding this submittal, please contact the undersigned at (602) 272-PTX1 or engineering@protex-az.com.

Submitted by:

ProTeX - the PT Xperts, L.L.C.



Expires 3/31/2023

Jones Tembo, P.E.

Rancho Vistoso Valley-Phase 1A
Town of Oro Valley, Arizona
ProTeX Job ID: 8866



Dry Utilities



Field Density Summary Report

1/57

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1A

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8866

Lot: Underground

Test Type: Dry Utilities Backfill Upper Zone

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
09/11/2019	Romsdalen Road	STA 28+65	G	8"	119.8	8.5	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
09/11/2019	Romsdalen Road	STA 28+50	G	8"	119.6	8.3	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
09/11/2019	Lauterbrunnen Drive	STA 22+15	G	10"	120.6	9.2	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
09/11/2019	Lauterbrunnen Drive	STA 24+35	G	10"	121.8	8.9	122.1	10.0	100	95 min.	-3 to +3	192000	Pass
09/11/2019	Kalalau Drive	STA 14+20	G	8"	121.2	9.2	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
09/11/2019	Kalalau Drive	STA 12+35	G	8"	120.6	9.1	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
09/11/2019	Romsdalen Road	STA 23+60	G	8"	120.3	8.9	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
09/11/2019	Kalalau Drive	STA 16+40	G	8"	120.7	9.7	122.1	10.0	99	95 min.	-3 to +3	192000	Pass

Rancho Vistoso Valley-Phase 1A
Town of Oro Valley, Arizona
ProTeX Job ID: 8866



Sewer



Field Density Summary Report

2/57

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1A

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8866

Lot: Underground

Test Type: Sewer Line Backfill Lower Zone

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
06/11/2019	Kalalau Drive	STA 18+90	4' BG	6"	119.2	9.1	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
06/11/2019	Kalalau Drive	STA 18+80	3' BG	10"	117.9	10.5	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
06/11/2019	Kalalau Drive	STA 16+50	4' BG	6"	119.3	9.2	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
06/11/2019	Kalalau Drive	STA 28+00	4' BG	8"	119.9	9.1	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
06/11/2019	Kalalau Drive	STA 16+50	2' BG	6"	118.5	8.8	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
06/11/2019	Kalalau Drive	STA 13+50	2' BG	10"	121.7	8.8	122.1	10.0	100	95 min.	-3 to +3	192000	Pass
06/11/2019	Kalalau Drive	STA 15+50	3' BG	10"	112.7	10.3	118.4	9.0	95	95 min.	-3 to +3	191999	Pass
06/11/2019	Kalalau Drive	STA 12+50	4' BG	10"	119.9	8.0	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
06/11/2019	Kalalau Drive	STA 28+00	2' BG	8"	118.6	8.7	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
06/11/2019	Kalalau Drive	STA 11+50	6' BG	10"	117.8	10.3	121.2	10.0	97	95 min.	-3 to +3	191957	Pass
06/11/2019	Kalalau Drive	STA 14+00	4' BG	8"	118.1	8.5	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
06/11/2019	Kalalau Drive	STA 14+00	2' BG	8"	117.2	8.1	122.1	10.0	96	95 min.	-3 to +3	192000	Pass
06/11/2019	Kalalau Drive	STA 19+60	7' BG	10"	117.6	7.4	121.2	10.0	97	95 min.	-3 to +3	191957	Pass
06/11/2019	Kalalau Drive	STA 19+20	5' BG	10"	117.1	8.3	122.1	10.0	96	95 min.	-3 to +3	192000	Pass
06/11/2019	Kalalau Drive	STA 18+90	2' BG	6"	118.2	8.7	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
06/19/2019	Romsdalen Road	STA 28+50	3' BG	10"	114.5	8.2	118.4	9.0	97	95 min.	-3 to +3	191999	Pass
06/19/2019	Romsdalen Road	STA 25+30	3' BG	10"	114.7	8.8	118.4	9.0	97	95 min.	-3 to +3	191999	Pass
06/19/2019	Romsdalen Road	STA 27+00	9' BG	10"	120.1	10.4	121.2	10.0	99	95 min.	-3 to +3	191957	Pass
06/19/2019	Romsdalen Road	STA 28+00	5' BG	10"	116.5	7.9	118.4	9.0	98	95 min.	-3 to +3	191999	Pass



Field Density Summary Report

3/57

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1A

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8866

Lot: Underground

Test Type: Sewer Line Backfill Lower Zone

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
06/19/2019	Romsdalen Road	STA 27+50	7' BG	10"	116.3	8.0	118.4	9.0	98	95 min.	-3 to +3	191999	Pass
06/19/2019	Romsdalen Road	STA 20+50	4' BG	8"	119.6	8.4	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
06/19/2019	Romsdalen Road	STA 20+50	2' BG	8"	119.5	8.2	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
06/19/2019	Romsdalen Road	STA 23+75	2' BG	8"	117.6	8.1	122.1	10.0	96	95 min.	-3 to +3	192000	Pass
06/19/2019	Romsdalen Road	STA 23+75	4' BG	8"	120.4	8.9	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
06/19/2019	Romsdalen Road	STA 25+60	5' BG	10"	115.5	9.5	118.4	9.0	98	95 min.	-3 to +3	191999	Pass
06/19/2019	Romsdalen Road	STA 21+80	3' BG	10"	116.9	7.9	118.4	9.0	99	95 min.	-3 to +3	191999	Pass
06/19/2019	Romsdalen Road	STA 22+00	5' BG	10"	120.0	8.9	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
06/19/2019	Romsdalen Road	STA 20+60	3' BG	10"	116.8	9.8	118.4	9.0	99	95 min.	-3 to +3	191999	Pass
06/19/2019	Romsdalen Road	STA 22+20	7' BG	10"	117.9	7.7	121.2	10.0	97	95 min.	-3 to +3	191957	Pass
06/19/2019	Romsdalen Road	STA 26+20	9' BG	10"	121.5	8.8	121.2	10.0	100	95 min.	-3 to +3	191957	Pass
06/19/2019	Romsdalen Road	STA 25+90	7' BG	10"	116.3	10.0	118.4	9.0	98	95 min.	-3 to +3	191999	Pass
06/19/2019	Romsdalen Road	STA 23+00	2' BG	10"	115.6	6.8	118.4	9.0	98	95 min.	-3 to +3	191999	Pass
06/19/2019	Romsdalen Road	STA 23+60	8' BG	10"	117.5	10.3	121.2	10.0	97	95 min.	-3 to +3	191957	Pass
06/19/2019	Romsdalen Road	STA 23+43	6' BG	10"	116.2	8.4	118.4	9.0	98	95 min.	-3 to +3	191999	Pass
06/19/2019	Romsdalen Road	STA 23+20	4' BG	10"	120.1	8.9	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
06/19/2019	Romsdalen Road	STA 20+40	5' BG	10"	118.8	11.0	121.2	10.0	98	95 min.	-3 to +3	191957	Pass
06/19/2019	Romsdalen Road	STA 20+20	7' BG	10"	116.7	7.6	121.2	10.0	96	95 min.	-3 to +3	191957	Pass
01/30/2020	Sewer Easement	STA 2+88	3' BG	10"	119.8	8.3	122.1	10.0	98	95 min.	-3 to +3	192000	Pass



Field Density Summary Report

4/57

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1A

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8866

Lot: Underground

Test Type: Sewer Line Backfill Lower Zone

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
01/30/2020	Sewer Easement	STA 3+01	7' BG	10"	117.2	8.3	121.2	10.0	97	95 min.	-3 to +3	191957	Pass
01/30/2020	Sewer Easement	STA 2+93	5' BG	10"	118.5	7.9	121.2	10.0	98	95 min.	-3 to +3	191957	Pass
01/30/2020	Sewer Easement	STA 3+60	3' BG	10"	114.2	7.8	118.4	9.0	96	95 min.	-3 to +3	191999	Pass
01/30/2020	Sewer Easement	STA 3+50	7' BG	10"	118.7	7.3	121.2	10.0	98	95 min.	-3 to +3	191957	Pass
01/30/2020	Sewer Easement	STA 3+55	5' BG	10"	121.0	9.8	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
01/30/2020	Sewer Easement	STA 1+70	3' BG	10"	114.9	10.4	118.4	9.0	97	95 min.	-3 to +3	191999	Pass
01/30/2020	Sewer Easement	STA 1+80	5' BG	10"	119.6	8.8	121.2	10.0	99	95 min.	-3 to +3	191957	Pass
01/30/2020	Sewer Easement	STA 1+90	7' BG	10"	120.0	8.9	121.2	10.0	99	95 min.	-3 to +3	191957	Pass
01/30/2020	Sewer Easement	STA 2+60	3' BG	10"	115.5	9.0	118.4	9.0	98	95 min.	-3 to +3	191999	Pass
01/30/2020	Sewer Easement	STA 2+66	5' BG	10"	117.0	9.2	121.2	10.0	97	95 min.	-3 to +3	191957	Pass
01/30/2020	Sewer Easement	STA 2+55	7' BG	10"	116.8	8.0	118.4	9.0	99	95 min.	-3 to +3	191999	Pass



Field Density Summary Report

5/57

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1A

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8866

Lot: Underground

Test Type: Sewer Line Backfill Upper Zone

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
06/17/2019	Kalalau Drive	STA 16+50	1' BG	10"	120.0	9.8	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
06/17/2019	Kalalau Drive	STA 14+50	G	10"	121.7	9.8	121.2	10.0	100	95 min.	-3 to +3	191957	Pass
06/17/2019	Kalalau Drive	STA 18+40	1' BG	10"	119.5	8.6	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
06/17/2019	Kalalau Drive	STA 18+00	G	10"	120.7	8.5	121.2	10.0	100	95 min.	-3 to +3	191957	Pass
06/17/2019	Kalalau Drive	STA 17+20	G	10"	121.3	7.4	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
06/17/2019	Kalalau Drive	STA 14+00	G	8"	117.7	8.3	122.1	10.0	96	95 min.	-3 to +3	192000	Pass
06/17/2019	Kalalau Drive	STA 16+50	G	6"	117.4	8.4	122.1	10.0	96	95 min.	-3 to +3	192000	Pass
06/17/2019	Kalalau Drive	STA 18+90	G	6"	118.4	8.9	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
06/19/2019	Romsdalen Road	STA 29+00	1' BG	10"	114.7	9.4	118.4	9.0	97	95 min.	-3 to +3	191999	Pass
06/19/2019	Romsdalen Road	STA 24+70	G	10"	122.1	8.1	122.1	10.0	100	95 min.	-3 to +3	192000	Pass
06/19/2019	Romsdalen Road	STA 29+50	G	10"	120.3	7.9	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
06/19/2019	Romsdalen Road	STA 25+00	1' BG	10"	120.0	9.8	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
06/19/2019	Romsdalen Road	STA 23+75	G	8"	118.4	8.3	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
06/19/2019	Romsdalen Road	STA 20+50	G	8"	120.3	8.8	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
06/19/2019	Romsdalen Road	STA 21+60	1' BG	10"	121.5	9.1	121.2	10.0	100	95 min.	-3 to +3	191957	Pass
06/19/2019	Romsdalen Road	STA 21+40	G	10"	115.2	9.1	118.4	9.0	97	95 min.	-3 to +3	191999	Pass
06/19/2019	Romsdalen Road	STA 20+41	G	10"	117.0	10.0	121.2	10.0	97	95 min.	-3 to +3	191957	Pass
06/19/2019	Romsdalen Road	STA 22+80	G	10"	115.6	9.5	121.2	10.0	95	95 min.	-3 to +3	191957	Pass
06/19/2019	Romsdalen Road	STA 28+00	G	8"	118.9	8.6	122.1	10.0	97	95 min.	-3 to +3	192000	Pass



Field Density Summary Report

6/57

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1A

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8866

Lot: Underground

Test Type: Sewer Line Backfill Upper Zone

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
06/19/2019	Romsdalen Road	STA 20+80	1' BG	10"	122.2	8.4	122.1	10.0	100	95 min.	-3 to +3	192000	Pass
01/30/2020	Sewer Easement	STA 2+37	G	10"	117.2	11.7	121.2	10.0	97	95 min.	-3 to +3	191957	Pass
01/30/2020	Sewer Easement	STA 3+05	1' BG	10"	118.8	11.0	121.2	10.0	98	95 min.	-3 to +3	191957	Pass
01/30/2020	Sewer Easement	STA 2+86	G	10"	119.6	8.8	121.2	10.0	99	95 min.	-3 to +3	191957	Pass
01/30/2020	Sewer Easement	STA 3+65	1' BG	10"	114.2	10.8	118.4	9.0	96	95 min.	-3 to +3	191999	Pass
01/30/2020	Sewer Easement	STA 3+70	G	10"	121.6	8.9	122.1	10.0	100	95 min.	-3 to +3	192000	Pass
01/30/2020	Sewer Easement	STA 1+60	1' BG	10"	122.2	7.5	122.1	10.0	100	95 min.	-3 to +3	192000	Pass
01/30/2020	Sewer Easement	STA 2+45	1' BG	10"	114.0	9.9	118.4	9.0	96	95 min.	-3 to +3	191999	Pass
01/30/2020	Sewer Easement	STA 1+50	G	10"	121.6	9.8	121.2	10.0	100	95 min.	-3 to +3	191957	Pass



Field Density Summary Report

7/57

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1A

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8866

Lot: Underground

Test Type: Sewer Line Services

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
06/11/2019	Kalalau Drive	STA 13+75 (Lot 6)	G	10"	115.8	8.9	118.4	9.0	98	95 min.	-3 to +3	191999	Pass
06/11/2019	Kalalau Drive	STA 15+10 (Lot 9)	1' BG	10"	119.9	8.1	121.2	10.0	99	95 min.	-3 to +3	191957	Pass
06/11/2019	Kalalau Drive	STA 16+90 (Lot 12)	G	10"	122.3	8.6	122.1	10.0	100	95 min.	-3 to +3	192000	Pass
06/11/2019	Kalalau Drive	STA 15+00 (Lot 119)	1' BG	10"	116.8	8.7	122.1	10.0	96	95 min.	-3 to +3	192000	Pass
06/11/2019	Kalalau Drive	STA 13+00 (Lot 123)	G	10"	118.9	8.7	121.2	10.0	98	95 min.	-3 to +3	191957	Pass
06/11/2019	Kalalau Drive	STA 12+25 (Lot 3)	1' BG	10"	115.9	6.8	118.4	9.0	98	95 min.	-3 to +3	191999	Pass
06/13/2019	Romsdalen Road	STA 25+60 (Lot 30)	G	10"	114.8	7.8	121.2	10.0	95	95 min.	-3 to +3	191957	Pass
06/13/2019	Romsdalen Road	STA 23+90 (Lot 27)	1' BG	10"	115.7	9.3	121.2	10.0	95	95 min.	-3 to +3	191957	Pass
06/13/2019	Romsdalen Road	STA 25+35 (Lot 109)	G	10"	114.5	7.6	118.4	9.0	97	95 min.	-3 to +3	191999	Pass
06/13/2019	Romsdalen Road	STA 23+50 (Lot 112)	1' BG	10"	116.6	8.7	118.4	9.0	99	95 min.	-3 to +3	191999	Pass
06/13/2019	Romsdalen Road	STA 20+50 (Lot 21)	1' BG	10"	114.5	10.2	118.4	9.0	97	95 min.	-3 to +3	191999	Pass
06/13/2019	Romsdalen Road	STA 22+30 (Lot 24)	G	10"	117.2	9.3	118.4	9.0	99	95 min.	-3 to +3	191999	Pass
06/14/2019	Kalalau Drive	STA 19+50 (Lot 18)	G	10"	123.5	6.8	127.8	9.0	97	95 min.	-3 to +3	198360	Pass
06/14/2019	Kalalau Drive	STA 18+10 (Lot 15)	1' BG	10"	116.9	8.2	118.4	9.0	99	95 min.	-3 to +3	191999	Pass
06/14/2019	Kalalau Drive	STA 17+45 (Lot 115)	G	10"	117.5	9.6	118.4	9.0	99	95 min.	-3 to +3	191999	Pass
06/19/2019	Romsdalen Road	STA 28+95 (Lot 103)	G	10"	114.1	9.1	118.4	9.0	96	95 min.	-3 to +3	191999	Pass
06/19/2019	Romsdalen Road	STA 28+45 (Lot 100)	1' BG	10"	114.8	7.9	121.2	10.0	95	95 min.	-3 to +3	191957	Pass
06/19/2019	Romsdalen Road	STA 27+15 (Lot 106)	1' BG	10"	116.4	7.7	118.4	9.0	98	95 min.	-3 to +3	191999	Pass



Field Density Summary Report

8/57

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1A

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8866

Lot: Underground

Test Type: Sewer Manhole Backfill

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
06/11/2019	Kalalau Drive	STA 17+45 (MH #26)	2' BG	6"	118.1	8.3	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
06/11/2019	Kalalau Drive	STA 17+45 (MH #26)	4' BG	6"	119.7	9.5	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
06/11/2019	Kalalau Drive	STA 17+45 (MH #26)	G	6"	117.9	8.1	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
06/17/2019	Kalalau Drive	STA 11+02 (MH #28)	6' BG	10"	121.3	8.8	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
06/17/2019	Kalalau Drive	STA 11+02 (MH #28)	4' BG	10"	120.1	7.9	121.2	10.0	99	95 min.	-3 to +3	191957	Pass
06/17/2019	Kalalau Drive	STA 15+14 (MH #27)	G	10"	118.7	8.4	118.4	9.0	100	95 min.	-3 to +3	191999	Pass
06/17/2019	Kalalau Drive	STA 11+02 (MH #28)	2' BG	10"	116.2	8.4	118.4	9.0	98	95 min.	-3 to +3	191999	Pass
06/17/2019	Kalalau Drive	STA 11+02 (MH #28)	G	10"	118.1	10.1	118.4	9.0	100	95 min.	-3 to +3	191999	Pass
06/17/2019	Kalalau Drive	STA 15+14 (MH #27)	3' BG	10"	121.1	8.7	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
06/17/2019	Kalalau Drive	STA 15+14 (MH #27)	1' BG	10"	121.0	8.5	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
06/19/2019	Romsdalen Road	STA 22+42 (MH #4)	5' BG	10"	116.4	9.9	121.2	10.0	96	95 min.	-3 to +3	191957	Pass
06/19/2019	Romsdalen Road	STA 22+42 (MH #4)	3' BG	10"	115.4	7.8	121.2	10.0	95	95 min.	-3 to +3	191957	Pass
06/19/2019	Romsdalen Road	STA 22+42 (MH #4)	1' BG	10"	121.8	8.9	122.1	10.0	100	95 min.	-3 to +3	192000	Pass
06/19/2019	Romsdalen Road	STA 21+03 (MH #3)	2' BG	10"	116.1	9.6	118.4	9.0	98	95 min.	-3 to +3	191999	Pass
06/19/2019	Romsdalen Road	STA 21+03 (MH #3)	G	10"	115.2	7.5	121.2	10.0	95	95 min.	-3 to +3	191957	Pass
06/19/2019	Romsdalen Road	STA 22+42 (MH #4)	7' BG	10"	117.5	8.5	121.2	10.0	97	95 min.	-3 to +3	191957	Pass
06/19/2019	Romsdalen Road	STA 23+80 (MH #5)	4' BG	10"	113.4	9.5	118.4	9.0	96	95 min.	-3 to +3	191999	Pass
06/19/2019	Romsdalen Road	STA 23+80 (MH #5)	2' BG	10"	116.5	7.5	121.2	10.0	96	95 min.	-3 to +3	191957	Pass
06/19/2019	Romsdalen Road	STA 23+80 (MH #5)	G	10"	112.4	9.7	118.4	9.0	95	95 min.	-3 to +3	191999	Pass



Field Density Summary Report

9/57

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1A

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8866

Lot: Underground

Test Type: Sewer Manhole Backfill

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft3)	Field Moisture (%)	Max Dry Density (corr) (lb/ft3)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
06/19/2019	Romsdalen Road	STA 22+42 (MH #4)	G	10"	116.1	8.7	121.2	10.0	96	95 min.	-3 to +3	191957	Pass
06/19/2019	Romsdalen Road	STA 23+80 (MH #5)	8' BG	10"	120.1	10.3	121.2	10.0	99	95 min.	-3 to +3	191957	Pass
06/19/2019	Romsdalen Road	STA 23+80 (MH #5)	6' BG	10"	115.7	8.6	121.2	10.0	95	95 min.	-3 to +3	191957	Pass
06/19/2019	Romsdalen Road	STA 21+03 (MH #3)	4' BG	10"	121.3	8.5	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
06/19/2019	Romsdalen Road	STA 25+13 (MH #6)	3' BG	10"	118.1	8.4	121.2	10.0	97	95 min.	-3 to +3	191957	Pass
06/19/2019	Romsdalen Road	STA 25+13 (MH #6)	1' BG	10"	119.9	7.5	121.2	10.0	99	95 min.	-3 to +3	191957	Pass
06/19/2019	Romsdalen Road	STA 25+13 (MH #6)	G	10"	121.6	7.6	122.1	10.0	100	95 min.	-3 to +3	192000	Pass
06/19/2019	Romsdalen Road	STA 25+13 (MH #6)	9' BG	10"	122.1	7.3	122.1	10.0	100	95 min.	-3 to +3	192000	Pass
06/19/2019	Romsdalen Road	STA 25+13 (MH #6)	7' BG	10"	121.2	8.4	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
06/19/2019	Romsdalen Road	STA 25+13 (MH #6)	5' BG	10"	121.2	8.1	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
06/19/2019	Romsdalen Road	STA 19+87 (MH #2)	1' BG	10"	117.3	10.3	118.4	9.0	99	95 min.	-3 to +3	191999	Pass
06/19/2019	Romsdalen Road	STA 19+87 (MH #2)	G	10"	122.1	8.5	122.1	10.0	100	95 min.	-3 to +3	192000	Pass
06/19/2019	Romsdalen Road	STA 21+03 (MH #3)	6' BG	10"	119.9	10.7	121.2	10.0	99	95 min.	-3 to +3	191957	Pass
06/19/2019	Romsdalen Road	STA 19+87 (MH #2)	7' BG	10"	121.3	8.6	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
06/19/2019	Romsdalen Road	STA 19+87 (MH #2)	5' BG	10"	115.1	7.7	118.4	9.0	97	95 min.	-3 to +3	191999	Pass
06/19/2019	Romsdalen Road	STA 19+87 (MH #2)	3' BG	10"	118.6	9.9	121.2	10.0	98	95 min.	-3 to +3	191957	Pass
06/21/2019	Romsdalen Road	STA 29+76 (MH #29)	G	10"	119.2	8.8	121.2	10.0	98	95 min.	-3 to +3	191957	Pass
06/21/2019	Romsdalen Road	STA 29+76 (MH #29)	2' BG	10"	116.5	8.8	121.2	10.0	96	95 min.	-3 to +3	191957	Pass
01/30/2020	Sewer Easement	STA 3+16 (MH #1B)	7' BG	10"	122.3	9.8	122.1	10.0	100	95 min.	-3 to +3	192000	Pass



Field Density Summary Report

10/57

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1A

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8866

Lot: Underground

Test Type: Sewer Manhole Backfill

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
01/30/2020	Sewer Easement	STA 2+35 (MH #1)	G	10"	118.4	7.5	121.2	10.0	98	95 min.	-3 to +3	191957	Pass
01/30/2020	Sewer Easement	STA 3+16 (MH #1B)	3' BG	10"	117.8	8.2	118.4	9.0	100	95 min.	-3 to +3	191999	Pass
01/30/2020	Sewer Easement	STA 3+16 (MH #1B)	5' BG	10"	122.6	7.2	122.1	10.0	100	95 min.	-3 to +3	192000	Pass
01/30/2020	Sewer Easement	STA 2+35 (MH #1)	1' BG	10"	117.8	9.8	118.4	9.0	100	95 min.	-3 to +3	191999	Pass
01/30/2020	Sewer Easement	STA 2+35 (MH #1)	5' BG	10"	113.9	7.6	118.4	9.0	96	95 min.	-3 to +3	191999	Pass
01/30/2020	Sewer Easement	STA 2+35 (MH #1)	3' BG	10"	117.2	8.7	121.2	10.0	97	95 min.	-3 to +3	191957	Pass
01/30/2020	Sewer Easement	STA 2+35 (MH #1)	7' BG	10"	122.5	8.1	122.1	10.0	100	95 min.	-3 to +3	192000	Pass
01/30/2020	Sewer Easement	STA 3+16 (MH #1B)	1' BG	10"	120.4	8.7	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
01/30/2020	Sewer Easement	STA 3+16 (MH #1B)	G	10"	120.3	8.7	122.1	10.0	99	95 min.	-3 to +3	192000	Pass

Rancho Vistoso Valley-Phase 1A
Town of Oro Valley, Arizona
ProTeX Job ID: 8866



Water



Field Density Summary Report

11/57

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1A

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8866

Lot: Underground

Test Type: Storm Drain Backfill Lower Zone

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
08/14/2019	Romsdalen Road	STA 20+75	4' BG	8"	119.2	8.5	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
08/14/2019	Romsdalen Road	STA 20+75	2' BG	8"	118.7	8.1	122.1	10.0	97	95 min.	-3 to +3	192000	Pass



Field Density Summary Report

12/57

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1A

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8866

Lot: Underground

Test Type: Storm Drain Backfill Upper Zone

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
08/14/2019	Romsdalen Road	STA 20+75	G	8"	120.6	9.1	122.1	10.0	99	95 min.	-3 to +3	192000	Pass



Field Density Summary Report

13/57

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1A

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8866

Lot: Underground

Test Type: Water Line Backfill Lower Zone

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
07/15/2019	Romsdalen Road	STA 21+00	2' BG	8"	117.4	8.1	122.1	10.0	96	95 min.	-3 to +3	192000	Pass
07/15/2019	Romsdalen Road	STA 21+00	4' BG	8"	116.9	7.9	122.1	10.0	96	95 min.	-3 to +3	192000	Pass
07/15/2019	Romsdalen Road	STA 23+00	4' BG	8"	118.9	8.7	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
07/15/2019	Romsdalen Road	STA 23+00	2' BG	8"	119.1	8.8	122.1	10.0	98	95 min.	-3 to +3	192000	Pass



Field Density Summary Report

14/57

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1A

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8866

Lot: Underground

Test Type: Water Line Backfill Upper Zone

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
07/02/2019	Kalalau Drive	STA 15+00	1' BG	8"	121.9	9.6	122.1	10.0	100	95 min.	-3 to +3	192000	Pass
07/02/2019	Kalalau Drive	STA 18+50	1' BG	8"	120.5	8.7	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
07/02/2019	Kalalau Drive	STA 15+00	G	8"	119.8	9.3	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
07/02/2019	Kalalau Drive	STA 19+00	1' BG	10"	114.8	9.5	121.2	10.0	95	95 min.	-3 to +3	191957	Pass
07/02/2019	Kalalau Drive	STA 16+00	1' BG	10"	118.2	7.9	121.2	10.0	98	95 min.	-3 to +3	191957	Pass
07/02/2019	Kalalau Drive	STA 18+00	G	10"	117.9	10.5	121.2	10.0	97	95 min.	-3 to +3	191957	Pass
07/02/2019	Kalalau Drive	STA 18+50	G	8"	121.4	9.1	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
07/02/2019	Kalalau Drive	STA 11+00	G	10"	117.4	8.4	121.2	10.0	97	95 min.	-3 to +3	191957	Pass
07/15/2019	Romsdalen Road	STA 21+00	G	8"	117.3	8.1	122.1	10.0	96	95 min.	-3 to +3	192000	Pass
07/15/2019	Romsdalen Road	STA 23+00	1' BG	8"	117.9	8.3	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
07/15/2019	Romsdalen Road	STA 24+00	G	10"	114.9	10.3	121.2	10.0	95	95 min.	-3 to +3	191957	Pass
07/15/2019	Romsdalen Road	STA 29+50	1' BG	10"	114.8	9.6	121.2	10.0	95	95 min.	-3 to +3	191957	Pass
07/15/2019	Romsdalen Road	STA 26+00	1' BG	10"	117.2	10.2	121.2	10.0	97	95 min.	-3 to +3	191957	Pass
07/15/2019	Romsdalen Road	STA 27+50	G	10"	114.8	12.0	121.2	10.0	95	95 min.	-3 to +3	191957	Pass



Field Density Summary Report

15/57

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1A

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8866

Lot: Underground

Test Type: Water Line Fire Hydrant Upper Zone

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
12/23/2019	Romsdalen Road	STA 29+81	1' BG	10"	119.4	9.3	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
12/23/2019	Romsdalen Road	STA 25+01	G	10"	121.4	8.9	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
12/23/2019	Kalalau Drive	STA 12+77	1' BG	10"	120.1	8.1	121.2	10.0	99	95 min.	-3 to +3	191957	Pass
12/23/2019	Kalalau Drive	STA 16+27	G	10"	120.6	9.2	121.2	10.0	100	95 min.	-3 to +3	191957	Pass
12/23/2019	Romsdalen Road	STA 20+67	1' BG	10"	118.9	9.4	122.1	10.0	97	95 min.	-3 to +3	192000	Pass



Field Density Summary Report

16/57

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1A

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8866

Lot: Underground

Test Type: Water Line Services

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
12/23/2019	Kalalau Drive	STA 12+00 (Lot 125)	1' BG	10"	121.6	9.4	122.1	10.0	100	95 min.	-3 to +3	192000	Pass
12/23/2019	Kalalau Drive	STA 14+50 (Lot 120)	G	10"	122.3	9.1	122.1	10.0	100	95 min.	-3 to +3	192000	Pass
12/23/2019	Kalalau Drive	STA 16+50 (Lot 116)	1' BG	10"	120.8	9.3	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
12/23/2019	Kalalau Drive	STA 18+55 (Lot 16)	G	10"	120.4	8.7	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
12/23/2019	Kalalau Drive	STA 17+10 (Lot 13)	1' BG	10"	120.6	8.9	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
12/23/2019	Romsdalen Road	STA 21+00 (Lot 22)	G	10"	118.6	8.9	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
12/23/2019	Kalalau Drive	STA 19+80 (Lot 19)	1' BG	10"	119.3	9.3	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
12/23/2019	Kalalau Drive	STA 12+75 (Lot 4)	G	10"	119.1	8.2	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
12/23/2019	Kalalau Drive	STA 11+00 (Lot 1)	1' BG	10"	119.4	8.5	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
12/23/2019	Kalalau Drive	STA 15+60 (Lot 10)	G	10"	121.0	9.2	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
12/23/2019	Kalalau Drive	STA 14+20 (Lot 7)	1' BG	10"	119.0	8.6	121.2	10.0	98	95 min.	-3 to +3	191957	Pass
12/23/2019	Romsdalen Road	STA 22+75 (Lot 25)	1' BG	10"	119.5	8.6	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
12/23/2019	Romsdalen Road	STA 29+75 (Lot 104)	1' BG	10"	120.2	9.5	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
12/23/2019	Romsdalen Road	STA 27+60 (Lot 107)	G	10"	121.5	9.2	122.1	10.0	100	95 min.	-3 to +3	192000	Pass
12/23/2019	Romsdalen Road	STA 24+75 (Lot 110)	1' BG	10"	121.3	9.7	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
12/23/2019	Romsdalen Road	STA 29+10 (Lot 101)	G	10"	120.6	9.0	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
12/23/2019	Kalalau Drive	STA 18+80 (Lot 113)	G	10"	120.1	9.3	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
12/23/2019	Romsdalen Road	STA 24+50 (Lot 28)	G	10"	119.4	9.0	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
12/23/2019	Romsdalen Road	STA 27+20 (Lot 98)	1' BG	10"	121.7	9.4	122.1	10.0	100	95 min.	-3 to +3	192000	Pass

Rancho Vistoso Valley-Phase 1A
Town of Oro Valley, Arizona
ProTeX Job ID: 8866



Laboratory Tests



ProTeX the PT Xperts LLC
1102 W. Southern Ave., Ste. 4
Tempe, AZ 85282

Office: (602)-272-7891
Fax: (602) 272-7892

Soils Summary

Client: Pulte Tucson Land
Project Name: Rancho Vistoso
Job Name: 5X and 5W Mass Grading
Material: Native (On-Site)
Material Supplier: -
Sample Location: Lot 10 (-)

ProTeX Job No: 8944
ProTeX Lab No: 191957 - Phoenix
Date Received: 3/27/2019
Sampled By: Joseph Navarro
Date Sampled: 3/25/2019
Submitted By: Joseph Navarro

Plasticity Index	
Liquid Limit	NA
Plastic Limit	NA
Plasticity Index	NA

Expansion Index, (EI)	Potential Expansion
0 - 20	Very Low
21 - 51	Low
52 - 90	Medium
91 - 130	High
> 130	Very High

Expansion Index	
EI =	NA

Percent Swell of Soil	
% Swell	NV
Notes:	

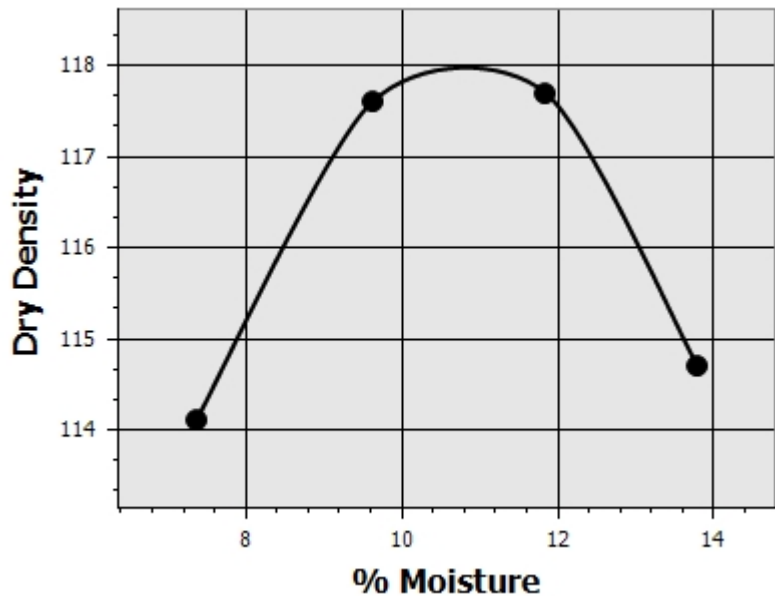
pH and Resistivity	
pH Reading:	NA
Resistivity (ohms-cm)	NA

Class: _____
Symbol: _____

ASTM D698-A	
Moisture Density (Proctor)	
Max. Dry Density	118.0
Opt. Moisture %	10.8
Corr. Max. Dry Density	121.2
Corr. Opt. Moisture %	10.1
% Rock	8

* = out of specification

Moisture Vs. Density



Remarks: Grus with sand

Reviewed By: _____

Jerald W Grossarth



ProTeX the PT Xperts LLC
1102 W. Southern Ave., Ste. 4
Tempe, AZ 85282

Office: (602)-272-7891
Fax: (602) 272-7892

Soils Summary

Client: Pulte Tucson Land
Project Name: Rancho Vistoso
Job Name: 5X and 5W Mass Grading
Material: Native (On-Site)
Material Supplier:
Sample Location: Lot 142 (#9) (-)

ProTeX Job No: 8944
ProTeX Lab No: 191999 - Phoenix
Date Received: 3/28/2019
Sampled By: Joseph Navarro
Date Sampled: 3/25/2019
Submitted By: Joseph Navarro

Plasticity Index	
Liquid Limit	NA
Plastic Limit	NA
Plasticity Index	NA

Expansion Index, (EI)	Potential Expansion
0 - 20	Very Low
21 - 51	Low
52 - 90	Medium
91 - 130	High
> 130	Very High

Expansion Index	
EI =	NA

Percent Swell of Soil	
% Swell	NV
Notes:	

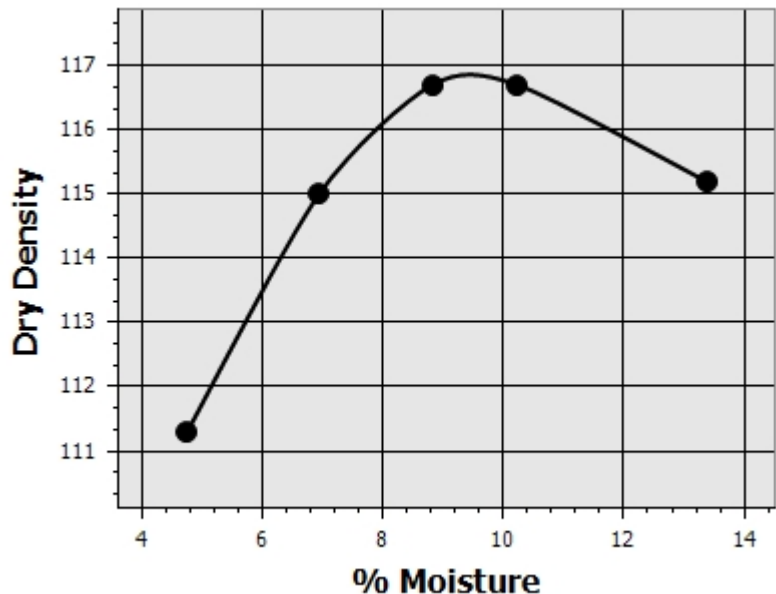
pH and Resistivity	
pH Reading:	NA
Resistivity (ohms-cm)	NA

Class: _____
Symbol: _____

ASTM D698-A	
Moisture Density (Proctor)	
Max. Dry Density	116.9
Opt. Moisture %	9.5
Corr. Max. Dry Density	118.4
Corr. Opt. Moisture %	9.1
% Rock	5

* = out of specification

Moisture Vs. Density



Remarks:

Reviewed By:

Jerald W Grossarth



ProTeX the PT Xperts LLC
 1102 W. Southern Ave., Ste. 4 Office: (602)-272-7891
 Tempe, AZ 85282 Fax: (602) 272-7892

Soils Summary

Client: Pulte Tucson Land
 Project Name: Rancho Vistoso
 Job Name: 5X and 5W Mass Grading
 Material: Native (On-Site)
 Material Supplier:
 Sample Location: Lot 168 (#8) (-)

ProTeX Job No: 8944
 ProTeX Lab No: 192000 - Phoenix
 Date Received: 3/28/2019
 Sampled By: Joseph Navarro
 Date Sampled: 3/25/2019
 Submitted By: Joseph Navarro

Plasticity Index	
Liquid Limit	NA
Plastic Limit	NA
Plasticity Index	NA

Expansion Index, (EI)	Potential Expansion
0 - 20	Very Low
21 - 51	Low
52 - 90	Medium
91 - 130	High
> 130	Very High

Expansion Index	
EI =	NA

Percent Swell of Soil	
% Swell	NV
Notes:	

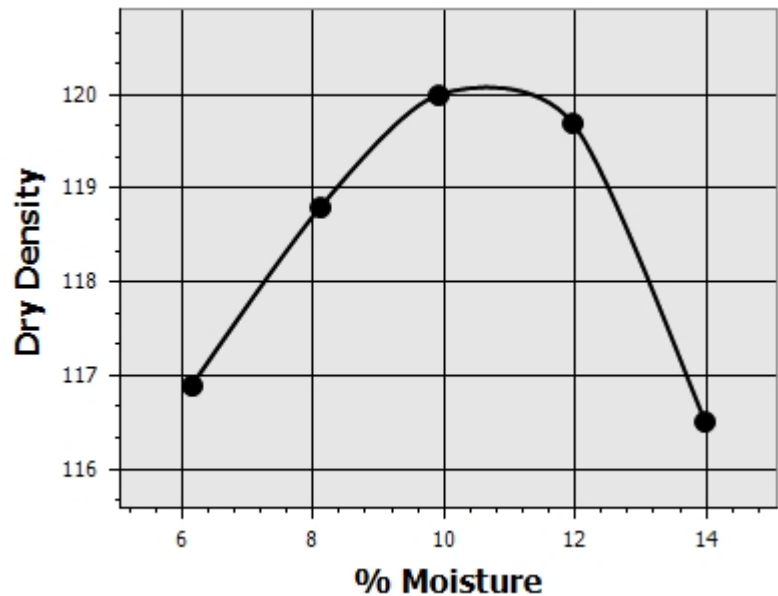
pH and Resistivity	
pH Reading:	NA
Resistivity (ohms-cm)	NA

Class: _____
 Symbol: _____

ASTM D698-A	
Moisture Density (Proctor)	
Max. Dry Density	120.1
Opt. Moisture %	10.7
Corr. Max. Dry Density	122.1
Corr. Opt. Moisture %	10.1
% Rock	6

* = out of specification

Moisture Vs. Density



Remarks:

Reviewed By:

Jerald W Grossarth



ProTeX the PT Xperts LLC
 1102 W. Southern Ave., Ste. 4 Office: (602)-272-7891
 Tempe, AZ 85282 Fax: (602) 272-7892

Soils Summary

Client: Pulte Tucson Land
 Project Name: Rancho Vistoso Valley Vista
 Job Name: 5X and 5W Phase 1A
 Material: Aggregate Base Course (Avra Valley)
 Material Supplier: Vulcan Materials
 Sample Location: On-site Stockpile off Lot 122 (Surface)

ProTeX Job No: 8866
 ProTeX Lab No: 198360 - Tucson
 Date Received: 11/8/2019
 Sampled By: Sergio Montiel
 Date Sampled: 11/5/2019
 Submitted By: Sergio Montiel

AASHTO T89/T90	
Plasticity Index	
Liquid Limit	NV
Plastic Limit	NP
Plasticity Index	NP

Expansion Index, (EI)	Potential Expansion
0 - 20	Very Low
21 - 51	Low
52 - 90	Medium
91 - 130	High
> 130	Very High

Expansion Index	
EI =	NA

Percent Swell of Soil	
% Swell	NV
Notes:	

pH and Resistivity	
pH Reading:	NA
Resistivity (ohms-cm)	NA

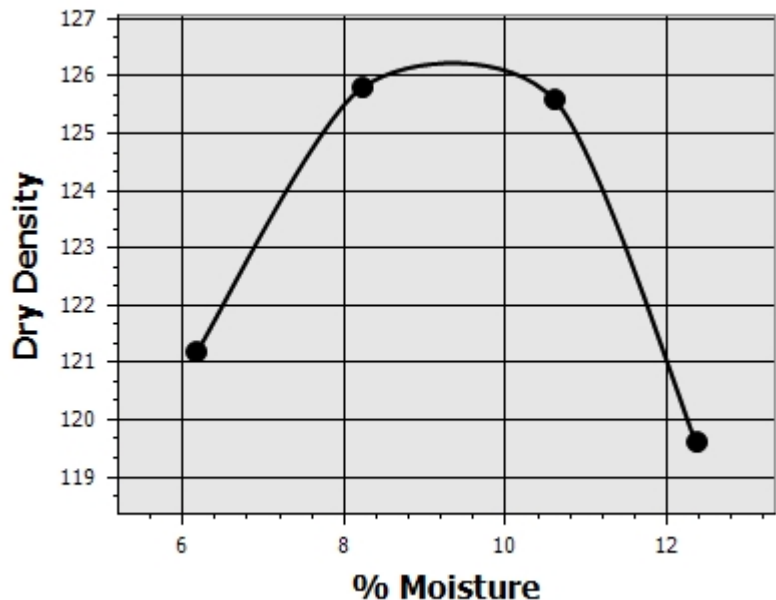
Class: _____
 Symbol: _____

ASTM D698-A	
Moisture Density (Proctor)	
Max. Dry Density	126.4
Opt. Moisture %	9.4
Corr. Max. Dry Density	127.8
Corr. Opt. Moisture %	9.0
% Rock	5

* = out of specification

ARIZ 201			
Sieve	% Pass	Specs	*
3"	100		
2-1/2"	100		
2"	100		
1-1/2"	100		
1"	100	100	
3/4"	95	90-100	
1/2"	82		
3/8"	76		
1/4"	68	45-75	
#4	65		
#8	54		
#10	51		
#16	40		
#30	23		
#40	19		
#50	16		
#100	12		
#200	10	0-10	

Moisture Vs. Density



Remarks: Sand with Gravel, Tan brown

Reviewed By:

Jones
 Jones Tembo



**Underground Improvements Package for:
Rancho Vistoso Valley Vista-5X & 5W Phase 1B**

Attention: Tom Collins

PHOENIX
1102 West Southern Avenue, Suite 4
Tempe, Arizona 85282
Dispatch 602-272-7890
(o) 602-272-PTX1 (7891)
(f) 602-272-7892



TUCSON
916 West Grant Road
Tucson, Arizona 85705
Dispatch 520-352-0150
(o) 520-352-0150
(f) 520-731-9344

January 23, 2020

Pulte Tucson Land - MS-1021

P.O. Box 3660

Portland, OR 97208

Re: Underground Report

[117172485]

5X and 5W Phase 1B @ Rancho Vistoso Valley Vista

Lot #: Underground Improvements Permit #:

ProTeX Job ID#: 0234Dev-3579-8867

To Whom It May Concern:

In accordance with your request, we have completed the material testing of the underground improvements within the subject project. To the best of my knowledge, the results are in substantial conformance with Pima County and City of Tucson specifications and requirements. Field density tests and lab results are enclosed.

For questions or comments regarding this submittal, please contact the undersigned at (602) 272-PTX1 or engineering@protex-az.com.

Submitted by:

ProTeX - the PT Xperts, L.L.C.



Jones Tembo, P.E.

Rancho Vistoso Valley Vista-Phase 1B
Town of Oro Valley, Arizona
ProTeX Job ID: 8867



Dry Utilities



Field Density Summary Report

1/85

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1B

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8867

Lot: Underground

Test Type: Dry Utilities Backfill Upper Zone

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
10/02/2019	Lauterbrunnen Lane	STA 17+25	G	8"	118.4	8.7	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
10/02/2019	Lauterbrunnen Lane	STA 19+23	G	8"	117.6	8.4	122.1	10.0	96	95 min.	-3 to +3	192000	Pass
10/02/2019	Lauterbrunnen Lane	STA 15+10	G	8"	119.3	9.1	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
10/02/2019	Nubra Valley Place	STA 13+23	G	8"	119.1	9.2	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
10/02/2019	Barun Valley Place	STA 10+75	G	8"	118.3	8.7	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
10/09/2019	HAA Valley Court	STA 10+23	G	8"	117.5	8.5	122.1	10.0	96	95 min.	-3 to +3	192000	Pass
10/09/2019	HAA Valley Court	STA 11+50	G	8"	118.1	8.9	122.1	10.0	97	95 min.	-3 to +3	192000	Pass



Field Density Summary Report

2/85

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1B

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8867

Lot: Underground

Test Type: Dry Utilities Crossings Upper Zone

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
10/02/2019	Nubra Valley Place	STA 10+24	G	8"	117.9	8.3	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
10/02/2019	Barun Valley Place	STA 13+35	G	8"	118.5	8.8	122.1	10.0	97	95 min.	-3 to +3	192000	Pass

Rancho Vistoso Valley Vista-Phase 1B
Town of Oro Valley, Arizona
ProTeX Job ID: 8867



Sewer



Field Density Summary Report

3/85

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1B

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8867

Lot: Underground

Test Type: Sewer Line Backfill Lower Zone

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
06/18/2019	Barun Valley Place	STA 14+00	3' BG	8"	118.4	9.2	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
06/18/2019	Barun Valley Place	STA 14+50	5' BG	8"	119.5	9.7	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
06/19/2019	Barun Valley Place	STA 12+00	3' BG	8"	119.4	9.4	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
06/20/2019	Lauterbrunnen Lane	STA 23+00	3' BG	8"	118.2	8.5	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
06/20/2019	Lauterbrunnen Lane	STA 23+50	5' BG	8"	118.4	8.8	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
06/20/2019	Lauterbrunnen Lane	STA 24+00	7' BG	8"	118.4	8.9	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
06/24/2019	Nubra Valley Place	STA 12+00	2' BG	8"	119.3	9.1	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
06/24/2019	Nubra Valley Place	STA 13+00	4' BG	8"	118.5	8.7	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
06/27/2019	Lauterbrunnen Lane	STA 15+00	5' BG	8"	117.4	8.1	122.1	10.0	96	95 min.	-3 to +3	192000	Pass
06/27/2019	Lauterbrunnen Lane	STA 15+50	3' BG	8"	118.4	8.4	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
06/28/2019	Lauterbrunnen Lane	STA 12+50	7' BG	8"	119.5	8.7	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
06/28/2019	Lauterbrunnen Lane	STA 13+50	3' BG	8"	121.6	9.4	122.1	10.0	100	95 min.	-3 to +3	192000	Pass
06/28/2019	Lauterbrunnen Lane	STA 11+20	5' BG	8"	120.2	9.2	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
07/02/2019	HAA Valley Court	STA 10+50	3' BG	8"	119.2	8.6	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
07/02/2019	HAA Valley Court	STA 11+00	5' BG	8"	120.6	9.3	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
07/10/2019	Geyser Valley Street	STA 15+50	4' BG	8"	117.9	8.1	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
07/10/2019	Geyser Valley Street	STA 18+00	3' BG	8"	118.3	8.5	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
07/10/2019	Geyser Valley Street	STA 15+50	2' BG	8"	116.9	7.9	122.1	10.0	96	95 min.	-3 to +3	192000	Pass



Field Density Summary Report

4/85

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1B

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8867

Lot: Underground

Test Type: Sewer Line Backfill Upper Zone

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
06/20/2019	Lauterbrunnen Lane	STA 22+00	G	8"	121.8	9.5	122.1	10.0	100	95 min.	-3 to +3	192000	Pass
06/20/2019	Lauterbrunnen Lane	STA 22+50	1' BG	8"	119.9	9.3	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
06/24/2019	Nubra Valley Place	STA 11+00	G	8"	117.8	8.2	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
06/28/2019	Lauterbrunnen Lane	STA 13+00	G	8"	121.3	9.3	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
07/02/2019	HAA Valley Court	STA 11+00	1' BG	8"	119.7	8.8	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
07/10/2019	Geyser Valley Street	STA 18+00	G	8"	118.6	8.2	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
07/10/2019	Geyser Valley Street	STA 18+00	1' BG	8"	117.8	8.1	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
07/10/2019	Geyser Valley Street	STA 15+50	G	8"	119.7	8.7	122.1	10.0	98	95 min.	-3 to +3	192000	Pass



Field Density Summary Report

5/85

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1B

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8867

Lot: Underground

Test Type: Sewer Line Services

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
06/18/2019	Barun Valley Place	STA 14+00 (Lot 79)	G	8"	119.6	9.8	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
06/18/2019	Barun Valley Place	STA 14+35 (Lot 96)	1' BG	8"	118.5	9.5	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
06/19/2019	Barun Valley Place	STA 11+95 (Lot 83)	1' BG	8"	117.5	8.6	122.1	10.0	96	95 min.	-3 to +3	192000	Pass
06/19/2019	Barun Valley Place	STA 11+30 (Lot 90)	1' BG	8"	118.3	9.1	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
06/24/2019	Nubra Valley Place	STA 12+40 (Lot 73)	G	8"	119.8	9.3	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
06/24/2019	Nubra Valley Place	STA 10+60 (Lot 70)	1' BG	8"	118.1	8.6	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
06/27/2019	Lauterbrunnen Lane	STA 15+25 (Lot 45)	1' BG	8"	119.1	8.8	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
07/02/2019	HAA Valley Court	STA 9+70 (Lot 51)	1' BG	8"	121.8	9.5	122.1	10.0	100	95 min.	-3 to +3	192000	Pass
07/02/2019	HAA Valley Court	STA 11+20 (Lot 48)	1' BG	8"	119.7	8.8	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
07/02/2019	HAA Valley Court	STA 11+20 (Lot 48)	G	8"	118.9	8.6	122.1	10.0	97	95 min.	-3 to +3	192000	Pass



Field Density Summary Report

6/85

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1B

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8867

Lot: Underground

Test Type: Sewer Manhole Backfill

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
06/20/2019	Barun Valley Place	STA 12+54 (MH #30)	4' BG	8"	120.0	9.3	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
06/20/2019	Barun Valley Place	STA 12+54 (MH #30)	2' BG	8"	119.8	9.1	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
06/20/2019	Barun Valley Place	STA 12+54 (MH #30)	G	8"	121.4	9.5	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
06/25/2019	Nubra Valley Place	STA 14+04 (MH #32)	1' BG	8"	117.9	8.1	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
06/25/2019	Nubra Valley Place	STA 14+04 (MH #32)	5' BG	8"	119.8	9.1	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
06/25/2019	Nubra Valley Place	STA 14+04 (MH #32)	3' BG	8"	117.8	8.3	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
06/25/2019	Nubra Valley Place	STA 14+04 (MH #32)	G	8"	118.8	8.6	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
06/25/2019	Nubra Valley Place	STA 10+10 (MH #33)	3' BG	8"	117.6	7.9	122.1	10.0	96	95 min.	-3 to +3	192000	Pass
06/25/2019	Nubra Valley Place	STA 10+10 (MH #33)	1' BG	8"	117.4	7.7	122.1	10.0	96	95 min.	-3 to +3	192000	Pass
06/25/2019	Nubra Valley Place	STA 10+10 (MH #33)	G	8"	118.4	8.4	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
06/27/2019	Lauterbrunnen Lane	STA 14+37 (MH #10)	G	8"	118.9	8.5	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
06/27/2019	Lauterbrunnen Lane	STA 14+37 (MH #10)	4' BG	8"	118.4	8.3	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
06/27/2019	Lauterbrunnen Lane	STA 14+37 (MH #10)	2' BG	8"	119.8	8.9	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
06/28/2019	Lauterbrunnen Lane	STA 21+51 (MH #7)	4' BG	8"	119.4	8.5	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
06/28/2019	Lauterbrunnen Lane	STA 21+51 (MH #7)	2' BG	8"	119.3	8.4	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
06/28/2019	Lauterbrunnen Lane	STA 21+51 (MH #7)	8' BG	8"	118.3	8.5	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
06/28/2019	Lauterbrunnen Lane	STA 21+51 (MH #7)	6' BG	8"	118.5	8.2	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
06/28/2019	Lauterbrunnen Lane	STA 21+51 (MH #7)	G	8"	119.9	9.1	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
07/02/2019	HAA Valley Court	STA 9+65 (MH #34)	1' BG	8"	117.4	7.6	122.1	10.0	96	95 min.	-3 to +3	192000	Pass



Field Density Summary Report

7/85

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1B

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8867

Lot: Underground

Test Type: Sewer Manhole Backfill

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
07/02/2019	HAA Valley Court	STA 9+65 (MH #34)	3' BG	8"	119.4	8.7	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
07/02/2019	HAA Valley Court	STA 9+65 (MH #34)	G	8"	122.1	9.8	122.1	10.0	100	95 min.	-3 to +3	192000	Pass

Rancho Vistoso Valley Vista-Phase 1B
Town of Oro Valley, Arizona
ProTeX Job ID: 8867



Water



Field Density Summary Report

8/85

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1B

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8867

Lot: Underground

Test Type: Water Line Backfill Upper Zone

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
07/09/2019	Lauterbrunnen Lane	STA 21+00	G	8"	118.6	8.7	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
07/09/2019	Lauterbrunnen Lane	STA 11+00	1' BG	8"	117.5	8.8	122.1	10.0	96	95 min.	-3 to +3	192000	Pass
07/09/2019	Lauterbrunnen Lane	STA 15+00	G	8"	119.6	8.7	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
07/09/2019	Lauterbrunnen Lane	STA 17+00	1' BG	8"	118.5	8.4	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
07/09/2019	Lauterbrunnen Lane	STA 18+00	G	8"	117.4	8.7	122.1	10.0	96	95 min.	-3 to +3	192000	Pass
07/09/2019	Lauterbrunnen Lane	STA 20+00	1' BG	8"	117.5	8.5	122.1	10.0	96	95 min.	-3 to +3	192000	Pass
07/16/2019	Barun Valley Place	STA 12+50	1' BG	8"	118.4	8.5	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
07/16/2019	Barun Valley Place	STA 11+50	G	8"	117.3	8.2	122.1	10.0	96	95 min.	-3 to +3	192000	Pass
07/16/2019	Barun Valley Place	STA 10+50	1' BG	8"	117.5	8.1	122.1	10.0	96	95 min.	-3 to +3	192000	Pass
07/16/2019	Barun Valley Place	STA 14+50	G	8"	118.7	8.8	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
07/19/2019	HAA Valley Court	STA 11+00	1' BG	8"	119.9	9.1	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
07/19/2019	Nubra Valley Place	STA 13+00	1' BG	8"	120.5	9.1	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
07/19/2019	Nubra Valley Place	STA 10+00	1' BG	8"	120.4	9.1	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
07/19/2019	Nubra Valley Place	STA 14+00	G	8"	117.5	7.9	122.1	10.0	96	95 min.	-3 to +3	192000	Pass
07/19/2019	HAA Valley Court	STA 10+00	G	8"	117.5	7.9	122.1	10.0	96	95 min.	-3 to +3	192000	Pass
07/19/2019	Nubra Valley Place	STA 11+00	G	8"	119.6	9.0	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
07/24/2019	Lauterbrunnen Lane	STA 14+00	1' BG	8"	120.3	8.9	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
07/24/2019	Lauterbrunnen Lane	STA 12+00	G	8"	119.7	8.5	122.1	10.0	98	95 min.	-3 to +3	192000	Pass



Field Density Summary Report

9/85

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1B

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8867

Lot: Underground

Test Type: Water Line Fire Hydrant Upper Zone

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
07/24/2019	Lauterbrunnen Lane	STA 21+00	1' BG	8"	121.9	9.3	122.1	10.0	100	95 min.	-3 to +3	192000	Pass
07/24/2019	Lauterbrunnen Lane	STA 11+13	G	8"	120.1	8.8	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
07/24/2019	Lauterbrunnen Lane	STA 16+50	1' BG	8"	120.7	9.1	122.1	10.0	99	95 min.	-3 to +3	192000	Pass



Field Density Summary Report

10/85

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1B

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8867

Lot: Underground

Test Type: Water Line Services

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
07/09/2019	Lauterbrunnen Lane	STA 18+25 (Lot 40)	G	8"	117.8	8.2	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
07/09/2019	Lauterbrunnen Lane	STA 20+00 (Lot 37)	1' BG	8"	117.8	8.3	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
07/16/2019	Barun Valley Place	STA 14+70 (Lot 97)	G	8"	116.4	7.4	122.1	10.0	95	95 min.	-3 to +3	192000	Pass
07/16/2019	Barun Valley Place	STA 13+35 (Lot 94)	1' BG	8"	118.1	9.3	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
07/16/2019	Barun Valley Place	STA 10+00 (Lot 87)	1' BG	8"	116.7	7.5	122.1	10.0	96	95 min.	-3 to +3	192000	Pass
07/16/2019	Barun Valley Place	STA 13+40 (Lot 80)	1' BG	8"	119.3	9.1	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
07/16/2019	Barun Valley Place	STA 11+45 (Lot 84)	G	8"	117.1	8.2	122.1	10.0	96	95 min.	-3 to +3	192000	Pass
07/16/2019	Barun Valley Place	STA 11+95 (Lot 91)	G	8"	119.1	8.9	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
07/19/2019	Nubra Valley Place	STA 11+00 (Lot 68)	1' BG	8"	120.4	9.6	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
07/19/2019	Nubra Valley Place	STA 11+20 (Lot 71)	G	8"	121.7	9.6	122.1	10.0	100	95 min.	-3 to +3	192000	Pass
07/19/2019	Nubra Valley Place	STA 12+70 (Lot 65)	G	8"	118.9	8.9	122.1	10.0	97	95 min.	-3 to +3	192000	Pass
07/19/2019	HAA Valley Court	STA 9+50 (Lot 52)	G	8"	119.3	8.8	122.1	10.0	98	95 min.	-3 to +3	192000	Pass
07/19/2019	Nubra Valley Place	STA 14+80 (Lot 77)	G	8"	116.9	7.5	122.1	10.0	96	95 min.	-3 to +3	192000	Pass
07/19/2019	Nubra Valley Place	STA 13+00 (Lot 74)	1' BG	8"	121.3	9.8	122.1	10.0	99	95 min.	-3 to +3	192000	Pass
07/24/2019	Lauterbrunnen Lane	STA 14+75 (Lot 46)	G	8"	121.5	8.9	122.1	10.0	100	95 min.	-3 to +3	192000	Pass
07/24/2019	Lauterbrunnen Lane	STA 11+45 (Lot 59)	G	8"	119.9	8.7	122.1	10.0	98	95 min.	-3 to +3	192000	Pass

Rancho Vistoso Valley Vista-Phase 1B
Town of Oro Valley, Arizona
ProTeX Job ID: 8867



Laboratory Tests



ProTeX the PT Xperts LLC
1102 W. Southern Ave., Ste. 4
Tempe, AZ 85282
Office: (602)-272-7891
Fax: (602) 272-7892

Soils Summary

Client: Pulte Tucson Land
Project Name: Rancho Vistoso
Job Name: 5X and 5W Mass Grading
Material: Native (On-Site)
Material Supplier:
Sample Location: Lot 168 (#8) (-)

ProTeX Job No: 8944
ProTeX Lab No: 192000 - Phoenix
Date Received: 3/28/2019
Sampled By: Joseph Navarro
Date Sampled: 3/25/2019
Submitted By: Joseph Navarro

Plasticity Index	
Liquid Limit	NA
Plastic Limit	NA
Plasticity Index	NA

Expansion Index, (EI)	Potential Expansion
0 - 20	Very Low
21 - 51	Low
52 - 90	Medium
91 - 130	High
> 130	Very High

Expansion Index	
EI =	NA

Percent Swell of Soil	
% Swell	NV
Notes:	

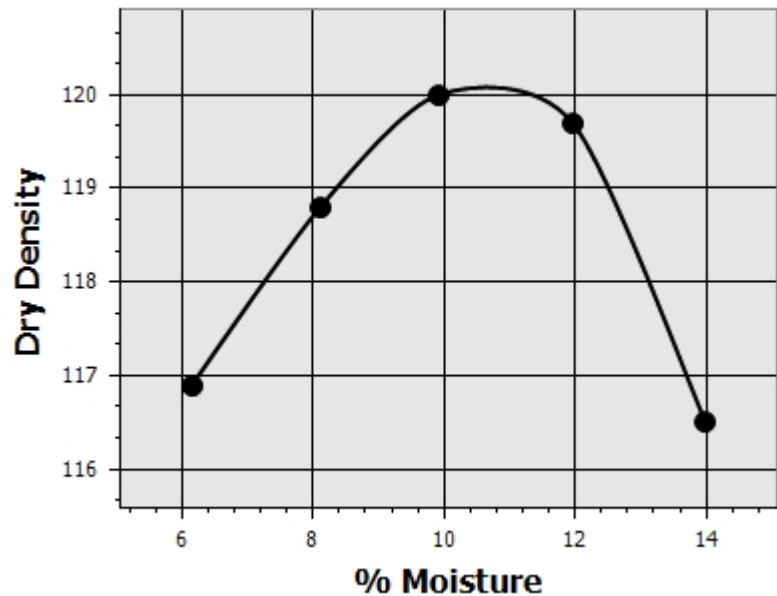
pH and Resistivity	
pH Reading:	NA
Resistivity (ohms-cm)	NA

Class: _____
Symbol: _____

ASTM D698-A	
Moisture Density (Proctor)	
Max. Dry Density	120.1
Opt. Moisture %	10.7
Corr. Max. Dry Density	122.1
Corr. Opt. Moisture %	10.1
% Rock	6

* = out of specification

Moisture Vs. Density



Remarks:

Reviewed By:

Jerald W Grossarth



Compressive Strength Report

12/85

108529165

Client: Pulte Tucson Land Builder: Pulte Tucson Land Project Name: Rancho Vistoso Valley Vista
 Job Name: 5X and 5W Phase 1B Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road
 Job ID #: 8867 Lot #: Underground Address: _____
 Model #/Elevation: _____ CSM: Sergio Montiel
 Permit: _____ PO: _____ Inspection Date: 9/20/2019 Reinspection: ☐ Inv: _____
 Concrete Contractor: _____ Report Number: 144558

Concrete



Mortar



Grout



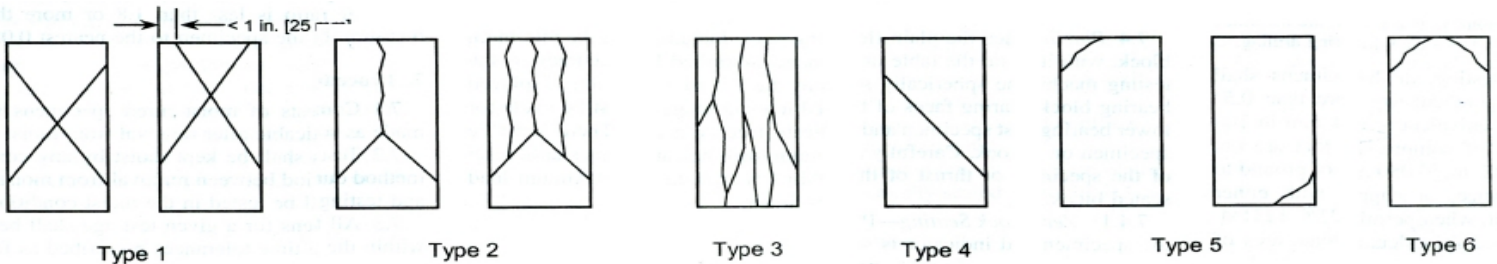
Shot-Crete



Core



Supplier: Cemex Break Schedule: 7, 28, 28, Hold
 Mix ID/Product Code: 1393760 Slump (in) SPECIFIED: 3.5
 Batch Size (CY): 3 (C143) Slump (in) ACTUAL: 3
 Batch Time: 10:36 AM (C1064) Material Temperature (deg F): 86
 Sample Description: Sewer Manhole Base Ambient Temperature (deg F): 92
 Sample Location: Moore Loop Road, STA 60+07 (MH #22) Admixtures: _____
 Date Sampled: 9/20/2019 Mode of Discharge: Chute
 Time Sampled: 11:15 AM Water added BEFORE test (gal) 0
 Weather: Clear Water added AFTER test (gal) 0
 Project Specified Design Strength (psi) 3000 @ 28 days Material Ticket #: 45365599
 Delivered Mix Design Strength (psi) 3000 @ 28 days (C138) Unit Weight (lb/ft3) _____
 (C231) Air Content (%) _____



Specimen No.	Age	Date Tested	Dia. (in)	Area (sq in)	Length (in)	Break Type	Peak (lbs)	Strength (psi)	Lab Technician
1445581	7	9/27/2019	4	12.57	8	3	67695	5380	
1445582	28	10/18/2019	4	12.57	8	3	74195	5900	
1445583	28	10/18/2019	4	12.57	8	3	71255	5670	

C31, C39, C511, ☐ C617, ☒ C1231

Comments:



**Underground Improvements Package for:
Rancho Vistoso Valley Vista 5X and 5W Phase
1C**

Attention: Tom Collins

PHOENIX
1102 West Southern Avenue, Suite 4
Tempe, Arizona 85282
Dispatch 602-272-7890
(o) 602-272-PTX1 (7891)
(f) 602-272-7892



TUCSON
916 West Grant Road
Tucson, Arizona 85705
Dispatch 520-352-0150
(o) 520-352-0150
(f) 520-731-9344

March 25, 2020

Pulte Tucson Land - MS-1021

P.O. Box 3660

Portland, OR 97208

Re: Underground Report

[121682410]

5X and 5W Phase 1C @ Rancho Vistoso Valley Vista

Lot #: Underground Improvements Permit #:

ProTeX Job ID#: 0234Dev-3579-8868

To Whom It May Concern:

In accordance with your request, we have completed the material testing of the underground improvements within the subject project. To the best of my knowledge, the results are in substantial conformance with Pima County and City of Tucson specifications and requirements. Field density tests and lab results are enclosed.

For questions or comments regarding this submittal, please contact the undersigned at (602) 272-PTX1 or engineering@protex-az.com.

Submitted by:

ProTeX - the PT Xperts, L.L.C.



Jones Tembo, P.E.

Rancho Vistoso Valley Vista 5X and 5W Phase 1C
Town of Oro Valley, Arizona
ProTeX Job ID: 8868



Dry Utilities



Field Density Summary Report

1/63

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1C

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8868

Lot: Underground

Test Type: Dry Utilities Backfill Upper Zone

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
03/20/2020	Danum Valley Drive	STA 11+00	G	10"	128.6	7.6	128.5	9.0	100	95 min.	-3 to +3	191998	Pass
03/20/2020	Geyser Valley Street	STA 17+00	G	10"	127.6	10.5	128.5	9.0	99	95 min.	-3 to +3	191998	Pass
03/20/2020	Harau Valley Road	STA 20+00	G	10"	125.3	10.8	125.3	10.1	100	95 min.	-3 to +3	191998	Pass
03/20/2020	Harau Valley Road	STA 22+00	G	10"	125.6	10.7	125.3	10.1	100	95 min.	-3 to +3	191998	Pass
03/20/2020	Danum Valley Drive	STA 13+00	G	10"	118.4	10.4	125.3	10.1	95	95 min.	-3 to +3	191998	Pass
03/20/2020	Geyser Valley Street	STA 11+00	G	10"	122.3	9.8	125.3	10.1	98	95 min.	-3 to +3	191998	Pass
03/20/2020	Geyser Valley Street	STA 14+00	G	10"	128.9	11.4	130.1	8.4	99	95 min.	-3 to +3	191998	Pass



Field Density Summary Report

2/63

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1C

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8868

Lot: Underground

Test Type: Dry Utilities Crossings Upper Zone

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
03/20/2020	Danum Valley Drive	STA 12+50	G	10"	120.4	8.1	125.3	10.1	96	95 min.	-3 to +3	191998	Pass
03/20/2020	Danum Valley Drive	STA 11+50	G	10"	125.5	8.0	125.3	10.1	100	95 min.	-3 to +3	191998	Pass
03/20/2020	Geyser Valley Street	STA 18+25	G	10"	124.8	12.6	125.3	10.1	100	95 min.	-3 to +3	191998	Pass
03/20/2020	Geyser Valley Street	STA 17+00	G	10"	125.4	12.3	125.3	10.1	100	95 min.	-3 to +3	191998	Pass
03/20/2020	Geyser Valley Street	STA 15+75	G	10"	116.3	13.1	122.3	11.2	95	95 min.	-3 to +3	191998	Pass

Rancho Vistoso Valley Vista 5X and 5W Phase 1C
Town of Oro Valley, Arizona
ProTeX Job ID: 8868



Sewer



Field Density Summary Report

3/63

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1C

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8868

Lot: Underground

Test Type: Sewer Line Backfill Lower Zone

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
10/21/2019	Danum Valley Drive	STA 12+25	2' BG	10"	123.7	9.5	125.3	10.1	99	95 min.	-3 to +3	191998	Pass
10/21/2019	Danum Valley Drive	STA 13+00	4' BG	10"	123.7	8.7	125.3	10.1	99	95 min.	-3 to +3	191998	Pass
10/21/2019	Geyser Valley Street	STA 15+00	2' BG	10"	120.3	8.5	121.2	10.0	99	95 min.	-3 to +3	191957	Pass
10/22/2019	Harau Valley Road	STA 20+50	3' BG	10"	124.5	9.0	125.3	10.1	99	95 min.	-3 to +3	191998	Pass
10/22/2019	Harau Valley Road	STA 21+00	5' BG	8"	121.7	8.1	125.3	10.1	97	95 min.	-3 to +3	191998	Pass
10/22/2019	Geyser Valley Street	STA 12+80	4' BG	10"	120.8	8.3	121.2	10.0	100	95 min.	-3 to +3	191957	Pass
10/22/2019	Geyser Valley Street	STA 12+50	2' BG	10"	120.1	8.2	123.8	10.0	97	95 min.	-3 to +3	191963	Pass
10/22/2019	Harau Valley Road	STA 21+50	7' BG	8"	122.3	8.6	125.3	10.1	98	95 min.	-3 to +3	191998	Pass
10/22/2019	Geyser Valley Street	STA 2+80	5' BG	10"	125.4	7.7	125.3	10.1	100	95 min.	-3 to +3	191998	Pass
10/23/2019	Geyser Valley Street	STA 19+00	3' BG	8"	122.3	8.5	125.3	10.1	98	95 min.	-3 to +3	191998	Pass
10/23/2019	Geyser Valley Street	STA 3+20	3' BG	8"	124.2	9.5	125.3	10.1	99	95 min.	-3 to +3	191998	Pass
10/23/2019	Geyser Valley Street	STA 14+00	4' BG	8"	122.8	8.6	125.3	10.1	98	95 min.	-3 to +3	191998	Pass
10/23/2019	Geyser Valley Street	STA 2+20	5' BG	8"	124.0	9.3	125.3	10.1	99	95 min.	-3 to +3	191998	Pass
10/23/2019	Geyser Valley Street	STA 2+00	3' BG	8"	124.0	9.2	125.3	10.1	99	95 min.	-3 to +3	191998	Pass



Field Density Summary Report

4/63

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1C

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8868

Lot: Underground

Test Type: Sewer Line Backfill Upper Zone

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
10/21/2019	Danum Valley Drive	STA 11+50	G	10"	124.9	8.9	125.3	10.1	100	95 min.	-3 to +3	191998	Pass
10/22/2019	Harau Valley Road	STA 20+00	1' BG	10"	121.4	8.6	125.3	10.1	97	95 min.	-3 to +3	191998	Pass
10/22/2019	Harau Valley Road	STA 21+00	G	8"	121.5	8.3	125.3	10.1	97	95 min.	-3 to +3	191998	Pass
10/22/2019	Geyser Valley Street	STA 4+00	G	10"	120.6	8.8	123.8	10.0	97	95 min.	-3 to +3	191963	Pass
10/23/2019	Geyser Valley Street	STA 16+00	G	8"	124.5	9.1	125.3	10.1	99	95 min.	-3 to +3	191998	Pass
10/23/2019	Geyser Valley Street	STA 17+00	G	8"	122.9	8.7	125.3	10.1	98	95 min.	-3 to +3	191998	Pass
10/23/2019	Geyser Valley Street	STA 18+00	1' BG	8"	121.0	8.1	125.3	10.1	97	95 min.	-3 to +3	191998	Pass
10/23/2019	Geyser Valley Street	STA 3+60	1' BG	8"	123.5	9.2	125.3	10.1	99	95 min.	-3 to +3	191998	Pass
10/23/2019	Geyser Valley Street	STA 12+30	G	8"	121.6	8.3	125.3	10.1	97	95 min.	-3 to +3	191998	Pass
10/23/2019	Geyser Valley Street	STA 1+60	G	8"	124.7	9.5	125.3	10.1	100	95 min.	-3 to +3	191998	Pass
10/23/2019	Geyser Valley Street	STA 1+80	1' BG	8"	122.1	8.4	125.3	10.1	97	95 min.	-3 to +3	191998	Pass



Field Density Summary Report

5/63

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1C

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8868

Lot: Underground

Test Type: Sewer Line Services

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
10/21/2019	Danum Valley Drive	STA 11+80 (Lot 158)	G	10"	123.1	9.2	125.3	10.1	98	95 min.	-3 to +3	191998	Pass
10/21/2019	Danum Valley Drive	STA 11+97 (Lot 154)	1' BG	10"	121.1	9.3	125.3	10.1	97	95 min.	-3 to +3	191998	Pass
10/22/2019	Harau Valley Road	STA 20+02 (Lot 130)	1' BG	10"	123.9	8.5	125.3	10.1	99	95 min.	-3 to +3	191998	Pass
10/23/2019	Geyser Valley Street	STA 19+51 (Lot 133)	G	10"	122.7	8.8	125.3	10.1	98	95 min.	-3 to +3	191998	Pass
10/23/2019	Geyser Valley Street	STA 17+71 (Lot 136)	1' BG	10"	124.1	9.0	125.3	10.1	99	95 min.	-3 to +3	191998	Pass
10/24/2019	Geyser Valley Street	STA 9+80 (Lot 151)	G	10"	125.2	7.5	125.3	10.1	100	95 min.	-3 to +3	191998	Pass
10/24/2019	Geyser Valley Street	STA 14+16 (Lot 142)	1' BG	10"	124.5	8.2	125.3	10.1	99	95 min.	-3 to +3	191998	Pass
10/24/2019	Geyser Valley Street	STA 12+65 (Lot 145)	G	10"	122.6	7.9	125.3	10.1	98	95 min.	-3 to +3	191998	Pass
10/24/2019	Geyser Valley Street	STA 11+24 (Lot 148)	1' BG	10"	125.7	7.5	125.3	10.1	100	95 min.	-3 to +3	191998	Pass
01/07/2020	Geyser Valley Street	STA 19+08 (Lot 168)	1' BG	10"	123.3	8.9	125.3	10.1	98	95 min.	-3 to +3	191998	Pass
01/07/2020	Geyser Valley Street	STA 17+28 (Lot 165)	G	10"	122.4	8.3	125.3	10.1	98	95 min.	-3 to +3	191998	Pass
01/07/2020	Geyser Valley Street	STA 15+63 (Lot 162)	1' BG	10"	117.1	8.7	121.2	10.0	97	95 min.	-3 to +3	191957	Pass



Field Density Summary Report

6/63

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1C

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8868

Lot: Underground

Test Type: Sewer Manhole Backfill

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
10/22/2019	Harau Valley Road	STA 19+83 (MH #16)	2' BG	8"	120.7	7.8	125.3	10.1	96	95 min.	-3 to +3	191998	Pass
10/22/2019	Geyser Valley Street	STA 13+14 (MH #18)	1' BG	10"	115.0	10.9	121.2	10.0	95	95 min.	-3 to +3	191957	Pass
10/22/2019	Geyser Valley Street	STA 13+14 (MH #18)	G	10"	122.3	8.9	125.3	10.1	98	95 min.	-3 to +3	191998	Pass
10/22/2019	Geyser Valley Street	STA 13+14 (MH #18)	5' BG	10"	121.7	9.0	125.3	10.1	97	95 min.	-3 to +3	191998	Pass
10/22/2019	Geyser Valley Street	STA 13+14 (MH #18)	3' BG	10"	118.8	9.3	121.2	10.0	98	95 min.	-3 to +3	191957	Pass
10/22/2019	Geyser Valley Street	STA 16+53 (MH #17)	4' BG	10"	119.5	9.6	125.3	10.1	95	95 min.	-3 to +3	191998	Pass
10/22/2019	Harau Valley Road	STA 19+83 (MH #16)	G	8"	124.1	9.3	125.3	10.1	99	95 min.	-3 to +3	191998	Pass
10/22/2019	Harau Valley Road	STA 19+83 (MH #16)	4' BG	8"	121.4	8.2	125.3	10.1	97	95 min.	-3 to +3	191998	Pass
10/22/2019	Geyser Valley Street	STA 16+53 (MH #17)	G	10"	120.8	9.3	125.3	10.1	96	95 min.	-3 to +3	191998	Pass
10/22/2019	Geyser Valley Street	STA 16+53 (MH #17)	2' BG	10"	114.6	10.9	121.2	10.0	95	95 min.	-3 to +3	191957	Pass
10/23/2019	Geyser Valley Street	STA 4+09 (MH #19)	G	8"	121.4	8.1	125.3	10.1	97	95 min.	-3 to +3	191998	Pass
10/23/2019	Geyser Valley Street	STA 4+09 (MH #19)	2' BG	8"	122.3	8.7	125.3	10.1	98	95 min.	-3 to +3	191998	Pass
10/23/2019	Danum Valley Drive	STA 13+10 (MH #35)	2' BG	10"	122.7	9.2	125.3	10.1	98	95 min.	-3 to +3	191998	Pass
10/23/2019	Danum Valley Drive	STA 13+10 (MH #35)	4' BG	10"	122.0	8.7	125.3	10.1	97	95 min.	-3 to +3	191998	Pass
10/23/2019	Geyser Valley Street	STA 4+09 (MH #19)	4' BG	8"	123.1	8.9	125.3	10.1	98	95 min.	-3 to +3	191998	Pass
10/23/2019	Geyser Valley Street	STA 2+40 (MH #20)	4' BG	8"	121.6	8.4	125.3	10.1	97	95 min.	-3 to +3	191998	Pass
10/23/2019	Geyser Valley Street	STA 2+40 (MH #20)	6' BG	8"	121.3	8.6	125.3	10.1	97	95 min.	-3 to +3	191998	Pass
10/23/2019	Geyser Valley Street	STA 2+40 (MH #20)	G	8"	120.2	8.0	125.3	10.1	96	95 min.	-3 to +3	191998	Pass
10/23/2019	Geyser Valley Street	STA 2+40 (MH #20)	2' BG	8"	121.6	8.3	125.3	10.1	97	95 min.	-3 to +3	191998	Pass



Field Density Summary Report

7/63

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1C

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8868

Lot: Underground

Test Type: Sewer Manhole Backfill

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
10/23/2019	Danum Valley Drive	STA 13+10 (MH #35)	G	10"	123.3	8.9	125.3	10.1	98	95 min.	-3 to +3	191998	Pass

Rancho Vistoso Valley Vista 5X and 5W Phase 1C
Town of Oro Valley, Arizona
ProTeX Job ID: 8868



Water



Field Density Summary Report

8/63

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1C

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8868

Lot: Underground

Test Type: Water Line Backfill Upper Zone

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
01/07/2020	Geyser Valley Street	STA 18+00	1' BG	10"	121.8	9.6	125.3	10.1	97	95 min.	-3 to +3	191998	Pass
01/07/2020	Geyser Valley Street	STA 17+00	G	10"	122.6	8.7	125.3	10.1	98	95 min.	-3 to +3	191998	Pass
01/07/2020	Geyser Valley Street	STA 16+00	1' BG	10"	121.5	9.2	125.3	10.1	97	95 min.	-3 to +3	191998	Pass
01/07/2020	Harau Valley Road	STA 20+50	G	10"	122.1	8.9	125.3	10.1	97	95 min.	-3 to +3	191998	Pass
01/07/2020	Harau Valley Road	STA 21+50	1' BG	10"	115.2	9.3	121.2	10.0	95	95 min.	-3 to +3	191957	Pass
01/07/2020	Geyser Valley Street	STA 19+00	G	10"	121.6	9.7	125.3	10.1	97	95 min.	-3 to +3	191998	Pass
01/07/2020	Geyser Valley Street	STA 14+00	G	10"	122.6	9.2	125.3	10.1	98	95 min.	-3 to +3	191998	Pass
01/07/2020	Geyser Valley Street	STA 13+00	1' BG	10"	116.0	9.9	121.2	10.0	96	95 min.	-3 to +3	191957	Pass
01/07/2020	Geyser Valley Street	STA 11+00	G	10"	122.1	9.5	125.3	10.1	97	95 min.	-3 to +3	191998	Pass
01/07/2020	Geyser Valley Street	STA 10+00	1' BG	10"	122.2	8.7	125.3	10.1	98	95 min.	-3 to +3	191998	Pass
01/30/2020	Danum Valley Drive	STA 11+00	1' BG	10"	118.2	8.1	121.2	10.0	98	95 min.	-3 to +3	191957	Pass
01/30/2020	Danum Valley Drive	STA 13+00	1' BG	10"	119.4	7.5	121.2	10.0	99	95 min.	-3 to +3	191957	Pass



Field Density Summary Report

9/63

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1C

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8868

Lot: Underground

Test Type: Water Line Fire Hydrant Upper Zone

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
02/04/2020	Harau Valley Road	STA 19+34	G	10"	123.7	8.7	125.3	10.1	99	95 min.	-3 to +3	191998	Pass
02/04/2020	Geyser Valley Street	STA 15+38	G	10"	124.0	7.8	125.3	10.1	99	95 min.	-3 to +3	191998	Pass
02/04/2020	Geyser Valley Street	STA 11+36	G	10"	125.9	8.5	125.3	10.1	100	95 min.	-3 to +3	191998	Pass
02/07/2020	Danum Valley Drive	STA 10+77	G	10"	125.2	8.1	125.3	10.1	100	95 min.	-3 to +3	191998	Pass



Field Density Summary Report

10/63

Client: Pulte Tucson Land

Project Name: Rancho Vistoso Valley Vista

Job Name: 5X and 5W Phase 1C

Cross Streets: N Rancho Vistoso Boulevard and E Tangerine Road

Job ID #: 8868

Lot: Underground

Test Type: Water Line Services

Date	Street	Lot / Sta.	Depth of Test	Direct Trans. Used	Field Dry Density (lb/ft ³)	Field Moisture (%)	Max Dry Density (corr) (lb/ft ³)	Opt. Moisture (corr) (%)	% Comp.	Density Spec. (%)	Moisture Spec. (%)	Proctor Lab #	Pass
02/04/2020	Geyser Valley Street	STA 16+98 (Lot 164)	G	10"	125.8	8.1	125.3	10.1	100	95 min.	-3 to +3	191998	Pass
02/04/2020	Geyser Valley Street	STA 14+88 (Lot 161)	1' BG	10"	122.3	8.5	125.3	10.1	98	95 min.	-3 to +3	191998	Pass
02/04/2020	Geyser Valley Street	STA 18+18 (Lot 167)	1' BG	10"	124.9	9.7	125.3	10.1	100	95 min.	-3 to +3	191998	Pass
02/04/2020	Geyser Valley Street	STA 18+61 (Lot 134)	1' BG	10"	123.9	7.9	125.3	10.1	99	95 min.	-3 to +3	191998	Pass
02/04/2020	Geyser Valley Street	STA 17+41 (Lot 137)	G	10"	123.3	7.9	125.3	10.1	98	95 min.	-3 to +3	191998	Pass
02/04/2020	Harau Valley Road	STA 20+65 (Lot 128)	1' BG	10"	123.0	7.9	125.3	10.1	98	95 min.	-3 to +3	191998	Pass
02/04/2020	Harau Valley Road	STA 19+80 (Lot 131)	G	10"	119.9	8.5	125.3	10.1	96	95 min.	-3 to +3	191998	Pass
02/04/2020	Geyser Valley Street	STA 15+01 (Lot 140)	1' BG	10"	119.5	8.8	125.3	10.1	95	95 min.	-3 to +3	191998	Pass
02/04/2020	Geyser Valley Street	STA 10+52 (Lot 149)	G	10"	118.9	8.7	125.3	10.1	95	95 min.	-3 to +3	191998	Pass
02/04/2020	Geyser Valley Street	STA 12+43 (Lot 146)	1' BG	10"	124.3	8.4	125.3	10.1	99	95 min.	-3 to +3	191998	Pass
02/04/2020	Geyser Valley Street	STA 13+91 (Lot 143)	G	10"	122.8	8.2	125.3	10.1	98	95 min.	-3 to +3	191998	Pass
02/07/2020	Danum Valley Drive	STA 12+53 (Lot 159)	G	10"	120.3	9.4	125.3	10.1	96	95 min.	-3 to +3	191998	Pass

Rancho Vistoso Valley Vista 5X and 5W Phase 1C
Town of Oro Valley, Arizona
ProTeX Job ID: 8868



Laboratory Tests



ProTeX the PT Xperts LLC
1102 W. Southern Ave., Ste. 4 Office: (602)-272-7891
Tempe, AZ 85282 Fax: (602) 272-7892

Soils Summary

Client: Pulte Tucson Land
Project Name: Rancho Vistoso
Job Name: 5X and 5W Mass Grading
Material: Native (On-Site)
Material Supplier: -
Sample Location: Lot 10 (-)

ProTeX Job No: 8944
ProTeX Lab No: 191957 - Phoenix
Date Received: 3/27/2019
Sampled By: Joseph Navarro
Date Sampled: 3/25/2019
Submitted By: Joseph Navarro

Plasticity Index	
Liquid Limit	NA
Plastic Limit	NA
Plasticity Index	NA

Expansion Index, (EI)	Potential Expansion
0 - 20	Very Low
21 - 51	Low
52 - 90	Medium
91 - 130	High
> 130	Very High

Expansion Index	
EI =	NA

Percent Swell of Soil	
% Swell	NV
Notes:	

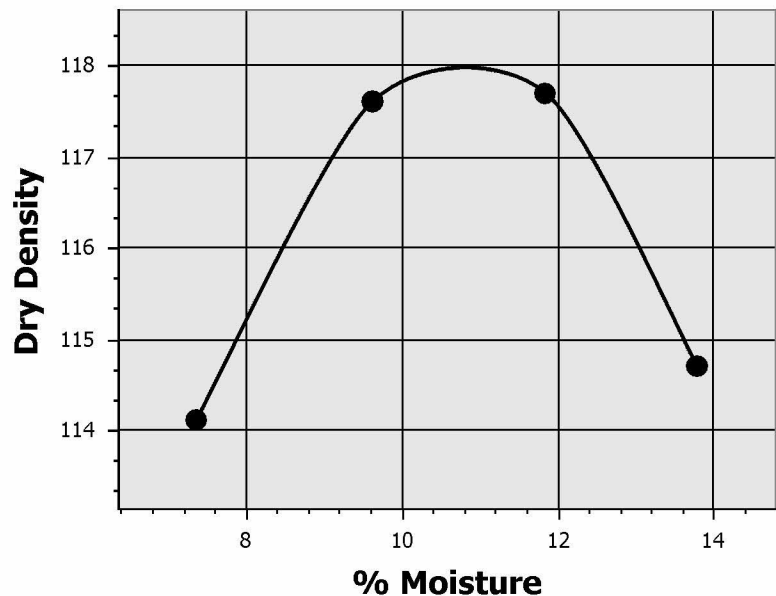
pH and Resistivity	
pH Reading:	NA
Resistivity (ohms-cm)	NA

Class: _____
Symbol: _____

ASTM D698-A	
Moisture Density (Proctor)	
Max. Dry Density	118.0
Opt. Moisture %	10.8
Corr. Max. Dry Density	121.2
Corr. Opt. Moisture %	10.1
% Rock	8

* = out of specification

Moisture Vs. Density



Remarks: Grus with sand

Reviewed By: _____

Jerald W Grossarth



ProTeX the PT Xperts LLC
1102 W. Southern Ave., Ste. 4 Office: (602)-272-7891
Tempe, AZ 85282 Fax: (602) 272-7892

Soils Summary

Client: Pulte Tucson Land
Project Name: Rancho Vistoso
Job Name: 5X and 5W Mass Grading
Material: Native (On-Site)
Material Supplier: -
Sample Location: Lot 40 (-)

ProTeX Job No: 8944
ProTeX Lab No: 191963 - Phoenix
Date Received: 3/27/2019
Sampled By: Joseph Navarro
Date Sampled: 3/25/2019
Submitted By: Joseph Navarro

Plasticity Index	
Liquid Limit	NA
Plastic Limit	NA
Plasticity Index	NA

Expansion Index, (EI)	Potential Expansion
0 - 20	Very Low
21 - 51	Low
52 - 90	Medium
91 - 130	High
> 130	Very High

Expansion Index	
EI =	NA

Percent Swell of Soil	
% Swell	NV
Notes:	

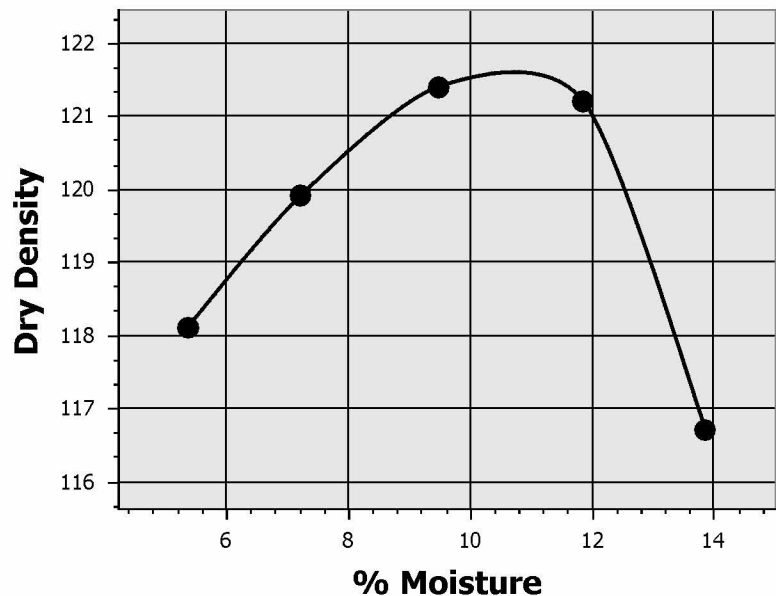
pH and Resistivity	
pH Reading:	NA
Resistivity (ohms-cm)	NA

Class: _____
Symbol: _____

ASTM D698-A	
Moisture Density (Proctor)	
Max. Dry Density	121.6
Opt. Moisture %	10.7
Corr. Max. Dry Density	123.8
Corr. Opt. Moisture %	10.0
% Rock	7

* = out of specification

Moisture Vs. Density



Remarks: Grus with sand

Reviewed By: _____

Jerald W Grossarth



ProTeX the PT Xperts LLC
1102 W. Southern Ave., Ste. 4 Office: (602)-272-7891
Tempe, AZ 85282 Fax: (602) 272-7892

Soils Summary

Client: Pulte Tucson Land
Project Name: Rancho Vistoso
Job Name: 5X and 5W Mass Grading
Material: Native (On-Site)
Material Supplier: -
Sample Location: Lot 91 (#4)

ProTeX Job No: 8944
ProTeX Lab No: 191998 - Phoenix
Date Received: 3/28/2019
Sampled By: Joseph Navarro
Date Sampled: 3/25/2019
Submitted By: Joseph Navarro

Plasticity Index	
Liquid Limit	NA
Plastic Limit	NA
Plasticity Index	NA

Expansion Index, (EI)	Potential Expansion
0 - 20	Very Low
21 - 51	Low
52 - 90	Medium
91 - 130	High
> 130	Very High

Expansion Index	
EI =	NA

Percent Swell of Soil	
% Swell	NV
Notes:	

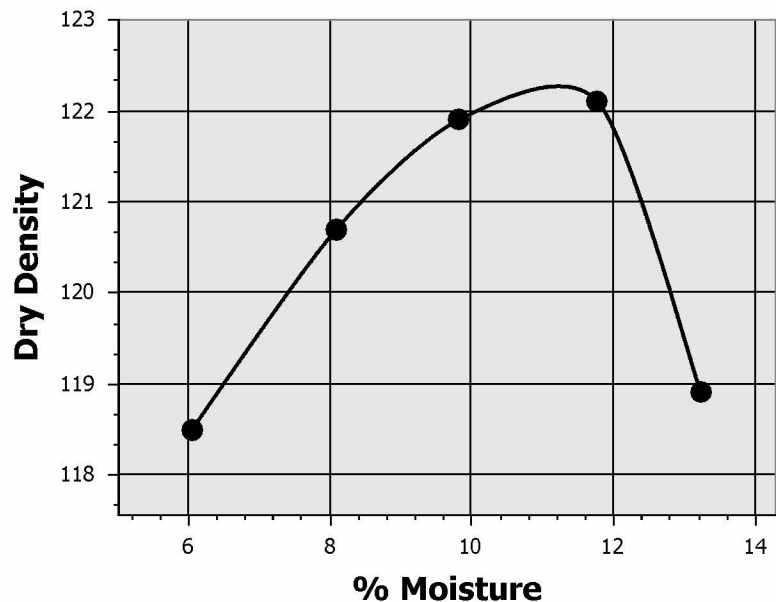
pH and Resistivity	
pH Reading:	NA
Resistivity (ohms-cm)	NA

Class: _____
Symbol: _____

ASTM D698-A	
Moisture Density (Proctor)	
Max. Dry Density	122.3
Opt. Moisture %	11.2
Corr. Max. Dry Density	125.3
Corr. Opt. Moisture %	10.2
% Rock	10

* = out of specification

Moisture Vs. Density



Remarks:

Reviewed By:

Jerald W Grossarth