SOILS SOUTHWEST, INC.

SOILS, MATERIALS AND ENVIRONMENTAL ENGINEERING CONSULTANTS

897 VIA LATA, SUITE N • COLTON, CA 92324 • (909) 370-0474 • (909) 370-0481 • FAX (909) 370-3156

May 24, 2024 Project No. 24019-PV

Weka, Inc.
236 W. Orange Show Road, Suite 114
San Bernardino, California 92408

Attention: Mr. Jared Himie

Subject: Report of Onsite and Offsite Paving Design
Planned Truck and Trailer Facility
Waalew Road. Apple Valley, California
APN: 0440-014-11

Dear Mr. Henderson,

The following presents the paving thickness for the on-site onsite drives and parking along sections along with offsite street improvements & drive approach(s).

The subgrade soils exposed within the areas of the street widening primarily consist of fine to medium sands with some silts and some pebbles. The results of the laboratory determined soils' grain size distribution are attached.

Based on the sieve analysis for the represented soil sample (PV-3) procured along with the laboratory determined soils' Sand Equivalent, SE of 39.05, 7.99,2.0, and 25.28 for PV-1 to PV-5 respectively, and using a laboratory determined soils' R-value of 53 and 70, along with an assumed Traffic Index, TI of 7, it is our opinion that within the areas of the street widening, the paving thickness should be as presented in the table below.

Design Parameters

Street	Assumed Traffic, TI Used	Laboratory Determined Soils' Sand Equivalent, SE	Laboratory Determined Soils' R-value
PV-3 Onsite: Southwest portion	7	2.0	53
PV-5Offsite: Waalew Road	7	25.28	70

Design Paving Section

Street/ R-Value Used	Traffic Index, TI Used	Designed AC Thickness, inches	Designed Base Thickness, inches	Total Designed Thickness, inches
Onsite Streets SW R =53	7 10	3 5	7 9	10.0 14.0
Offsite Waalew Road-Shoulder R = 70	7 10	3 5	2 3	5.0 8.0

No updated paving or existing paving thickness should be warranted.

Respectfully submitted,
Soils Southwest, Inc.

Malay Gupta, RCE 31708

PLOT PLAN AND TEST LOCATION
Planned Truck and Trailer Facility
Waalew Road. Apple Valley, California

NTS

Legend: PV-1 Approximate Location of Paving Sample

Plate 1

Project No. 24019-PV Weka, Inc., Waalew Road, Apple Valley, CA

Onsite & Offsite Parking Paving	Traffic Index, TI	Sand Equivalent, SE	R_{soil} (used)	Rbase (used)78	Gravel Equivalent, Total, Getotal	Gravel Equivalent, GE_{ac}	Gravel Factor, Gf_{ac}	Asphalt Thickness, t_{ac} (in)	CL II base thickness, t_{base} (in)
Onsite Parking & Drive Paving	7	2	53	78	1.053	0.493	2.196	3	7
PV-1 @ 0-2 ft	10	2	53	78	1.504	0.704	1.837	5	9
Offiste	7	3.83	70	78	0.672	0.493	2.196	3	2
Waalew Road (shoulder) PV-5 @ 0-1 ft	10	3.83	70	78	0.960	0.704	1.837	5	3

ANAHEIM TEST LAB, INC

196 Technology Drive, Unit D
Irvine, CA 92618
Phone (949) 336-6544

TO:

SOILS SOUTHWEST, INC.
897 VIA LATA # N
COLTON, CA. 92324

DATE: 5/24/2024

P.O. NO.: Verbal

LAB NO.: C-7929, 1-2

SPECIFICATION: CA 301

MATERIAL: Soil

Project No.: 24019-PV
Project: Weka Inc.
Waalew Rd, Apple Valley, CA
Sample Date: 5/15/2024

ANALYTICAL REPORT
"R" VALUE

	BY EXUDATION	BY EXPANSION
1) PV-3 @ 0-2'	53	N/A
2) PV-5 @ 0-2' Off Site	70	N/A

RESPECTFULLY SUBMITTED

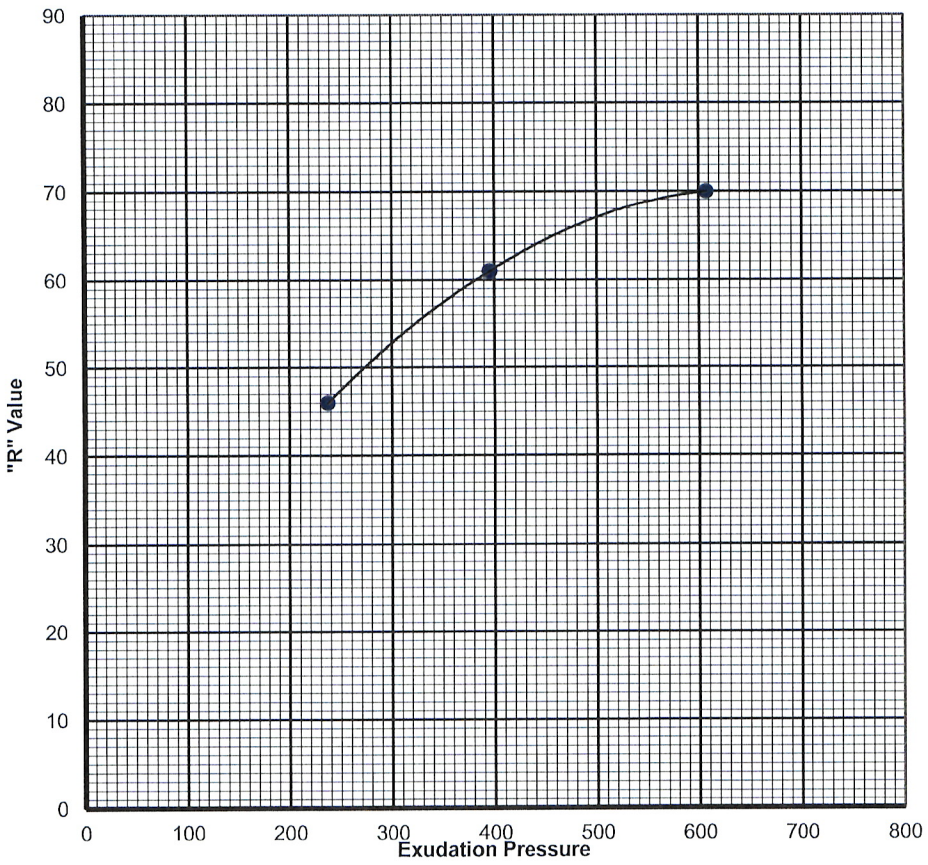
WES BRIDGER LAB MANAGER

"R" VALUE CA 301

Client: Soils Southwest, Inc. **ATL No.:** C 7929-1 **Date:** 5/24/2024
Client Reference No.: 24019-PV
Sample: PV-3 @ 0-2' **Soil Type:** Brown, Clayey Sand

TEST SPECIMEN		A	B	C	D
Compactor Air Pressure	psi	100	200	300	
Initial Moisture Content	%	4.0	4.0	4.0	
Moisture at Compaction	%	9.6	8.8	7.9	
Briquette Height	in.	2.49	2.47	2.47	
Dry Density	pcf	127.7	128.2	130.1	
EXUDATION PRESSURE	psi	237	396	607	
EXPANSION PRESSURE	psf	0	108	251	
Ph at 1000 pounds	psi	32	25	20	
Ph at 2000 pounds	psi	68	50	38	
Displacement	turns	3.99	3.54	3.41	
"R" Value		46	61	70	
CORRECTED "R" VALUE		46	61	70	

Final "R" Value	
BY EXUDATION: @ 300 psi	**53**
BY EXPANSION: TI = 5.0	**N/A**

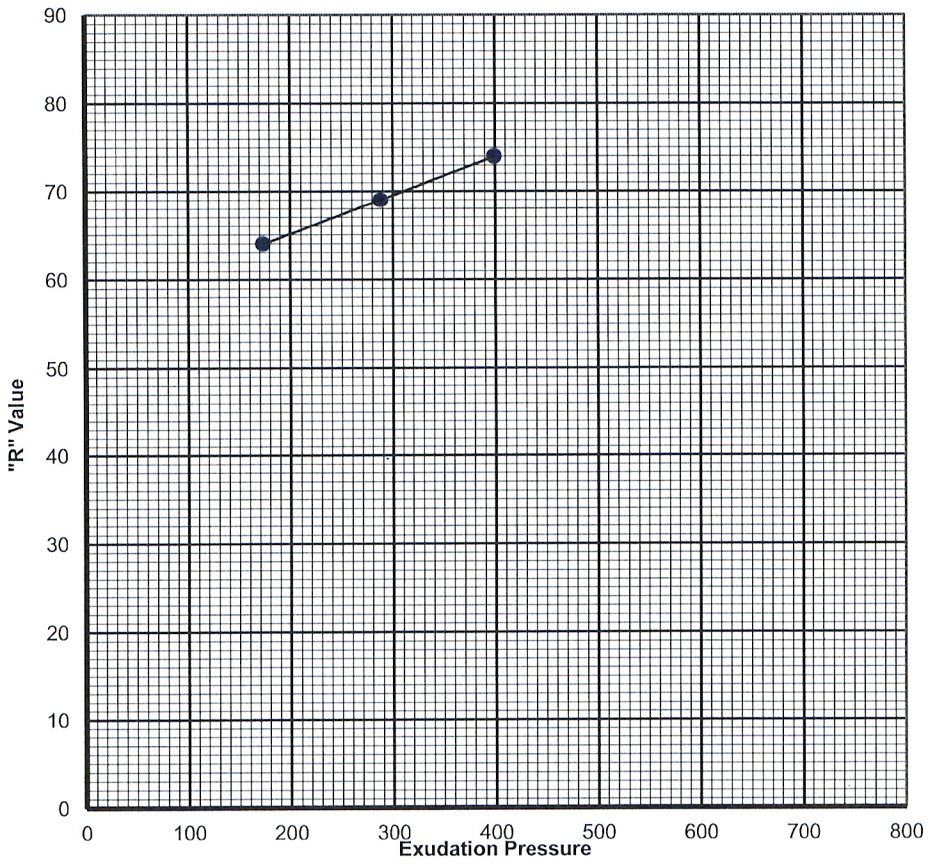


"R" VALUE CA 301

Client: Soils Southwest, Inc. **ATL No.:** C 7929-2 **Date:** 5/24/2024
Client Reference No.: 24019-PV
Sample: PV-5 @ 0-2' Off Site **Soil Type:** Brown, Silty Sand

TEST SPECIMEN		A	B	C	D
Compactor Air Pressure	psi	250	200	200	
Initial Moisture Content	%	3.6	3.6	3.6	
Moisture at Compaction	%	7.9	8.5	8.2	
Briquette Height	in.	2.49	2.49	2.50	
Dry Density	pcf	129.0	133.7	131.6	
EXUDATION PRESSURE	psi	399	174	288	
EXPANSION PRESSURE	psf	0	0	0	
Ph at 1000 pounds	psi	17	23	20	
Ph at 2000 pounds	psi	32	41	36	
Displacement	turns	3.47	4.09	3.82	
"R" Value		74	64	69	
CORRECTED "R" VALUE		74	64	69	

Final "R" Value	
BY EXUDATION: @ 300 psi	**70**
BY EXPANSION: TI = 5.0	**N/A**

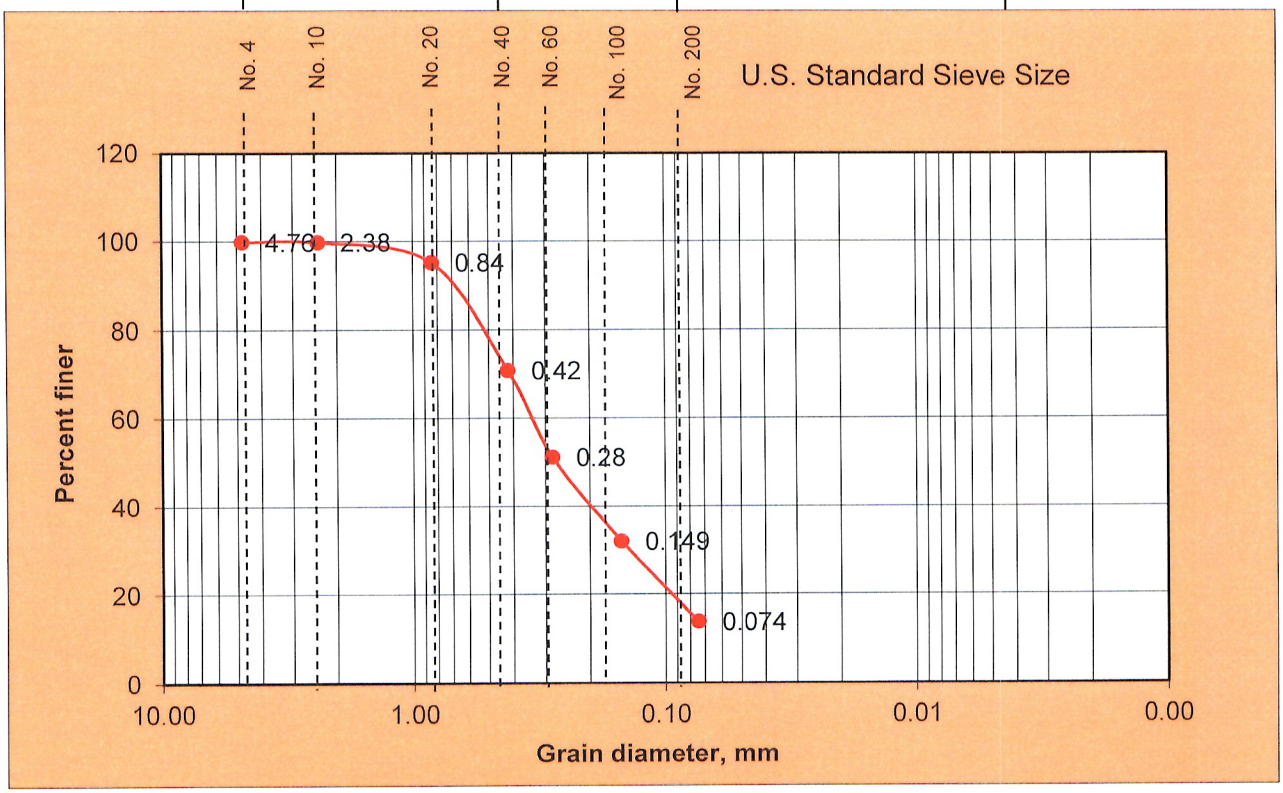


GRAIN SIZE DISTRIBUTION

Project: Weka, Inc. **Job #** 24019-BMP
Location: Waalew Rd. w/o Navajo Rd, Apple Valley **Boring No:** PV-3@0-2 **Sample No:** 3
Description of Soil: SP-SM
Date of Sample: 5/10/2024
Tested By: JF **Date of Testing:** 5/16/2024

Sieve No.	Sieve Openings in mm	Percent Finer	Grain Size	% Retained
4	4.76	99.90	Gravel	0
10	2.38	99.84	Med. to Crs	25
20	0.84	95.26	Fines	58
40	0.42	70.98	Silts/Clays	17
60	0.28	51.24		
100	0.149	32.08		
200	0.074	13.84		

Gravel	Sand			
	Coarse to Medium	Fine	Silt	Clay



Visual Soil Description : SAND - slightly silty yellow tannish brown, fine to medium, pebbles, scattered rock fragments, dry

Soil Classification: SP-SM

System: USC

SOILS SOUTHWEST INC.
Consulting Foundation Engineers

SAND EQUIVALENT TEST

Test Date: May 15, 2024

Project No.: 24019-PV

Job Name: Weka Inc.
Waalew Road w/o Navajo Road, Apple Valley

Sample Location: PV-1 @ 0-2' East side

Sample by: JF

Tested by: JG

LABORATORY DATA

SAMPLE NO.	1	2	3	4
TIME START	7:04	7:09	7:14	
TIME SOAK (10 min.)	7:14	7:19	7:24	
TIME AT LEVEL 15ML	7:16	7:21	7:26	
TIME of READING (20-min)	7:36	7:41	7:46	
FINE, ML	5.9	5.8	5.7	
COARSE, ML	2.4	2.3	2.1	
SE = 100x (coarse/fine)	40.67	39.65	36.84	
SE Average	39.05			

SAND EQUIVALENT TEST

Test Date: May 15, 2024

Project No.: 24019-PV

Job Name: Weka Inc.
Waalew Road w/o Navajo Road, Apple Valley

Sample Location: PV-2 @ 0-2' Southeast

Sample by: JF

Tested by: JG

LABORATORY DATA

SAMPLE NO.	1	2	3	4
TIME START	8:09	8:14	8:19	
TIME SOAK (10 min.)	8:19	8:24	8:29	
TIME AT LEVEL 15ML	8:21	8:26	8:31	
TIME of READING (20-min)	8:41	8:46	8:51	
FINE, ML	5.8	5.9	5.8	
COARSE, ML	0.4	0.5	0.5	
SE = 100x (coarse/fine)	6.89	8.47	8.62	
SE Average	7.99			

SAND EQUIVALENT TEST

Test Date: May 15, 2024

Project No.: 24019-PV

Job Name: Weka Inc.
Waalew Road w/o Navajo Road, Apple Valley

Sample Location: PV-3 @ 0-2' west

Sample by: JF

Tested by: JG

LABORATORY DATA

SAMPLE NO.	1	2	3	4
TIME START	9:10	9:15	9:20	
TIME SOAK (10 min.)	9:20	9:25	9:30	
TIME AT LEVEL 15ML	9:22	9:27	9:32	
TIME of READING (20-min)	9:42	9:47	9:52	
FINE, ML	6.6	6.5	6.7	
COARSE, ML	0.1	0.1	0.2	
SE = 100x (coarse/fine)	1.51	1.53	2.98	
SE Average	2.0			

SAND EQUIVALENT TEST

Test Date: May 15, 2024

Project No.: 24019-PV

Job Name: Weka Inc.
Waalew Road w/o Navajo Road, Apple Valley

Sample Location: PV-4 @ 0-2' north side

Sample by: JF

Tested by: JG

LABORATORY DATA

SAMPLE NO.	1	2	3	4
TIME START	10:11	10:16	10:21	
TIME SOAK (10 min.)	10:21	10:26	10:31	
TIME AT LEVEL 15ML	10:23	10:28	10:33	
TIME of READING (20-min)	10:43	10:48	10:53	
FINE, ML	5.8	5.8	5.7	
COARSE, ML	0.2	0.2	0.2	
SE = 100x (coarse/fine)	3.44	3.44	3.50	
SE Average	3.46			

SAND EQUIVALENT TEST

Test Date: May 15, 2024

Project No.: 24019-PV

Job Name: Weka Inc.
Waalew Road w/o Navajo Road, Apple Valley

Sample Location: PV-5 @ 0-1' offsite-south shoulder of Waalew Road n/o PV-4

Sample by: JF

Tested by: JG

LABORATORY DATA

SAMPLE NO.	1	2	3	4
TIME START	11:18	11:23	11:28	
TIME SOAK (10 min.)	11:28	11:33	11:38	
TIME AT LEVEL 15ML	11:30	11:35	11:40	
TIME of READING (20-min)	11:50	11:55	12:00	
FINE, ML	5.5	5.6	5.5	
COARSE, ML	1.3	1.5	1.4	
SE = 100x (coarse/fine)	23.63	26.78	25.45	
SE Average	25.28			