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Terracon.com

May 31, 2022

TEBO Properties
3111 28th Street
Boulder, Colorado 80301

Attn: Mr. George Chelwick
P: (303) 447-8326
E: gchelwick@teboproperties.com

Re: Corrosion Properties Laboratory Test Results
City of Lyons Land Annexation
4545 Ute Highway
Longmont, Colorado
Terracon Project No. 22215049

Dear Mr. Chelwick:

Previously, Terracon Consultants, Inc. (Terracon) prepared a Geotechnical Engineering Report (Project No. 22215049; report dated May 19, 2022) for the project referenced above. The water-soluble sulfate testing and corrosivity testing were not complete at the time the report was prepared. This supplemental letter presents the results of the water-soluble sulfate testing and corrosivity testing performed for the on-site soils.

Terracon performed laboratory testing on soil samples collected from the site to determine the potential corrosive characteristics of the on-site soils with respect to contact with the various underground materials that will be used for project construction. Bulk samples of the upper soils were collected from select borings completed at this site and selected for laboratory testing. Laboratory test results for the samples tested exhibited the following properties:

Corrosion Properties Laboratory Test Results

City of Lyons Land Annexation ■ Longmont, Colorado
May 31, 2022 ■ Terracon Project No. 22215049



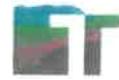
Sample Identification	Water-soluble Sulfate	Redox Potential	Sulfide	Water-soluble Chloride	Electrical Resistivity ¹	Total Salts	pH
	(%)	(mV)	(Presence)	(%)	(ohm-cm)	(%)	
Boring B-4 at 1 to 4 feet	0.0006	+410	Nil	0.0054	3,660	538	7.77
Boring B-1 at 1 to 4 feet	0.0008	--	--	--	--	--	--
Boring B-6 at 1 to 4 feet	0.0003	--	--	--	--	--	--

1. Resistivity determined on saturated samples.

Results of water-soluble sulfate testing indicate Exposure Class S0 according to ACI 318. ASTM Type I or II portland cement should be specified for all new project concrete on and below grade. Foundation concrete should be designed for low sulfate exposure in accordance with the provisions of the ACI Design Manual, Section 318, Chapter 4.

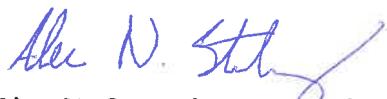
Terracon recommends providing the laboratory test results regarding potential corrosive characteristics of the on-site soils materials encountered below this site to a corrosion specialist to interpret the data and incorporate the test results into the design of new development at the site.

The recommendations presented in this letter should be used in conjunction with those presented in our initial Geotechnical Engineering Report for the project. The General Comments section of our initial report should be reviewed and understood to apply to those engineering recommendations and opinions presented herein.



We appreciate the opportunity to continue to be of service to you on this project. If you have any questions or concerns regarding the content of this report, please feel free to contact us.

Sincerely,
Terracon Consultants, Inc.

A blue ink signature of Alec N. Strassburg.

Alec N. Strassburg, P.E. (KS, OK)
Project Engineer



Eric D. Bernhardt, P.E.
Geotechnical Department Manager

Attachments: Chemical Laboratory Test Reports (2 pages)

Copies to: Addressee (via e-mail)
 Mr. James Dixon, TEBO Properties (via e-mail)

15 Marway Cir Ste 2B
Rochester, NY 14624
(585) 247-3471

**Client**

TEBO Properties
Boulder, CO

Project

City of Lyons Land Annexation
22215049

Date Received: 5/19/2022

Results from Corrosion Testing

Sample Location	B-4
Sample Depth (ft.)	1.0'-4.0'

pH Analysis, ASTM G 51	7.77
Water Soluble Sulfate (SO ₄), ASTM C 1580 (ppm)	6
Sulfides, AWWA 4500-S D, (mg/kg)	Nil
Chlorides, ASTM D 512, (ppm)	54
Red-Ox, ASTM G 200, (mV)	+410
Total Salts, AWWA 2520 B, (mg/kg)	538
Resistivity (Saturated), ASTM G 57, (ohm-cm)	3660

Analyzed By: _____
ChrisAnne Ross
Field Geologist

The tests were performed in general accordance with applicable ASTM and AWWA test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.

15 Marway Cir Ste 2B
Rochester, NY 14624
(585) 247-3471

**Client**

TEBO Properties
Boulder, CO

Project

City of Lyons Land Annexation
22215049

Date Received: 5/19/2022

Results from Corrosion Testing

Sample Location	B-1	B-6
Sample Depth (ft.)	1.0'-4.0'	1.0'-4.0'

Water Soluble Sulfate (SO ₄), ASTM C 1580 (ppm)	8	3
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Analyzed By: _____
ChrisAnne Ross
Field Geologist

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