



LETTER OF TRANSMITTAL

PIPELINE CONTRACTORS

8600 Verbena St.
Commerce City, CO 80022
Office 303-289-4355
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ISSUED TO:

Owner ATTN: Owner Representative

DATE:

REGARDING:

TRANSMITTAL NO.:

Project JBS Job No 00XX

We are issuing you under separate cover the following (via):

- Blue Prints
- Submittals
- Change Order
- Request for Information
- Copy of a letter
- Shop Drawings

#	Copies	Item Dated	Item #	Description
	1-Electronic		A-003	Water and Sanitary Bedding To be mixed with Squeegee

- For your bid
- For Approval
- As Requested
- Returned for Correction
- For Review and Comment
- For Pricing

Prints are loaned to you and are to be returned to us by:

Date: _____

Bids are due on or before:

Date: _____

COMMENTS

CC:

Amie Parent

Amie Parent
JBS Pipeline Contractors

April 18, 2019

Mr. Joe Frei
Albert Frei and Sons
PO Box 700
Henderson, Colorado 80640

Subject: Physical Properties Testing
Aurora Squeegee
Project No. 19-1001

Dear Joe:

This letter presents results of physical properties testing performed on material picked up at your facility in January 2019. Representative samples delivered were identified as Aurora Squeegee from the Hatchery Pit in Henderson, Colorado. Testing was performed to determine the materials compliance with ASTM, AASHTO, and City of Aurora specifications. The following testing was performed in general conformance with the applicable standards.

- 1) Sieve Analysis (Gradation) – ASTM C 136 (AASHTO T 27)
- 2) Material Finer Than No. 200 Sieve by Washing – ASTM C 117 (AASHTO T 11)
- 3) Specific Gravity & Absorption of Coarse Aggregate – ASTM C 127 (AASHTO T 85)
- 4) Clay Lumps & Friable Particles in Aggregate – ASTM C 142 (AASHTO T 112)
- 5) Rodded Unit Weight & Voids – ASTM C 29 (AASHTO T 19)
- 6) Loose Unit Weight & Voids – ASTM C 29 (AASHTO T 19)
- 7) Los Angeles Abrasion – ASTM C 131 (AASHTO T 96)
- 8) Moisture Content – ASTM D 2216 (AASHTO T 265)
- 9) Fractured Faces – ASTM D 5821 (AASHTO T 335)

A summary of the aggregate test results is attached, followed by the complete test results. Based on the test results, the material tested meets the required specifications for No. 9 Stone.

Respectfully submitted,

BEST ENGINEERING


Matthew A. Best, P.E.
Project Engineer



BEST ENGINEERING SOLUTIONS AND TECHNOLOGIES

AGGREGATE SUMMARY SHEET

PROJECT INFORMATION

PROJECT NAME:	2019 Aggregate Qualification	CLIENT NAME:	Albert Frei and Sons
MATERIAL TYPE:	Aurora Squeegee	PROJECT NUMBER:	19-1001
SAMPLE LOCATION:	Hatchery Pit		

MECHANICAL SIEVE ANALYSIS (ASTM C 136, ASTM C 117, ASTM D 422)					
SIEVE SIZE		PERCENT PASSING	City of Aurora Spec	ASTM C 33 SPEC	AASHTO (CDOT) SPEC
US STD	METRIC				
3/8"	9.5	100	100	-	-
NO. 4	4.75	94	70-100	-	-
NO. 8	2.36	75	36-43	-	-
NO.16	1.18	54	20-82	-	-
NO. 30	0.6	35	8-65	-	-
NO. 50	0.3	18	2-30	-	-
NO. 100	0.15	5	1-10	-	-
NO. 200	0.075	1.2	0-5	-	-

*INDICATES OUT OF TOLERANCE

SPECIFIC GRAVITY AND ABSORPTION (ASTM C 127)			
	RESULTS	SPECIFICATION	PASS/FAIL
Specific Gravity	2.60	N/A	N/A
Absorption (%)	1.1%	N/A	N/A

CLAY LUMPS AND FRIABLE PARTICLES (ASTM C 142)			
	RESULTS	SPECIFICATION	PASS/FAIL
Weighted Particles	0.2%	2.0% Max	Pass

UNIT WEIGHT AND VOIDS IN AGGREGATE (ASTM C 29)			
Rodded	RESULTS	SPECIFICATION	PASS/FAIL
Unit Weight (pcf)	99	N/A	N/A
Percent Voids	83%	N/A	N/A
Tons per cubic yard	1.34	N/A	N/A
Loose	RESULTS	SPECIFICATION	PASS/FAIL
Unit Weight (pcf)	93	N/A	N/A
Percent Voids	42%	N/A	N/A
Tons per cubic yard	1.26	N/A	N/A

LOS ANGELES ABRASION (ASTM C 131)			
Grading C	RESULTS	SPECIFICATION	PASS/FAIL
Percent Loss	34.6%	50% Max	Pass

DETERMINATION OF MOISTURE CONTENT OF SOIL AND ROCK (ASTM D 2216)			
	RESULTS	SPECIFICATION	PASS/FAIL
Aurora Squeegee	0.6%	N/A	N/A

PERCENTAGE OF FRACTURED PARTICLES (ASTM D 5821)			
2 Or More Faces	RESULTS	SPECIFICATION	PASS/FAIL
Percent Fractured	95.6%	N/A	N/A

ATTACHMENT A
LABORATORY TEST RESULTS

PROJECT INFORMATION

PROJECT NAME:	2019 Aggregate Qualification	CLIENT NAME:	Albert Frei and Sons
MATERIAL TYPE:	Aurora Squeegee	PROJECT NUMBER:	19-1001
SAMPLE LOCATION:	Hatchery Pit		

SPECIFIC GRAVITY AND ABSORPTION (COARSE) (ASTM C 127)				
Oven Dry Weight (g)	SSD Weight (g)	Submerged Weight (g)	Bulk (SSD) Specific Gravity	Absorption (%)
2500.3	2529.0	1555.0	2.60	1.1%

Material Finer Than No. 200 Sieve (ASTM C 117)		
Initial Dry Weight (g)	Final Dry Weight (g)	Passing No. 200 Sieve (%)
642.5	634.9	1.2%

UNIT WEIGHT AND VOIDS IN AGGREGATE (ASTM C 29)			
Rodded	Sample Weight (lbs)	Bucket Volume (ft ³)	Unit Weight (pcf)
Sample 1	24.68	0.25	98.7
Sample 2	24.87	0.25	99.5
Sample 3	24.77	0.25	99.1
Average Unit Weight			99
Loose	Sample Weight (lbs)	Bucket Volume (ft ³)	Unit Weight (pcf)
Sample 1	23.12	0.25	92.5
Sample 2	23.37	0.25	93.5
Sample 3	23.26	0.25	93.0
Average Unit Weight			93

CLAY LUMPS AND FRIABLE PARTICLES (ASTM C 142)					
Retained Sieve Size	Percent Grading	Initial Weight (g)	Final Weight (g)	Percent Loss	Weighted Loss (%)
No. 4	6	2005.0	1998.1	0.3%	0.0%
No. 16	40	50.1	49.8	0.6%	0.5%
- No. 16	54	-	-	-	-
Total Grading	100	Total Weighted Loss		0.5%	

PERCENTAGE OF FRACTURED PARTICLES (ASTM D 5821)		
Initial Weight (g)	Final Weight (g)	Fractured Particles Minimum 2 Faces (%)
151.3	144.6	95.6%

LOS ANGELES ABRASION (ASTM C 131)			
Grading	Initial Weight (g)	Final Weight (g)	Percent Loss (%)
C	5001.2	3271.8	34.6