



Submittal Review Response

Project Name: **Hilo WWTP Rehabilitation and Replacement Project Phase 1**
Submittal No.: **02050.-01.1**
Date: **6/5/2025**

Client: County of Hawai'i Carollo Project No.: 203975
Contractor: Nan, Inc.
Submittal Name: Puna Rock Aggregate
Reviewed By: J. Ewing

SUBMITTAL REVIEW

Review is for general compliance with contract documents. No responsibility is assumed by Carollo for correctness of quantities, dimensions, and details. No deviation or variation is approved unless specifically addressed in these review comments. Refer to Section 01330 for additional requirements. The Contractor shall assume full responsibility for coordination with all other trades and deviations from contract requirements.

Approved	<input type="checkbox"/> No Exceptions
	<input checked="" type="checkbox"/> Make Corrections Noted - See Comments
	<input type="checkbox"/> Make Corrections Noted - Confirm
Not Approved	<input type="checkbox"/> Correct and Resubmit
	<input type="checkbox"/> Rejected - See Remarks
Receipt Acknowledged	<input type="checkbox"/> Filed for Record
	<input type="checkbox"/> With Comments - Resubmit

Review Comments:

- Under "Specification" in the table on page 7 of the test report, the reference should be to the project specification rather than to Hawai'i Standard Spec., 703.06 even though the two are the same. This also applies to other parts of the submittal.

CONTRACTOR SUBMITTAL TRANSMITTAL FORM

Owner: County of Hawaii **Date:** 5/30/2025
Contractor: Nan, Inc. **Project No.:** WW-4705R
Project Name: Hilo WWTP Phase 1 **Submittal Number:** 02050-001.1
Submittal Title: Puna Rock Aggregate Report and Data
To: Enginner
From: Nan Inc

Specification No. and Subject of Submittal / Equipment Supplier			
Spec #:	02050	Subject:	Puna Rock Aggregate Report and Data
Authored By:	M. Chun	Date Submitted:	5/30/2025

Submittal Certification		
Check Either (A) or (B):		
<input checked="" type="checkbox"/>	(A)	We have verified that the equipment or material contained in this submittal meets all the requirements specified in the project manual or shown on the contract drawings with no exceptions.
<input type="checkbox"/>	(B)	We have verified that the equipment or material contained in this submittal meets all the requirements specified in the project manual or shown on the contract drawings except for the deviations listed.
Certification Statement: By this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data, and I have checked and coordinated each item with other applicable approved shop drawings and all Contract requirements.		
General Contractor's Reviewer's Signature:		
Printed Name and Title:		
In the event, Contractor believes the Submittal response does or will cause a change to the requirements of the Contract, Contractor shall immediately give written notice stating that Contractor considers the response to be a Change Order.		
Firm:	Signature:	Date Returned:

PM/CM Office Use		
Date Received GC to PM/CM:		
Date Received PM/CM to Reviewer:		
Date Received Reviewer to PM/CM:		
Date Sent PM/CM to GC:		

Nan, Inc

PROJECT: HILO WWTP REHABILITATION
AND REPLACEMENT PROJECT - PHASE 1

JOB NO. WW-4705R

THIS SUBMITTAL HAS BEEN CHECKED BY
THIS CONTRACTOR. IT IS CERTIFIED
CORRECT, COMPLETE, AND IN
COMPLIANCE WITH CONTRACT
DRAWINGS AND SPECIFICATIONS. ALL
AFFECTED CONTRACTORS AND
SUPPLIERS ARE AWARE OF, AND WILL
INTEGRATE THIS SUBMITTAL (UPON
APPROVAL) INTO THEIR OWN WORK.

DATE RECEIVED 5/30/25
SPECIFICATION SECTION # 02050
SPECIFICATION Soils and Aggregates for Earthwork
PARAGRAPH 1.03
DRAWING N/A
SUBCONTRACTOR N/A
SUPPLIER Puna Rock
MANUFACTURER Puna Rock

CERTIFIED BY: M. Chun

SECTION 02050

SOILS AND AGGREGATES FOR EARTHWORK

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes: Material requirements for soils and aggregates.
- B. References to Standard Specifications apply to materials only. They do not apply to placement or use of the materials or to measurement and payment.

1.02 REFERENCES

- A. American Association of State Highway and Transportation Officials (AASHTO):
 - 1. T 11 – Standard Method of Test for Materials Finer than 75µm (No. 200) Sieve in Mineral Aggregates by Washing.
 - 2. T 27 - Standard Method of Test for Sieve Analysis of Fine and Coarse Aggregates.
 - 3. T 89 - Standard Method of Test for Determining the Liquid Limit of Soils.
 - 4. T 90 - Standard Method of Test for Determining the Plastic Limit and Plasticity Index of Soils.
 - 5. T 96 - Standard Method of Test for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
 - 6. T 104 - Standard Method of Test for Soundness of Aggregate by Use of Sodium Sulfate or Magnesium Sulfate.
 - 7. TP 95 - Standard Method of Test for Surface.
- B. ASTM International (ASTM):
 - 1. C33 - Standard Specifications for Concrete Aggregates.
 - 2. C117 - Standard Test Method for Materials Finer than 75-µm (No. 200) Sieve in Mineral Aggregates by Washing.
 - 3. C131 - Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
 - 4. C136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
 - 5. C535 - Standard Test Method for Resistance to Degradation of Larger-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
 - 6. D2419 - Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate.
 - 7. D2844 - Standard Test Method for Resistance R-Value and Expansion Pressure of Compacted Soils.
 - 8. D4318 - Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
 - 9. D4829 - Standard Test Method for Expansion Index of Soils.
 - 10. D5821 - Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate.

C. Hawaii Standard Specifications for Public Works Construction, September 1986 (Standard Specifications).

1.03 SUBMITTALS

- A. Product data:
 - ✓ 1. Material source.
 - ✓ 2. Gradation.
 - ✓ 3. Testing data.

- ✓ B. Quality control for soils and aggregates:
 - ✓ 1. Test reports: Reports of tests as required by sections of Standard Specifications and as modified by these Specifications.
 - ✓ 2. Certificates of Compliance: Certificates as required by sections of Standard Specifications and as modified by these Specifications.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Storage and protection: Protect from segregation and excessive moisture during delivery, storage, and handling.
- B. Comply with storage requirements, in this section and in the Standard Specifications.

PART 2 PRODUCTS

2.01 MATERIALS - GENERAL

- A. Provide material having maximum particle size not exceeding 3 inches and that is free of trash, lumber, debris, leaves, grass, roots, stumps, and other organic matter.
- B. Materials derived from processing demolished or removed asphalt concrete or Portland cement concrete are not acceptable.
- C. Comply with soil and aggregate material requirements as specified below.

✓ 2.02 AGGREGATE BASE COURSE

- ✓ A. Aggregate for untreated base shall consist of a crushed product of stone. It shall be free of vegetable matter and other deleterious substances and shall be of such nature that it can be compacted readily under watering and rolling to form a firm, stable base. No recycled asphaltic concrete pavement shall be used in aggregate base course.
- ✓ B. Where the mineral aggregate does not contain sufficient natural cementing material to be readily compacted, a binder material consisting of rock screenings or other approved cementitious material shall be uniformly added to and mixed into the aggregate before compaction.

- ✓ C. The crushing shall be so regulated that at least 80 percent by weight of the material retained on the No. 4 sieve is crushed particle. A crushed particle is defined as one having at least 1 mechanically fractured face.
- ✓ D. When tested in accordance with the designated methods, the aggregate base in combination with the binder material, if used, shall meet the requirements as set forth.

Test	Method	Requirement
Los Angeles Abrasion	AASHTO T 96 (Grading A)	50% Maximum
Sand Equivalent	AASHTO T 176	35% Maximum
Plasticity Index	AASHTO T 90	6 Maximum
Flat or Elongated Pieces (length-to-width or width-to-thickness ratio of 3) Grading	AASHTO T 27	Refer to grading requirements in table below for below for 1-1/2- inch maximum.

Grading Requirements			
Screen Size	Percent Passing by Weight		
	2-1/2 Inch Maximum	1-1/2 Inch Maximum	3/4 Inch Maximum
3 inch	100	--	--
2-1/2 inch	90 - 100	--	--
2 inch	--	100	--
1-1/2 inch	65 - 90	90 - 100	--
1 inch	--	--	100
3/4 inch	45 - 70	50 - 90	90 – 100
No. 4	25 - 45	25 - 50	35 – 55
No. 200	3 - 9	3 - 9	3 - 9

- ✓ E. Aggregate base course material shall be untreated base:
 - ✓ 1. Unless otherwise specified, 1-1/2-inch maximum size aggregate shall be furnished for road base, under pavement, and under structures.
 - ✓ 2. For backfill of pipe trenches above the pipe zone, maximum aggregate size shall be 3/4-inch.

✓ 2.03 CRUSHED ROCK (GRAVEL)

- ✓ A. Crushed rock shall be manufactured from sound durable lava rock and shall be free from vegetable matter and other deleterious substances. The wear, when tested under AASHTO Test Method T 96, shall not exceed 50 percent at 500 revolutions.
- ✓ B. Crushed rock shall be designated by numbers, and the percentage composition by weight shall fall within the limits indicated in the table below. Unless otherwise

permitted or directed by Engineer, crushed rock or gravel for area-wide surfacing shall be No. 4.

Crushed Rock Gradations - ASTM Designations Percentage Passing by Weight					
Sieve Size	No. 1	No. 2	No. 4	No. 67	No. 10
3-1/2 inch	90 - 100	--	--	--	--
3 inch	--	100	--	--	--
2-1/2 inch	25 - 60	90 - 100	--	--	--
2 inch	--	35 - 70	100	--	--
1-1/2 inch	0 - 15	0 - 15	90 - 100	--	--
1 inch	--	--	20 - 55	100	--
3/4 inch	0 - 5	0 - 5	0 - 15	90 - 100	--
1/2 inch	--	--	--	--	--
3/8 inch	--	--	0 - 5	20 - 55	100
#4	--	--	--	0 - 10	85 - 100
#8	--	--	--	0 - 5	--
#16	--	--	--	--	--
#50	--	--	--	--	--
#100	--	--	--	--	10 - 30

✓ 2.04 DRAIN ROCK

- ✓ A. Material requirements:
 - ✓ 1. Durability: Percentage of wear not greater than 40 percent when tested in accordance with ASTM C131.
 - ✓ 2. Consists of hard, durable particles of stone or gravel; screened or crushed to specified size and gradation; and free from organic matter, lumps or balls of clay, or other deleterious matter.
 - ✓ 3. Crush or waste coarse material and waste fine material as required to meet gradation requirements.
 - ✓ 4. Conforms to size and grade within the following limits when tested in accordance with ASTM C117 and C136:

Sieve Size (Square Openings)	Percent By Weight Passing Sieve
2 inch	100
1-1/2 inch	95 - 100
3/4 inch	50 - 100
3/8 inch	15 - 55
Number 200	0 - 2

2.05 SELECT MATERIAL

- ✓ A. Select material, whether from the project site or import, shall be used for embankment, subgrades, trench backfill above the pipe zone, structural backfill, and other designated uses.
- ✓ B. Neither Owner nor Engineer represents that there is sufficient or suitable select material on the project site. Contractor is advised that some or all of the required select material will be imported.
- ✓ C. Procuring select material meeting this specification, regardless of the source, may require mixing of materials, crushing, sieving and other processing.
- ✓ D. Select material shall consist of mud-rock, coral, sand, or cinders. The material shall be free of organic matter and other deleterious substances and shall have a California Bearing Ratio value of at least 25 percent.
- ✓ E. The maximum size of any particle is its greatest dimension shall be 3 inches. The material shall be well graded from coarse to fine so as to form a dense compacted layer. The amount of material passing a 200 mesh sieve shall be less than 15 percent. Filler shall be added to the select material if required to obtain a well graded mixture.
 - 1. Select material shall be readily compactable to 95 percent of maximum dry density per ASTM D1557.
- ✓ F. Unless designated otherwise, Contractor may secure imported material from any source if approved by Engineer. No excavation will be permitted at locations where resulting scars will present an unsightly appearance.
- ✓ G. Corrosion resistance requirements for select material:
 - 1. Resistivity minimum (wet aggregates): 5,000 ohm-cm.
 - 2. Ph: 5.0 to 12.0.
 - 3. Chlorides maximum: 100 parts per million.
 - 4. Sulfates maximum: 200 parts per million.
- ✓ H. Contractor shall notify Engineer of the location of the proposed borrow sites in sufficient time to permit Contractor to make tests to determine the suitability of the material. Contractor shall employ an independent soils testing laboratory to determine the suitability of the borrow material, the results of which shall be submitted to Engineer. Contractor shall pay all costs of testing. In case the material is rejected, the Contractor shall designate another site. All borrow sites shall be inspected and approved by the Engineer.



2.06 SAND

- ✓ A. Clean, coarse, natural sand.
- ✓ B. Non-plastic when tested in accordance with ASTM D4318.
- ✓ C. Conforms to size and grade within the following limits when tested in accordance with ASTM C117 and C136:

Sieve Size (Square Openings)	Percent by Weight Passing Sieve
1/2 inch	100
Number 200	0 - 20

✓ 2.07 STABILIZATION MATERIAL

- ✓ A. Durability: Percentage of wear not greater than 40 percent when tested in accordance with ASTM C131.
- ✓ B. Consists of clean, hard, durable particles of crushed rock or gravel; screened or crushed to the specified sizes and gradations; and free of any detrimental quantity of soft, friable, thin, elongated, or laminated pieces, disintegrated material, organic matter, oil, alkali, or other deleterious substance.
- ✓ C. Shall be free of slaking or decomposition under the action of alternate wetting and drying.
- ✓ D. The portion of material retained on the 3/8-inch sieve shall contain at least 50 percent of particles having 3 or more fractured faces. Not over 5 percent shall be pieces that show no such faces resulting from crushing. Of that portion which passes the 3/8-inch sieve but is retained on the Number 4 sieve, not more than 10 percent shall be pieces that show no faces resulting from crushing.
- ✓ E. Conforms to size and grade when tested in accordance with ASTM C117 and ASTM C136.

Sieve Size (Square Openings)	Percent by Weight Passing Sieve
1 inch	100
3/4 inch	90 - 100
Number 4	0 - 10
Number 200	0 - 2

PART 3 EXECUTION (NOT USED)

END OF SECTION

Product Data and Test Report For Section 2.02 Aggregate
Base Course (1-1/2")

PUNA ROCK
CO., LTD.
PO Box 566 Keaau, Hawaii 96749
Tel (808) 966-7625 Fax (808) 969-9985

DATE: May 3, 2025

TO: Matthew Chun, Nan Inc.
RE: Material Submittal

This Material Submittal Report is summarized based of the Construction Engineering Labs Report stated as Exhibit 'A' (Attached)

Test Report

Project:	Hilo WWTP Rehabilitation and Replacement Project
	Phase 1
Project Material:	Aggregate Base Course 1-1/2" Maximum (Section 2.02)
Type of Material:	1-1/2" Base Course
Quarry Location:	Keaau Quarry
Refer To:	CEL-Exhibit 'A"

Sieve Size AASHTO T27	Cummulative Percent Passing	Specification Section 02050 - Aggregate Base Course-1-1/2" Max (Section 2.02)
2"	100.0%	100
1-1/2"	100.0%	90-100
3/4"	73%	50-90
#4	39%	25-50
#200	6.5%	3-9
L.A. Abrasion AASHTO T96	29.2%	50% Maximum
Sand Equivalent AASTO T176	79	35% Minimum
Liquid Limit AASHTO T90	CNBD	
Plasticity Index AASHTO T90	Non-Plastic	6 Maximum
Maximum Density AASHTO T180	142.4 pcf	
Optimum Moisture AASHTO T180	4.3%	

Respectfully Submitted,

Russell Kuwaye, President



**Construction
Engineering
Labs**

Exhibit 'A'

Puna Rock Co. LTD.
P.O. Box 566.
Keaau, HI 96749

Date: 12/31/2024
Report: 14524.004

TEST REPORT

Project: Aggregate Qualification	W.O. No. 14524
Client: Puna Rock	Received: 11/5/2024
Description of material: 1 1/2" Base Course	Tech: KG/MG
Source: Big Island Quarry	Sample #: 14524

SIEVE SIZE AASHTO T27	TEST RESULT % PASSING	SPECIFICATION Section 703.06
2" (50 mm)	100	100
1 1/2" (37.5 mm)	100	90 – 100
3/4" (19 mm)	73	50 – 90
#4 (4.75 mm)	39	25 – 50
#200 (.075 mm)	6.5	3 – 9

TEST	TEST RESULT	SPECIFICATION Section 703.06
L. A. Abrasion AASHTO T96	29.2	40 % Maximum
Sand Equivalent AASHTO T176	79	30 Minimum
Liquid Limit AASHTO T90	CNBD	
Plasticity Index AASHTO T90	Non-Plastic	6 Maximum
Maximum Density AASHTO T180	142.4pcf	
Optimum Moisture AASHTO T180	4.3%	

Respectfully,
CONSTRUCTION ENGINEERING LABS, INC

By: Ronald A. Pickering II
Its: President

Product Data and Test Report For Section 2.02 Aggregate
Base Course (3/4")

PUNA ROCK

CO., LTD.

PO Box 566 Keaau, Hawaii 96749
Tel (808) 966-7625 Fax (808) 969-9985

DATE: May 3, 2025

TO: Matthew Chun, Nan Inc.

RE: Material Submittal

This Material Submittal Report is summarized based of the Construction Engineering Labs Report stated as Exhibit 'B' (Attached)

Test Report

Project: Hilo WWTP Rehabilitation and Replacement Project Phase 1
Project Material: Aggregate Base Course 3/4" Maximum (Section 2.02)
Type of Material: 3/4" Base Course
Quarry Location: Keaau Quarry
Refer To: CEL-Exhibit 'B'

Sieve Size AASHTO T27	Cummulative Percent Passing	Specification Section 02050 - Aggregate Base Course-3/4" Max (Section 2.02)
1"	100.0%	100
3/4"	92%	90-100
#4	52%	35-55
#200	6.8%	3-9
L.A. Abrasion AASHTO T96	29.1%	50% Maximum
Sand Equivalent AASHTO T176	82	35% Minimum
Liquid Limit AASHTO T90	CNBD	
Plasticity Index AASHTO T90	Non-Plastic	6 Maximum
Maximum Density AASHTO T180	129.9	
Optimum Moisture AASHTO T180	9.4%	

Respectfully Submitted,



Russell Kuwaye, President



Puna Rock Co. LTD.
P.O. Box 566.
Keaau, HI 96749

Date: 12/31/2024
Report: 14524.003

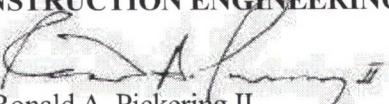
TEST REPORT

Project: Aggregate Qualification	W.O. No. 14524
Client: Puna Rock	Received: 11/05/2024
Description of material: 3/4" Base Course	Tech: KG/MG
Source: Big Island Quarry	Sample #: 14524

SIEVE SIZE AASHTO T27	TEST RESULT % PASSING	SPECIFICATION Section 703.06
1" (25 mm)	100	100
¾" (19 mm)	92	90 – 100
#4 (4.75 mm)	52	35 – 55
#200 (.075 mm)	6.8	3 – 9

TEST	TEST RESULT	SPECIFICATION Section 703.06
L. A. Abrasion AASHTO T96	29.1	40 % Maximum
Sand Equivalent AASHTO T176	82	30 Minimum
Liquid Limit AASHTO T90	CNBD	
Plasticity Index AASHTO T90	Non-Plastic	6 Maximum
Maximum Density AASHTO T180	129.9	
Optimum Moisture AASHTO T180	9.4	

Respectfully,
CONSTRUCTION ENGINEERING LABS, INC


By: Ronald A. Pickering II
Its: President

Product Data and Test Report For Section 2.03 Crushed
Rock (Gravel)

PUNA ROCK

CO., LTD.

PO Box 566 Keaau, Hawaii 96749
Tel (808) 966-7625 Fax (808) 969-9985

DATE: May 3, 2025

TO: Matthew Chun, Nan Inc.

RE: Material Submittal

This Material Submittal Report is summarized based of the Construction Engineering Labs Report stated as Exhibit 'C' (Attached)

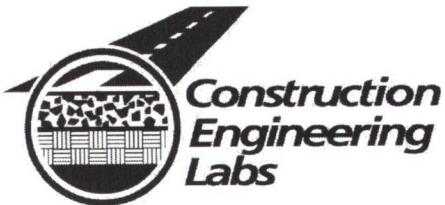
Test Report

Project:	Hilo WWTP Rehabilitation and Replacement Project
	Phase 1
Project Material:	Crushed Rock (Gravel) ASTM No.4 (Section 2.03)
Type of Material:	1-1/2" Drain Rock (Size 4)
Quarry Location:	Keaau Quarry
Refer To:	CEL-Exhibit 'C'

Sieve Size AASHTO T27	Cummulative Percent Passing	Specification Section 02050 - Crushed Rock (Gravel)-No.4 Max (Section 2.03)
2"	100%	100
1-1/2"	100%	90-100
1"	45%	20-55
3/4"	8%	0-15
3/8"	2.3%	0-5
#200		-
L.A. Abrasion AASHTO T96	35.3%	50% Maximum

Respectfully Submitted,

Russell Kuwaye, President



96 -1173 Waihona St. – Suite B-7 – Pearl City, HI
96782 Phone (808) 455-1522 Fax (808) 455-1384
Email- cel@hawaii.rr.com

Puna Rock Co., Ltd
PO Box 566
Keaau, HI 96749

Date: 10/7/2024
Report: 63491.5

TEST REPORT

Project: Aggregate Qualification	W.O. No. 63491
Client: Puna Rock Co.	Received: 9/27/24
Material: 1 ½" Drain Rock (Size 4)	Tech: KG/MG
Source: Keaau	Sample #: 63491.5
Depth: Stockpile	

SIEVE SIZE AASHTO T27	TEST RESULT % PASSING	SPECIFICATION Section 703.04-2
2" (50 mm)	100	100
1 ½" (38 mm)	100	75 - 100
1" (25 mm)	45	15 - 55
¾" (19 mm)	8	0 - 15
3/8" (10 mm)	2.3	0 - 5

TEST	TEST RESULT	SPECIFICATION Section 703.06
L. A. Abrasion AASHTO T96	35.3	40 % Maximum
Flat & Elongated HWY TC4	3.1	15% Maximum

Respectfully,
CONSTRUCTION ENGINEERING LABS, INC.

By: Ronald A. Pickering II
Its: President

Product Data and Test Report For Section 2.04 Drain Rock

PUNA ROCK

CO., LTD.

PO Box 566 Keaau, Hawaii 96749
Tel (808) 966-7625 Fax (808) 969-9985

DATE: May 3, 2025

TO: Matthew Chun, Nan Inc.

RE: Material Submittal

This Material Submittal Report is summarized based of the Construction Engineering Labs Report stated as Exhibit 'D' (Attached)

Test Report

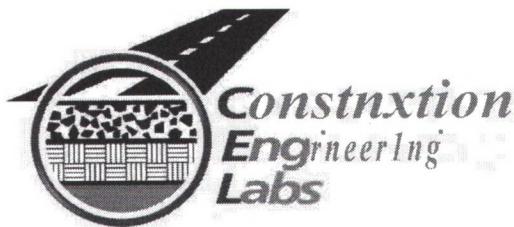
Project:	Hilo WWTP Rehabilitation and Replacement Project
	Phase 1
Project Material:	Drain Rock (Section 2.04)
Type of Material:	#3Fine (#67)
Quarry Location:	Keaau Quarry
Refer To:	CEL-Exhibit 'D'

Sieve Size ASTM C136	Cummulative Percent Passing	Specification Section 02050 - Drain Rock (Section 2.04)
1"	100%	100
3/4"	100%	50-100
1/2"	75%	-
3/8"	54%	15-55
#4	9%	-
#8	3%	-
#200	1.8%	0-2
L.A. Abrasion ASTM C131	29.2%	50% Maximum

Respectfully Submitted,



Russell Kuwaye, President



Puna Rock Co. LTD.
P.O. Box 566.
Keaau, HI 96749

Date: 12/31/2024
Report: 14524.001

TEST REPORT

Project: Aggregate Qualification	W.O. No. 14524
Client: Puna Rock	Received: 11/05/2024
Description of material: 3F #67	Tech:KG/MG
Source: Big Island Quarry	Sample#: 14524

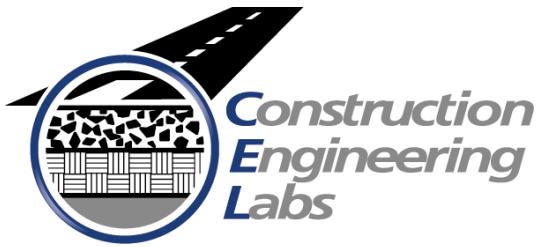
SIEVE SIZE AASHTOT27	TEST RESULT %PASSING	SPECIFICATION
1" (25 mm)	100	100
¾" (19mm)	100	90-100
½" (12.5 mm)	75	
3/8" (9.5 mm)	54	20-55
#4 (4.75 mm)	9	0 - 10
#8 (2.36mm)	3	0 - 5
#200 (.075 mm)	1.8	

TEST	TEST RESULT	SPECIFICATION
L.A. Abrasion AASHTO T96	29.2	
Flat & Elongated ASTM D4791	0.0	

Respectfully,
CONSTRUCTION E&E G LABS, INC

By: Ronald A. Pictlg IT / II
Its: President

Product Data and Report 2.05 Select Material



Puna Rock Co. LTD.
P.O. Box 566.
Keaau, HI 96749

Date: 05/07/2025
Report: 16355.001

TEST REPORT

Project: Hilo WWTP Rehabilitation & Replacement	W.O. No. 16355
Client: Puna Rock	Received: 4/30/2025
Description of material: Select Material	Tech: KG/SA
Source: Big Island Keaau Quarry	Sample #: 16355

SIEVE SIZE AASHTO T27	TEST RESULT % PASSING	SPECIFICATION Section 2.05
3" (75 mm)	100	100
2" (50 mm)	84	
1 1/2" (37.5 mm)	77	
1" (25 mm)	60	
3/4" (19 mm)	53	
1/2" (12.5 mm)	38	
3/8" (9.5 mm)	33	
#4 (4.75 mm)	24	
#8 (2.36 mm)	19	
#16 (1.18 mm)	14	
#30 (0.60 mm)	11	
#50 (0.30 mm)	8	
#100 (0.15 mm)	6	
#200 (.075 mm)	4.8	15 maximum

TEST	TEST RESULT	SPECIFICATION Section 2.05
Maximum Density ASTM D1557	142.4 pcf	
Optimum Moisture ASTM D1557	9.6%	
CBR ASTM D1883	106.6 @ 0.1"	25 minimum
Expansion ADTM D1883	0.0%	
Resistivity ASTM D4972	7700 ohms cm ³	5000 minimum
pH ASTM G57	6.7	5.0 – 12.0

Respectfully,
CONSTRUCTION ENGINEERING LABS, INC

By: Ronald A. Pickering II
Its: President

Product Data and Report 2.05 Select Material Chemistry
Requirements see sec. 2.05 G

ANALYTICAL REPORT

PREPARED FOR

Attn: Bob Thomas
Engineering and Training
94-1221 Ka Uka Blvd., #108
Waipahu, Hawaii 96797

Generated 5/27/2025 2:28:08 PM

JOB DESCRIPTION

Hilo WWTP Aggregate Corrosion

JOB NUMBER

580-150262-1

Eurofins Seattle

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northwest, LLC Project Manager.

Authorization



Generated
5/27/2025 2:28:08 PM

Authorized for release by
Victoria Fernalld, Project Management Assistant II
Victoria.Fernalld@et.eurofinsus.com
(253)922-2310

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Case Narrative

Client: Engineering and Training
Project: Hilo WWTP Aggregate Corrosion

Job ID: 580-150262-1

Job ID: 580-150262-1

Eurofins Seattle

Job Narrative 580-150262-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The sample was received on 5/6/2025 5:06 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 19.9°C.

Receipt Exceptions

The following sample was received at the Service Center outside the required temperature criteria: S-1 (580-150262-1). This does not meet regulatory requirements. The client was contacted regarding this issue.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Eurofins Seattle

Definitions/Glossary

Client: Engineering and Training

Job ID: 580-150262-1

Project/Site: Hilo WWTP Aggregate Corrosion

Qualifiers

General Chemistry

Qualifier	Qualifier Description
HF	Parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. Sample was analyzed outside of hold time.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☀	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client Sample Results

Client: Engineering and Training

Job ID: 580-150262-1

Project/Site: Hilo WWTP Aggregate Corrosion

Client Sample ID: S-1

Date Collected: 05/05/25 07:45

Lab Sample ID: 580-150262-1

Matrix: Solid

Date Received: 05/06/25 17:06

General Chemistry

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9045C)	7.6	HF			SU			05/21/25 16:02	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (SM22 2540G)	95.2		0.1	0.1	%			05/10/25 13:35	1
Percent Moisture (SM22 2540G)	4.8		0.1	0.1	%			05/10/25 13:35	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (SW846 9056A)	ND		19	5.2	mg/Kg			05/24/25 02:41	1
Sulfate (SW846 9056A)	ND		19	7.5	mg/Kg			05/24/25 02:41	1

QC Sample Results

Client: Engineering and Training

Job ID: 580-150262-1

Project/Site: Hilo WWTP Aggregate Corrosion

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 580-493412/80

Client Sample ID: Method Blank

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 493412

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0	0.54	mg/Kg			05/24/25 15:00	1
Sulfate	ND		2.0	0.78	mg/Kg			05/24/25 15:00	1

Lab Sample ID: LCS 580-493412/81

Client Sample ID: Lab Control Sample

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 493412

Analyte		Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Chloride		50.0	51.9		mg/Kg		104	90 - 110	
Sulfate		50.0	47.5		mg/Kg		95	90 - 110	

Lab Sample ID: LCSD 580-493412/82

Client Sample ID: Lab Control Sample Dup

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 493412

Analyte		Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Chloride		50.0	51.5		mg/Kg		103	90 - 110	1	15
Sulfate		50.0	47.6		mg/Kg		95	90 - 110	0	15

Lab Chronicle

Client: Engineering and Training
Project/Site: Hilo WWTP Aggregate Corrosion

Job ID: 580-150262-1

Client Sample ID: S-1

Date Collected: 05/05/25 07:45

Date Received: 05/06/25 17:06

Lab Sample ID: 580-150262-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	2540G		1	492227	B1M	EET SEA	05/10/25 13:35
Total/NA	Analysis	9045C		1	493126	ML	EET SEA	05/21/25 16:02
Soluble	Leach	DI Leach			493204	MLT	EET SEA	05/22/25 13:07
Soluble	Analysis	9056A		1	493412	MLT	EET SEA	05/24/25 02:41

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Engineering and Training

Job ID: 580-150262-1

Project/Site: Hilo WWTP Aggregate Corrosion

Laboratory: Eurofins Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4167	07-07-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
2540G		Solid	Percent Solids

1

2

3

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Sample Summary

Client: Engineering and Training

Project/Site: Hilo WWTP Aggregate Corrosion

Job ID: 580-150262-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-150262-1	S-1	Solid	05/05/25 07:45	05/06/25 17:06

Client Information

 Client Contact:
 Robert Thomas

 Company:
 Engineering & Training, Inc.

 Address:
 94-1221 Ka Uka Blvd 108

 City:
 Waipahu

 State, Zip:
 Hawaii 96797

 Phone:
 808-721-1469

 Email:
 thomas@engineeringandtraining.com

 Project Name:
 Hilo WWTP Aggregate Corrosion Resistance Testing

 Site:
 Puna Rock Quarry, Keau, Hawaii

SSOV#:

Sample ID:

Sample Date:

Sample Time:

 Sample Type:
 C=Comp,
 G=Grab

 Matrix:
 W=water,
 S=solid,
 O=waste/oil,
 T=tissue, A=Air

Preservation Code:

Field Filtered:

Sample (Yes or No):

 Lab PW:
 Fernalid, Victoria L

Carrier Tracking No.:

COC No.:

 Sample:
 Russell Kuwaye

 Phone:
 808-96-5246

State of Origin:

FedEx

Page:

 E-Mail:
 Victoria.Fernalid@et.eurofinsus.com

Job #:

Mura

Pres. Codes:

Due Date Requested:

TAT Requested (days):

14

 Compliance Project: Yes No

PO#:

MO#:

Project #:

SSOW#:

Total Number of containers:

Other:

Special Instructions/Note:

1

 Therm. ID: _____ Cor. _____ Inc. _____
 Cooler Desc: **Small Blue** SERVICE CENTRE
 Packing: **None** Item ID: **A1234** Cont. Q. 1 Unit: 4
 Cust. Seal: Yes No
 Blue Ice, Wet Dry: None

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

 Return To Client Disposal By Lab Archive For Months

Special Instructions/QC Requirements:

Method of Shipment: FEDEX

Date: _____

Time: _____

Received by: _____

Date/Time: _____

Company: _____

Date/Time: _____

Company: _____

Received by: _____

Date/Time: _____

Company: _____

Received by: _____

Date/Time: _____

Company: _____

Cooler Temperature(s) °C and Other Remarks:

Custody Seals intact: _____

Custody Seal No.: _____

 △ Yes No

<input checked="" type="checkbox"/> Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		<input type="checkbox"/> Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For Months	
Special Instructions/QC Requirements: Deliverable Requested I, II, III, IV, Other (Specify): Empty Kit Relinquished by: _____ Relinquished by: Russell Kuwaye Relinquished by: _____ Relinquished by: _____ Custody Seals intact: _____			
Date:	Time:	Received by:	Date/Time:
Date/Time:	Company:	Received by:	Date/Time:
Date/Time:	Company:	Received by:	Date/Time:
Date/Time:	Company:	Received by:	Date/Time:
Cooler Temperature(s) °C and Other Remarks: △ Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			

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HHS WWTP Aggregate
Corrosion Resistance
S-1 DATE: 5-5-25
TIME: 1:45 am

pH
CHLORIDES
SULFATES

Sampled By: Russell Kuykendall

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Cooler ID No.

TAL Work Order

COOLER RECEIPT FORM

Project _____

Cooler received on 5/16/25 and opened on 5/16/25 by Shawn Silva


(signature)

Temperature upon receipt:

Cooler: Corr 19.9 °C, Uncorr 18.4 °C Therm ID: H11R02

Temp. Blank: Corr _____ °C, Uncorr _____ °C Therm ID: _____

1. Were custody seals on outside of cooler and intact?
a. If yes, how many and where: one | side
 YES NO
2. Were custody papers taped to lid inside cooler?
 YES NO
3. Were custody papers properly filled out(ink, signed, etc)?
 YES NO
4. Did you sign custody papers in the appropriate place?
 YES NO
5. Did you attach shipper's packing slip to this form?
 YES NO
6. What kind of packing material was used? NONE
7. Was sufficient ice used?
 YES NO
8. Were all bottles sealed in separate plastic bags?
 YES NO
9. Did all bottles arrive in good condition (unbroken)?
 YES NO
10. Were all bottle labels complete (no., date, signed, pres, etc)?
 YES NO
11. Did all bottle labels and tags agree with custody papers?
 YES NO
12. Were correct bottles used for the test indicated?
 YES NO
13. If present, were vial vials checked for absence of airbubbles and noted if found?
 YES NO
14. Adequate volume of vial vials received per sample?
 YES NO
15. Was sufficient amount of sample sent in each bottle?
 YES NO
16. Were correct preservatives used?
 YES NO
17. Were extra labels added to pre-tared containers?
 YES NO
18. Corrective action taken, if necessary:
a. Name of person contacted: No
b. Date: _____

10/15/10

Phone (253) 922-2310

Phone (253) 922-2310

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Hills WWT Accokeek
Corrosion Resistance
S-1 DATE: 5-5-25
TIME: 7:45 am

pH
CHLORIDES
SULFATES

Sampled By: Russell Kuykendall

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Cooler ID No.

TAL Work Order

COOLER RECEIPT FORM

Project

Cooler received on 5/6/25 and opened on 5/6/25 by shawn silva


(signature)

Temperature upon receipt:

Cooler: Corr 19.9 °C, Uncorr 18.4 °C Therm ID: H11R02

Temp. Blank: Corr _____ °C, Uncorr _____ °C Therm ID: _____

1. Were custody seals on outside of cooler and intact?
a. If yes, how many and where: one side YES NO
2. Were custody papers taped to lid inside cooler? YES NO
3. Were custody papers properly filled out(ink, signed, etc)? YES NO
4. Did you sign custody papers in the appropriate place? YES NO
5. Did you attach shipper's packing slip to this form? YES NO
6. What kind of packing material was used? NONE YES NO
7. Was sufficient ice used? YES NO
8. Were all bottles sealed in separate plastic bags? YES NO
9. Did all bottles arrive in good condition (unbroken)? YES NO
10. Were all bottle labels complete (no., date, signed, pres, etc)? YES NO
11. Did all bottle labels and tags agree with custody papers? YES NO
12. Were correct bottles used for the test indicated? YES NO
13. If present, were vials checked for absence of airbubbles and noted if found? YES NO
14. Adequate volume of vials received per sample? YES NO
15. Was sufficient amount of sample sent in each bottle? YES NO
16. Were correct preservatives used? YES NO
17. Were extra labels added to pre-tared containers? YES NO
18. Corrective action taken, if necessary:
a. Name of person contacted: No
b. Date: _____

10/15/10

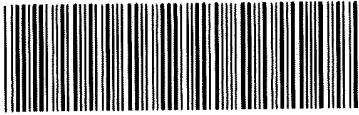
Eurofins Seattle

5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310

Chain of Custody Record

eurofins | Environment Testing

Fedor

Client Information		Sampler: Russell Kuwaye		Lab PM: Fernalld, Victoria L		Carrier Tracking No(s): 881001122606		COC No:				
Client Contact: Robert Thomas		Phone: 808-896-5246		E-Mail: Victoria.Fernalld@et.eurofinsus.com		State of Origin: Hawaii		Page:				
Company: Engineering & Training, Inc.		PWSID:		Analysis Requested						Job #: Puna		
Address: 94-1221 Ka Uka Blvd 108		Due Date Requested:								Preservation Codes:		
City: Waipahu		TAT Requested (days): 14										
State, Zip: Hawaii 96797		Compliance Project: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No										
Phone: 808-721-1469		PO #:										
Email: rthomas@engineeringandtraining.com		WO #:										
Project Name: Hilo WWTP Aggregate Corrosion Resistance Testing		Project #:										
Site: Puna Rock Quarry, Keaua, Hawaii		SSOW#:										
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform ICP/MS/ICP-MS (Yes or No)	pH	Chlorides (<100 ppm)	Sulfates (>200 ppm)	Total Number of containers	Special Instructions/Note:
S-1		5-5-25	7:45am	C	S	X	X	X			1	
  <p>580-150262 COC 580-150262 Chain of Custody</p>												
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months						
Deliverable Requested: I, II, III, IV, Other (specify)						Special Instructions/QC Requirements:						
Empty Kit Relinquished by:			Date:		Time:		Method of Shipment: FEDEX					
Relinquished by: Russell Kuwaye			Date/Time: 5/5/25 1404		Company: EETN		Received by: 		Date/Time: 5/6/25 1404	Company: EETN		
Relinquished by: 			Date/Time: 5/7/25 1330		Company: EETN		Received by: 		Date/Time: 5/8/25 945	Company: EETN		
Relinquished by:			Date/Time:		Company:		Received by:		Date/Time:	Company:		
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 12 29.1 2.9								

Cooler ID No.

TAL Work Order

COOLER RECEIPT FORM

Project _____

Cooler received on 5/14/12 and opened on 5/14/12 by Snowdon Silva

Temperature upon receipt:

Cooler: Corr 19.9 °C, Uncorr 18.4 °C
Temp. Blank: Corr °C, Uncorr °C Therm ID: H11R02

1. Were custody seals on outside of cooler and intact?
a. If yes, how many and where: One | Slot
b. Were signature and date correct?

2. Were custody papers taped to lid inside cooler?

3. Were custody papers properly filled out (ink, signed, etc.)?

4. Did you sign custody papers in the appropriate place?

5. Did you attach shipper's packing slip to this form?

6. What kind of packing material was used? None

7. Was sufficient ice used?

8. Were all bottles sealed in separate plastic bags?

9. Did all bottles arrive in good condition (unbroken)?

10. Were all bottle labels complete (no, date, signed, pres, etc.)?

11. Did all bottle labels and tags agree with custody papers?

12. Were correct bottles used for the test indicated?

13. If present, were vials checked for absence of air bubbles and noted if found?

14. Adequate volume of vials received per sample?

15. Was sufficient amount of sample sent in each bottle?

16. Were correct preservatives used?

17. Were extra labels added to pre-tared containers?

18. Corrective action taken, if necessary:
a. Name of person contacted: NA
b. Date: _____

10/15/10

Login Sample Receipt Checklist

Client: Engineering and Training

Job Number: 580-150262-1

Login Number: 150262

List Number: 1

Creator: Silva, Shawn 1

List Source: Eurofins Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	Cooler temperature outside required temperature criteria.
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Product Data and Report 2.06 Sand

PUNA ROCK

CO., LTD.

PO Box 566 Keaau, Hawaii 96749
Tel (808) 966-7625 Fax (808) 969-9985

DATE: May 3, 2025

TO: Matthew Chun, Nan Inc.

RE: Material Submittal

This Material Submittal Report is summarized based of the Construction Engineering Labs Report stated as Exhibit 'E' (Attached)

Test Report

Project:	Hilo WWTP Rehabilitation and Replacement Project Phase 1
Project Material:	Sand (Section 2.06)
Type of Material:	#4 Sand
Quarry Location:	Keaau Quarry
Refer To:	CEL-Exhibit 'F'

Sieve Size ASTM C136	Cummulative Percent Passing	Specification Section 02050 - Sand (Section 2.06)
1/2"	100%	100
3/8"	100%	
#4	99%	
#8	71%	
#16	47%	
#30	32%	
#50	22%	
#100	15%	
#200	11%	0-20
Sand Equivalent AASHTO T176	82	

Respectfully Submitted,



Russell Kuwaye, President



Puna Rock Co. LTD.
P.O. Box 566.
Keaau, HI 96749

Date: 12/31/2024
Report: 14524.002

TEST REPORT

Project: Aggregate Qualification	W.O. No. 14524
Client: Puna Rock	Received: 11/5/2024
Description of material: #4 Sand	Tech: KG/MG
Source: Big Island Quarry	Sample #: 14524

SIEVE SIZE AASHTO T27	TEST RESULT % PASSING	SPECIFICATION
3/8" (9.5 mm)	100	100
#4 (4.75 mm)	99	90 – 100
#8 (2.36 mm)	71	50 – 85
#16 (1.18 mm)	47	
#30 (0.60 mm)	32	32 – 60
#50 (0.30 mm)	22	15 – 30
#100 (0.15 mm)	15	5 – 20
#200 (.075 mm)	11	

TEST	TEST RESULT
Sand Equivalent AASHTO T176	82

Respectfully,
CONSTRUCTION ENGINEERING LABS, INC

By: Ronald A. Pickering II
Its: President

Product Data and Test Report For Section 2.07 Stabilization
Material

PUNA ROCK CO., LTD.

PO Box 566 Keaau, Hawaii 96749
Tel (808) 966-7625 Fax (808) 969-9985

DATE: May 3, 2025

TO: Matthew Chun, Nan Inc.

RE: Material Submittal

This Material Submittal Report is summarized based of the Construction Engineering Labs Report stated as Exhibit 'F' (Attached)

Test Report

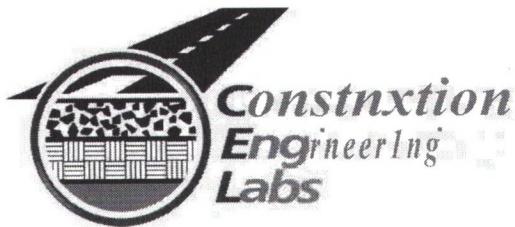
Project: Hilo WWTP Rehabilitation and Replacement Project
Phase 1
Project Material: Stabilization Material (Section 2.07)
Type of Material: #3Fine (#67)
Quarry Location: Keaau Quarry
Refer To: CEL-Exhibit 'G'

Sieve Size ASTM C136	Cummulative Percent Passing	Specification Section 02050 - Stabilization Material (Section 2.07)
1"	100%	100
3/4"	100%	90-100
1/2"	75%	-
3/8"	54%	-
#4	9%	0-10
#8	3%	-
#200	1.8%	0-2
L.A. Abrasion ASTM C131	29.2%	40% Maximum

Respectfully Submitted,



Russell Kuwaye, President



Puna Rock Co. LTD.
P.O. Box 566.
Keau, HI 96749

Date: 12/31/2024
Report: 14524.001

TEST REPORT

Project: Aggregate Qualification	W.O. No. 14524
Client: Puna Rock	Received: 11/05/2024
Description of material: 3F #67	Tech:KG/MG
Source: Big Island Quarry	Sample#: 14524

SIEVE SIZE AASHTOT27	TEST RESULT %PASSING	SPECIFICATION
1" (25 mm)	100	100
¾" (19mm)	100	90-100
½" (12.5 mm)	75	
3/8" (9.5 mm)	54	20-55
#4 (4.75 mm)	9	0 - 10
#8 (2.36mm)	3	0 - 5
#200 (.075 mm)	1.8	

TEST	TEST RESULT	SPECIFICATION
L.A. Abrasion AASHTO T96	29.2	
Flat & Elongated ASTM D4791	0.0	

Respectfully,
CONSTRUCTION E&E G LABS, INC

By: Ronald A. Pictig IT / II
Its: President