State of Louisiana
Department of Transportation and Development
Materials and Testing Section Qualification Procedure
for

APPROVED MATERIALS LIST AGGREGATE SOURCES

MATERIAL SPECIFICATION REFERENCE:

DOTD Standard Specifications, DOTD Supplemental Specifications, DOTD Special Provisions, and DOTD Maintenance Specifications.

***Note Specification References are subject to change.**

APPROVED MATERIAL EVALUATION SUBMITTAL:

The manufacturer shall submit a completed Approved Materials Evaluation Submittal to the DOTD Materials and Testing Section Coordinator listed below.

PRELIMINARY REQUIREMENTS:

The complete submittal must include:

- Complete Approved Materials Evaluation Form
  - A completed "APPLICATION FORM FOR AGGREGATE SOURCE APPROVAL" shall be submitted to the DOTD Materials and Testing Section Coordinator with all aggregate samples intended for the Approved Materials List. The information provided shall show a complete description of the aggregate and its intended use, as well as the source location and the distributor, if applicable. Source location is intended to identify the point of origin of the material to be source approved such as the quarry, pit, or slag-producing mill. In addition to the above form, a detailed map showing the geographical location of the aggregate quarry or pit, as well as limits of particular deposits within the quarry or pit, shall be provided to the Coordinator.
- Letter requesting evaluation of the material
- Product Data Sheets
  - For synthetic aggregates, include a description of the process producing the aggregate, indicating any special precautions regarding handling and testing the aggregate.
- Safety data sheets (S.D.S.)
- Any ASR and/or ACR Test Results History (most recent 3 years).
- Geological formation column certified by a Geologist.
- Quarry/Plant Quality Control Plan.

NOTE: Evaluation will not begin until all required items listed above are received by the Materials Laboratory.

Certification and/or Test Reports

Include any test results obtained by private and/or other state agencies. The submittal should also include a detailed description of the quality control program for the source showing sampling and testing frequencies, test procedures etc. that is utilized at the quarry. In the case of any aggregate that may be environmentally questionable, clearance for the intended use must be obtained through the Department of Environmental Quality prior to source approval. For source approval, limestone aggregate sources intended for use in Portland Cement Concrete (PCC) need to provide results of evaluation for alkali carbonate reactivity utilizing

AASHTO R80-17. Failure to do so will automatically prevent the aggregate from being approved for use in PCC.

PRELIMINARY REQUIREMENTS CONTINUED:

Sample (to be furnished at no cost to the Department)

Samples of aggregate for source approval shall be taken from the finished product in accordance with AASHTO Designation T_2. For coarse aggregate, a sample weighing a minimum 200 lb. will be required for the laboratory evaluation. For fine aggregate a 100 lb. sample will be required. Samples should be graded to approximate the gradation specification for the intended use. Samples of coarse aggregate should have sufficient 12.5 mm (1/2") and 9.5 mm (3/8") material in the sample to ensure enough material to perform the sulfate soundness and abrasion tests. Generally, the Grade A requirements of subsection 1003.08 of the DOTD Standard Specifications will provide sufficient coarse material to fulfill this requirement.

Generally, in-state sources will be sampled by DOTD personnel and out of state sources are sampled by a representative of the source. Samples from out-of-state sources shall be taken from each identifiable location at the source such as each ledge in a quarry that is intended to be approved. Samples submitted for approval must be delivered to the Materials and Testing Section, to the attention of the Coordinator at the address shown below.

TEST REQUIREMENTS:

Laboratory Testing

Laboratory testing of samples will be conducted in accordance with Section 1003 of the DOTD Standard Specifications. (See attached Test Methods below for applicable source type)

Field Evaluation

At the option of the Materials Engineer Administrator, an in-place evaluation of the material for the intended application (i.e. base course, surface course, etc.) may be required upon completion of the laboratory testing. The material will be evaluated for specification compliance or to establish design criteria for its intended use. In addition, sources may require a geologic evaluation by DOTD personnel.

Evaluation Time

Laboratory Testing - approximately ten weeks

Field Evaluation - approximately one year

GENERAL:

All aggregates must be environmentally acceptable for its intended use. All gravels and stones shall conform to soundness and abrasion requirements of Subsection 1003.01 in order to be listed. Other sources of aggregate that have been approved for specific uses through field and/or laboratory evaluations that do not lend themselves for listing due to either its intended use or variability of the source are found in the “Approved

GENERAL CONTINUED:

Producer/Supplier" Category. Of these materials, source approval for Recycled Portland Cement Concrete shall be in accordance with DOTD Designation S 801 "Source Approval, Sampling and Testing Program for Recycled Portland Cement Concrete". Laboratory testing will begin after compliance with the preliminary requirements. Only operational quarries or pits will be evaluated for source approval. Testing/evaluation of undeveloped locations will not be considered.

After completion of testing, the source and the submitter will be notified of the results, and whether a field evaluation will be required. Upon completion of the total evaluation, the source and the submitter will be advised whether or not the source will be added to the Approved Materials List.

Once a source has been approved, it shall be the source's responsibility to notify the Coordinator in writing of any change of ownership, name, address, telephone number, operations, material properties, etc. A verification sample will be required in case of change in ownership, operations, or material properties. Re-location of operations will require a re-evaluation of the source.

AGGREGATE RE-CERTIFICATION:

All aggregate sources (Quarries & Pits) will be required to submit the following on a biennial basis commencing two years from the date of initial source approval or last recertification.

- Updated Preliminary Source Approval application
- Material (see Preliminary Requirements for sample size) for testing to verify material characteristics have not changed.
- ASR and/or ACR Test Results History (most recent 3 years).
- RPCC aggregate sources (stockpiles) are required to be certified annually.

PROJECT SAMPLING REQUIREMENTS:

The inclusion of any system/materials/product on the AML is not blanket approval for its use. All systems/material/product, regardless of prior approval, shall be sampled in accordance to the Materials Sampling Manual.

DISQUALIFICATION:

Any material may be removed from the AML at any time. Causes for removal from the AML may include but are not limited to the following:

- Significant change in physical and chemical properties of aggregates.
- Continued failure to meet specification standards.
- Poor construction history.
- Failure to notify the Coordinator of plant re-locations or other significant changes in plant operations.
- Failure to respond to questionnaires regarding the status of approved sources.
- Failure to respond to request for recertification with an updated Application Form for Aggregate Source Approval.
- Failure to supply current contact information for the material representative in accordance with this procedure.

REQUALIFICATION:

Any material, which has been disqualified and removed from the AML, will be considered for re-evaluation only after submission of a formal request along with acceptable evidence that the problems causing the disqualification and/or removal have been resolved. Any source disqualified due to non-response for recertification shall undergo the source approval process to be placed back on the AML.

DOTD MATERIALS AND TESTING SECTION COORDINATOR,

Brandon M. Johnson, P.E.
Soils & Aggregate Test Engineer
DOTD Materials and Testing Section
5080 Florida Blvd.
Baton Rouge, La. 70806-4123
(225) 248-4145
Brandon.Johnson@la.gov

Approved 08/28/2023

MR. KRIS WASCOM
DOTD MATERIALS ENGINEER ADMINISTRATOR

TEST METHODS

The following test methods, will be utilized in the laboratory evaluations of the Aggregate materials submitted for Aggregate Source Approval. Each material type tested will have its own assigned test methods specific to the material being tested. The Standard Specification section and sub section numbers are listed for easy reference. Test Methods may be from AASHTO, ASTM, or DOTD, etc.

These are to be found in the latest edition of the Louisiana Standard Specifications for Roads and Bridges. The Standards may be purchased from the LADOTD General Files Unit for fee if a copy if desired. Also the Louisiana Standard Specifications for Roads and Bridges and the DOTD Test Methods Volume I and II Can be found on our website at www.dotd.louisiana.gov.

TO ACCESS THE FOLLOWING GO TO OUR WEBSITE LISTED ABOVE:

Specifications are in: Home->Inside DOTD->Divisions->Engineering->Standard specifications

To view the Standard Specifications for Aggregate, go to “Publications/Manuals”, then to “Standard Specifications”, then to “Standard Specifications for Roads and Bridges”, then to “Part X Materials”, and then scroll to “1003 Aggregates”.

To view the Materials Testing Procedures, go to “Publications/Manuals”, then to “Materials Testing Procedures” then to Testing Procedures”, and then to “Volume I” for Aggregates or “Volume II” for Soils and Miscellaneous.

Procedure for evaluation of Sand, Gravel and Stone sources for use in PCC

New aggregate sources (Stone, Gravel or Sand) will be required to follow 1003.01.4 procedure. This procedure is shown in Appendix A/B/C. After a failing ASTM C 1293 and/or C1105 result, a producer may resubmit the source for PCC code approval after a 6 month waiting period.

Crushed Stone Aggregate Source Approval:

Stone shall show an abrasion loss of not more than 40 percent when tested in accordance with AASHTO T 96 Los Angeles Abrasion Test. Stone shall show a soundness loss of not more than 15 percent when subjected to 5 cycles in accordance with AASHTO T 104 Soundness of Aggregate by use of Magnesium Sulfate. A stone should show a Micro Deval loss of not more than 18% to be considered for asphalt concrete use.

For source approval, stone aggregates for use in Portland Cement Concrete will be evaluated for alkali silica reactivity utilizing guidance from AASHTO R80-17 (See Appendix A). Limestone aggregates for use in Portland Cement Concrete will be evaluated for alkali carbonate reactivity and silica reactivity utilizing guidance from AASHTO R80-17 (See Appendix B).

Aggregate considered ACR reactive will not be allowed in concrete mixtures as per 2016 LADOTD Standard Specifications.

In addition to the test methods above and the ones given in each subsection the following methods shall be used in testing Stone aggregates.

Property	Test Method	Standard Spec.#
Specific Gravity & Absorption of Coarse Aggregate	AASHTO T 85	1003.01.1
Los Angeles Abrasion , % Loss	AASHTO T 96	1003.01.1
Soundness of Aggregate by use of Magnesium Sulfate, % Loss	AASHTO T 104	1003.01.1
Polish Value	AASHTO T 278	1003.01.1
	AASHTO T 279	1003.01.1
Micro Deval	AASHTO T 327	1003.01.1
Amount of Material Finer than the No. 200 Sieve (75 µm)	DOTD TR 112	1003.01.1
Sieve Analysis (gradation)	DOTD TR 113	1003.01.1
Deleterious Materials	DOTD TR 119	1003.01.1
Chemical Analysis	ASTM C 114	Info Only
Potential Alkali – Silica Reactivity	AASHTO R80-17	1003.01.4.1
Potential Carbonate Reactivity	AASHTO R80-17	1003.01.4.2

Chert Gravel Aggregate Source Approval:

Gravel shall show an abrasion loss of not more than 40 percent when tested in accordance with AASHTO T 96 Los Angeles Abrasion Test. Gravel shall show a soundness loss of not more than 15 percent when subjected to 5 cycles in accordance with AASHTO T 104 Soundness of Aggregate by use of Magnesium Sulfate. For source approval, aggregates for use in Portland Cement Concrete will be evaluated for alkali silica reactivity (See Appendix C).

Aggregate potentially ASR reactive will need to be mitigated as per 2016 LADOTD Standard Specifications.

In addition to the test methods above and the ones given in each subsection the following methods shall be used in testing Gravel aggregates.

Property	**Test Method**	**Standard Spec. #**
Specific Gravity & Absorption of Coarse Aggregate	AASHTO T 85	1003.01.1
Los Angeles Abrasion, % Loss	AASHTO T 96	1003.01.1
Soundness of Aggregate by use of Magnesium Sulfate, % Loss	AASHTO T 104	1003.01.1
Amount of Material Finer than the No. 200 Sieve (75 µm)	DOTD TR 112	1003.01.1
Sieve Analysis (gradation)	DOTD TR 113	1003.01.1
Deleterious Materials	DOTD TR 119	1003.01.1
Chemical Analysis	ASTM C 114	Info. Only.
Potential Alkali – Silica Reactivity	ASTM C1260	1003.01.4.1
	AASHTO R80-17	1003.01.4.1

Silica Sand Aggregate Source Approval:

Sand shall be a natural sand and consisting of clean, hard, durable, siliceous grains.

In addition to the test methods above and the ones given in each subsection the following methods shall be used in testing sand aggregates. For source approval, aggregates for use in Portland Cement Concrete will be evaluated for alkali silica reactivity (See Appendix C).

Property	Test Method	Standard Spec. #
Organic Impurities in Fine Aggregate	AASHTO T 21	1003.01.1
Specific Gravity & Absorption of Fine Aggregate	AASHTO T 84	1003.01.1
Amount of Material Finer than the No. 200 Sieve (75 µm)	DOTD TR 112	1003.01.1
Sieve Analysis (gradation)	DOTD TR 113	1003.01.1
Deleterious Materials	DOTD TR 119	1003.01.1
Liquid Limit and Plasticity Index	DOTD TR 428	1003.01.1
Chemical Analysis	ASTM C 114	Info. Only
Potential Alkali – Silica Reactivity	ASTM C 1260	1003.01.4.1
	AASHTO R80-17	1003.01.4.1

Lightweight Aggregate Source Approval:

Lightweight aggregate shall be expanded clay, shale, slate or any other suitably acceptable lightweight type aggregate. Lightweight aggregate shall show an abrasion loss of not more than 40 percent when tested in accordance with DOTD TR111. The unit weight (mass) (AASHTO T 19) of lightweight coarse aggregate shall not exceed 55 pounds per cubic foot (880 kg/cu m), dry loose measurement. If the unit weight (mass) of any shipment of lightweight coarse aggregate differs by more than 10 percent from that of the sample submitted for acceptance tests, the shipment may be rejected.

In addition to the test methods above and the ones given in each subsection the following methods shall be used in testing lightweight aggregates.

Property	Test Method	Standard Spec. #
Specific Gravity & Absorption of Coarse Aggregate	AASHTO T 85	1003.01.1
	DOTD TR 123	1003.01.1
Soundness of Aggregate by use of Magnesium Sulfate, % Loss	AASHTO T 104	1003.01.1
Polish Value	AASHTO T 278	1003.01.1
	AASHTO T 279	1003.01.1
Abrasion of Light Weight Coarse Aggregate		1003.01.1
Amount of Material Finer than the No. 200 Sieve (75 µm)	DOTD TR 112	1003.01.1
Sieve Analysis (gradation)	DOTD TR 113	1003.01.1
Deleterious Materials	DOTD TR 119	1003.01.1
Chemical Analysis	ASTM C 114	
	AASHTO M 195	

The following test methods from the special provisions will be required for approval in Mechanically Stabilized Earth Walls

Organic content of Soils	DOTD TR 413
Resistivity Values of Soils and Water	DOTD TR 429
Determination of Ph Value of Water or Soil	DOTD TR 430
Determining Chloride content and Organic Additive for PCC	DOTD TR 643

Also in addition the following test methods from AASHTO M 195 Standard Specification for Lightweight Aggregates for Structural Concrete may be used in testing lightweight aggregates.

Organic Impurities in Fine Aggregates for Concrete	AASHTO T 21
Clay Lumps and Friable Particles	AASHTO T 112
Loss on Ignition	ASTM C 114

Recycled PCC Aggregate Source Approval:

RPCC shall show an abrasion loss of not more than 40 percent when tested in accordance with AASHTO T 96 Los Angeles Abrasion Test.

In addition to the test methods above and the ones given in each subsection the following methods shall be used in testing RPCC aggregates.

Property	Test Method	Standard Spec. #
Los Angeles Abrasion , % Loss	AASHTO T 96	1003.01.1
Amount of Material Finer than the No. 200 Sieve (75 µm)	DOTD TR 112	1003.01.1
Sieve Analysis (gradation)	DOTD TR 113	1003.01.1
Deleterious Materials	DOTD TR 119	1003.01.1

Crushed Slag Aggregate Source Approval:

Slag shall show an abrasion loss of not more than 40 percent when tested in accordance with AASHTO T 96 Los Angeles Abrasion Test. Slag shall show a soundness loss of not more than 15 percent when subjected to 5 cycles in accordance with AASHTO T 104 Soundness of Aggregate by use of Magnesium Sulfate.

In addition to the test methods above and the ones given in each subsection the following methods shall be used in testing slag aggregates.

Property	Test Method	Standard Spec. #
Specific Gravity & Absorption of Coarse Aggregate	AASHTO T 85	1003.01.1
Los Angeles Abrasion , % Loss	AASHTO T 96	1003.01.1
Soundness of Aggregate by use of Magnesium Sulfate, % Loss	AASHTO T 104	1003.01.1
Polish Value	AASHTO T 278	1003.01.1
	AASHTO T 279	1003.01.1
Amount of Material Finer than the No. 200 Sieve (75 µm)	DOTD TR 112	1003.01.1
Sieve Analysis (gradation)	DOTD TR 113	1003.01.1
Deleterious Materials	DOTD TR 119	1003.01.1
Chemical Analysis	ASTM C 114	Info. Only
Potential Alkali – Silica Reactivity	ASTM C 1260	1003.01.4.1

STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
MATERIALS AND TESTING SECTION

PRELIMINARY INFORMATION FORM
FOR
AGGREGATE SOURCE APPROVAL

(Please print or type)
Name of Company _____

Address: _____ Phone No.: (_____) _____

City: _____ FAX No. : (_____) _____

State: _____ Zip Code: _____ WEBSITE: _____

Type of Aggregate _____

Date Submitted _____ □ New Application □ Biennial Recertification

Trade Name of Aggregate (if applicable): _____

Source: The following information applies to the point of origin of the aggregate such as quarry, pit, manufacturing plant, or site of reclamation.

Name of Source: _____

Plant Manager: _____

Phone Number (___) _____ FAX No: (___) _____

E-Mail Address _____

Mailing Address:

_____
P. O. Box or Street City State Zip

Source Address (if different from above):

_____

_____

GPS Coordinate: Latitude _____ Longitude _____

Details as to the extent and location of material within source (Quarry face, ledge elevations and

thickness, etc.) and Overburden Material _____

Ident No._____ Rev. 12/2014
(For DOTD use only)

_____

_____

MATERIAL COMPOSITION

Description of Composition of Material _____

Is material naturally occurring? (Y/N) _____ Is material a manufactured aggregate? (Y/N) _____

Is material a by-product or waste product of a chemical or manufacturing process? (Y/N) _____

Description of process attached? (Y/N) ___ Copy of Quality Control Program Attached? (Y/N) _____

Alternate or comparable to what existing materials or product:

Meets requirements of following specifications:

AASHTO___ ASTM___ FHWA ____ OTHER

_____

Availability: Seasonal (Y/N)_____ Delivery at Site _____

_____

Are Quantities Limited: (Y/N) _____ Volume readily available (Estimate)_____

New on Market: (Y/N) ____ Date Introduced _____ Estimated Cost Per Unit: _____

Will Special Handling be required to use or Test Material: (Y/N): _____

If Yes, please explain: _____

Has this material been previously evaluated by the LDOTD or LTRC? (Y/N): ___ When: _____

(If yes, please attach test report.) Previous Source Code (if applicable): _____

What other government agencies have used or tested this material?

Agency _____
Contact Person _____
Address _____
City, State, ZIP _____
Phone Number (_____) _____
Fax Number (_____) _____

Agency _____
Contact Person _____
Address _____
City, State, ZIP _____
Phone Number (_____) _____
Fax Number (_____) _____

General Notes:

1. All materials required for evaluation shall be furnished by the Source/Distributor at no cost to the Louisiana Department of Transportation and Development.
2. A separate form will be required for each aggregate source and type of aggregate submitted for evaluation.
3. Incomplete forms and/or erroneous information furnished as part of this form will result in the material being rejected for testing.
4. The Department reserves the right to return all unused samples to the source.
5. *For source approval, limestone aggregate sources intended for use in Portland Cement Concrete (PCC) need to provide results of evaluation for alkali carbonate reactivity utilizing AASHTO PP65-11. Failure to do so will automatically prevent the aggregate from being approved for used in PCC.*

Data resulting from the evaluation of the submitted aggregate is public information and will not be considered privileged. The source is hereby notified that the Louisiana Department of Transportation and Development reserves the right to release or distribute any of the information included in or attached to this form and the test results obtained as part of our laboratory testing and field evaluation.

The Louisiana Department of Transportation and Development will not consider any new product for testing until this form is completed, signed (below) by an authorized official of the Source, and returned to the Coordinator at the address shown below: Distributor information is for internal use only.

Louisiana Department of Transportation and Development
Materials and Testing Section
5080 Florida Boulevard
Baton Rouge, Louisiana 70806-4123

The undersigned hereby certifies that all information submitted with this application is accurate and correct to the best of their knowledge.

SOURCE REPRESENTATIVE (must be signed & dated for acceptance of evaluation)

Name: _____ Signed: _____
(Please print or type)

Title: _____ Date: _____

Mailing Address: _____
P. O. Box or Street City State Zip

E-Mail Address: _____

Phone No.: (___) _____ FAX No: (___) _____

Distributor Information (if different than aggregate source):

The following information applies to the company that markets the aggregate.
Company Contact Person: _____ Title: _____
Company Name: _____
Phone No. ( ) _____FAX ( )_____
E-Mail Address: _____
Address: _____
P. O. Box or Street City State Zip

Background Description of Company Offering this proposal:
_____
Intended Uses of Aggregate:
Primary: _____
Alternate(s): _____

DISTRIBUTOR

Name: _____
(Please print or type)

Title: _____

Signed: _____

Date: _____

Appendix A

Figure 1 - PCC Approval Process for Other Aggregate (Stone) Sources

Figure 2 - ASTM C1260

Figure 3 - ASTM C1293

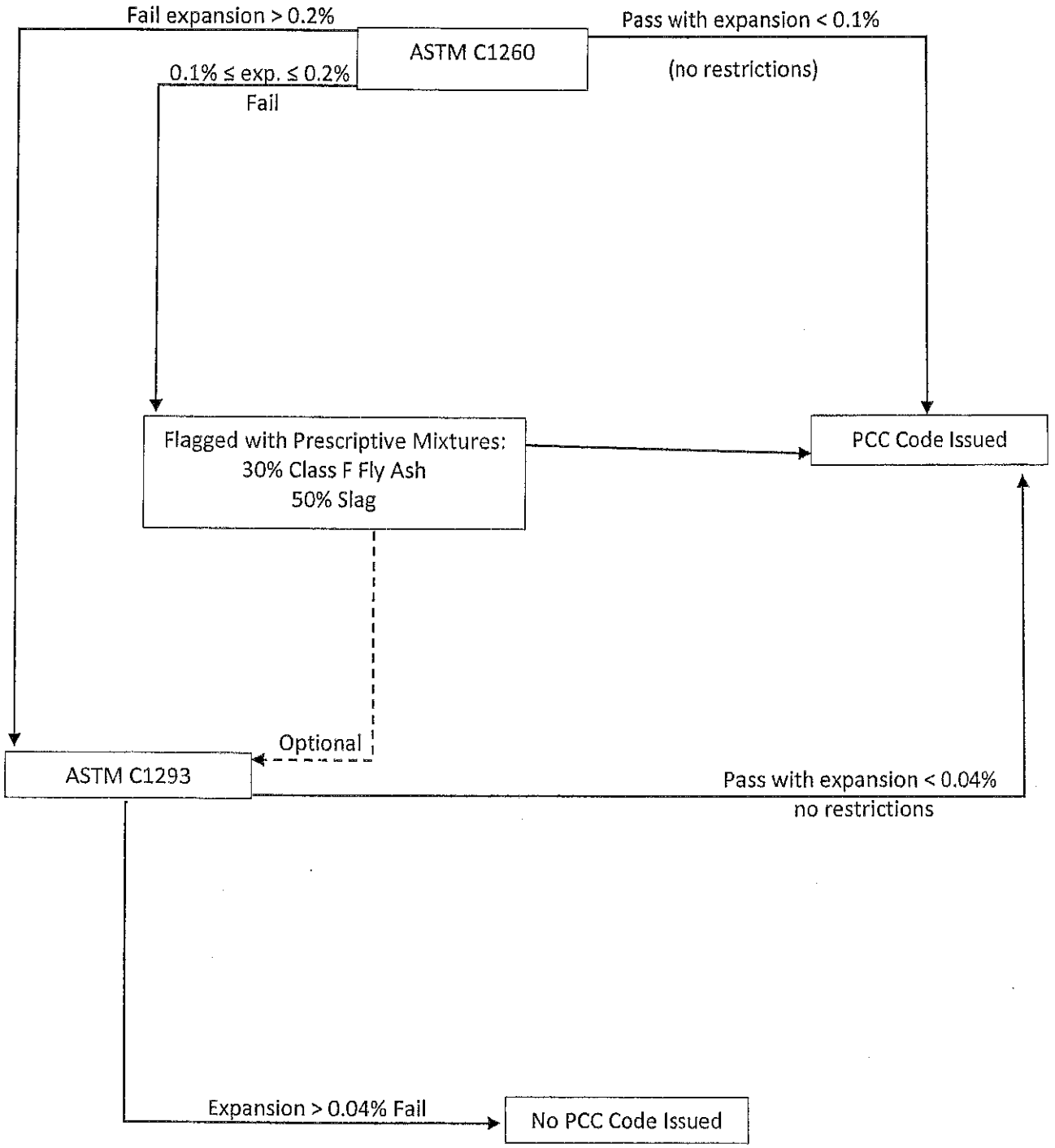
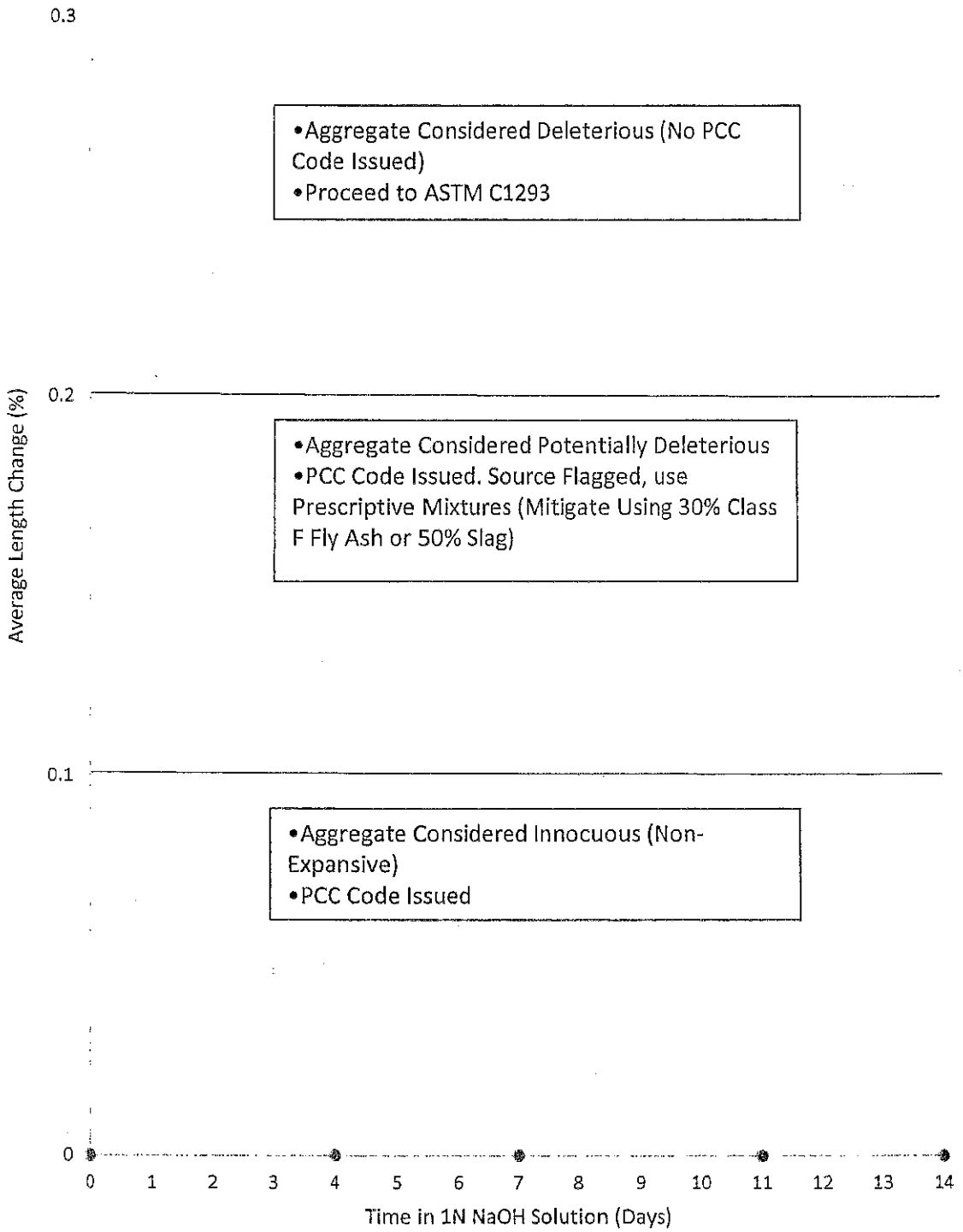


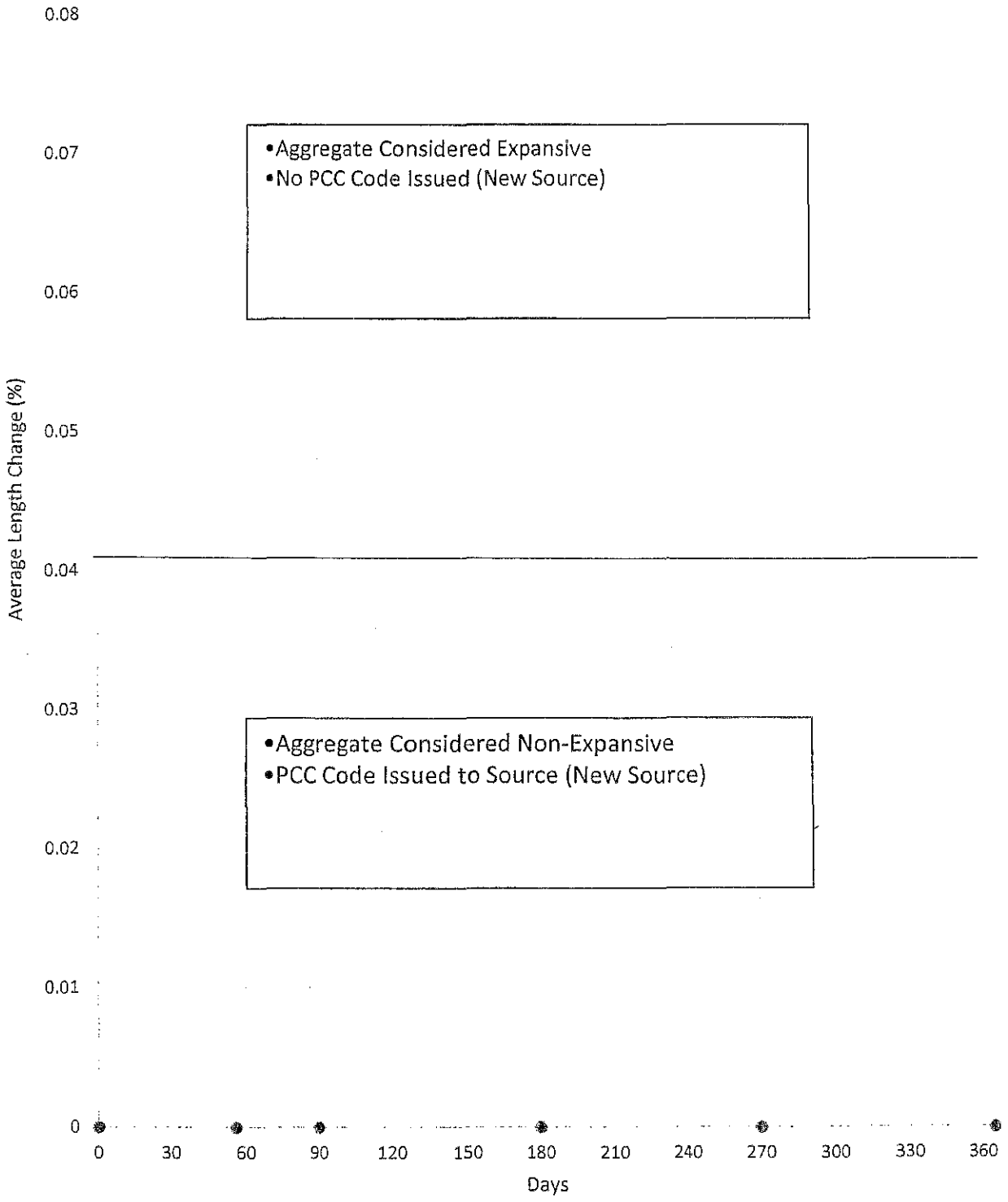
FIGURE 1
Flow Chart for the PCC Approval Process for New Sources of Other Aggregates (Stone)

New Other Aggregates (Stone) Source
ASTM C1260
Figure 2



New Other Aggregates (Stone) Source
ASTM C1293

Figure 3



Appendix B

Figure 1 - PCC Approval Process for New Limestone Sources

Figure 2 - CSA A23.2 – 26A Chart

Figure 3 - ASTM C1260

Figure 4 - ASTM C1293

Figure 5 - ASTM C1105

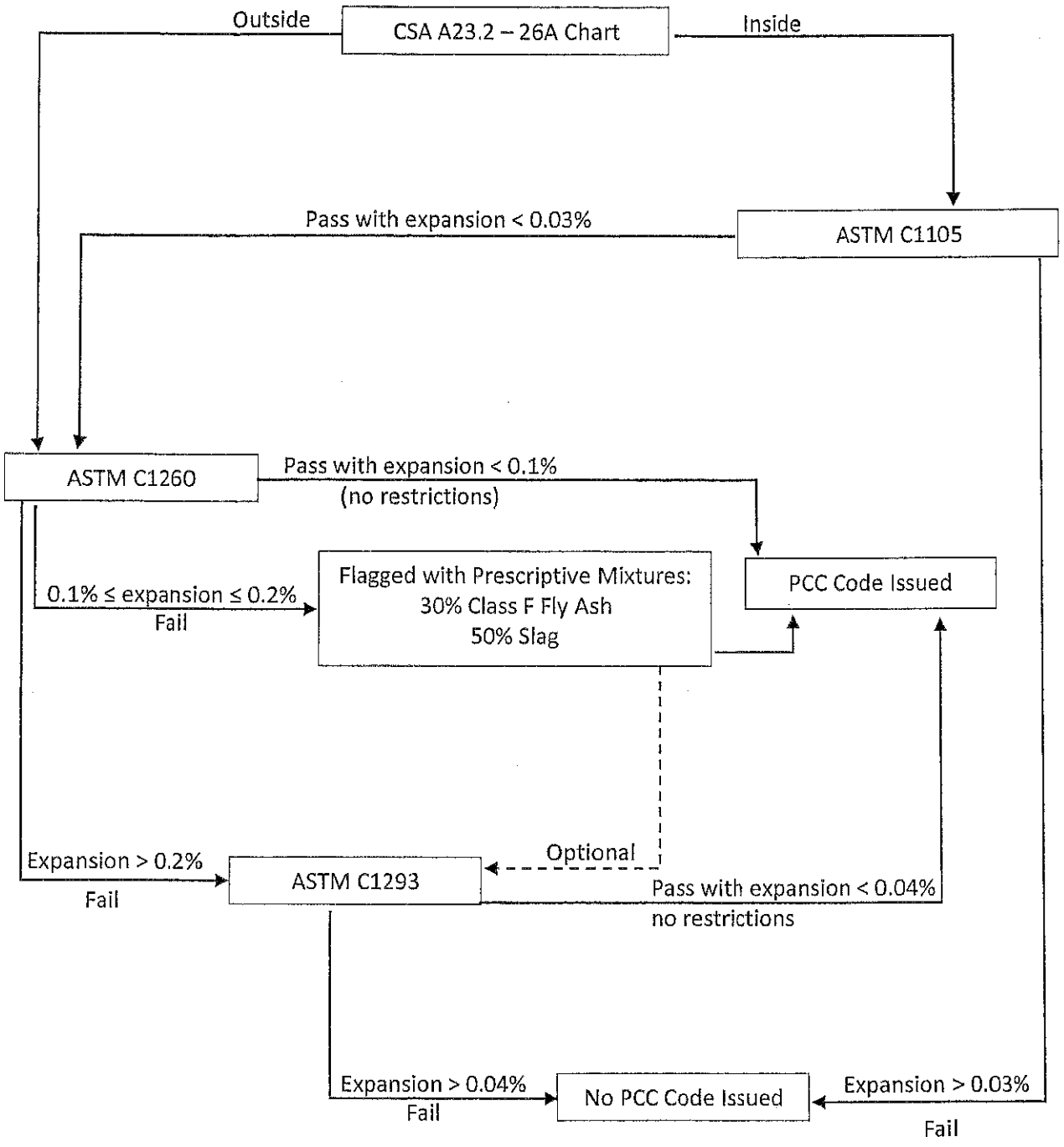
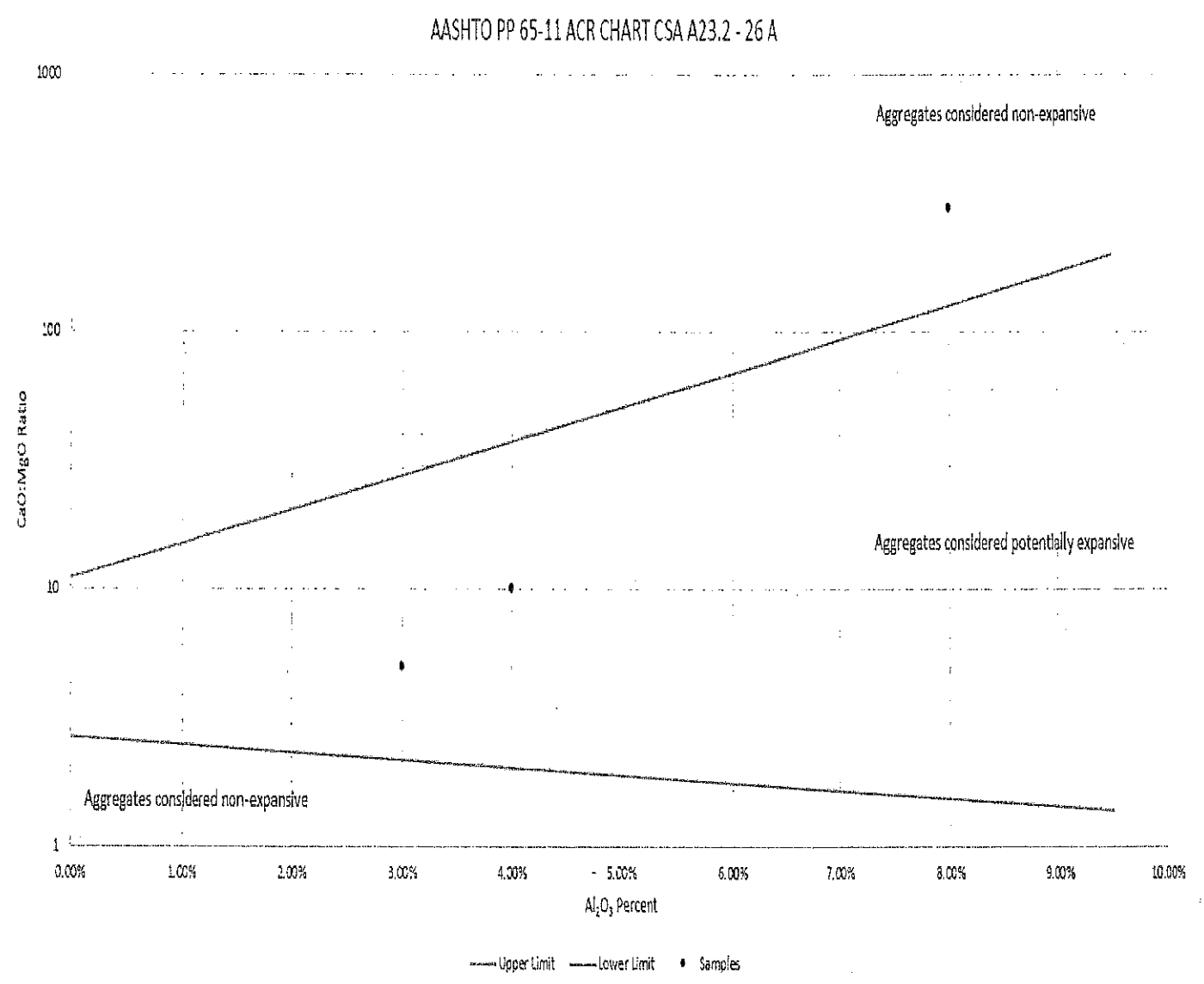


FIGURE 1
Flow Chart for the PCC Approval Process for New Limestone Sources

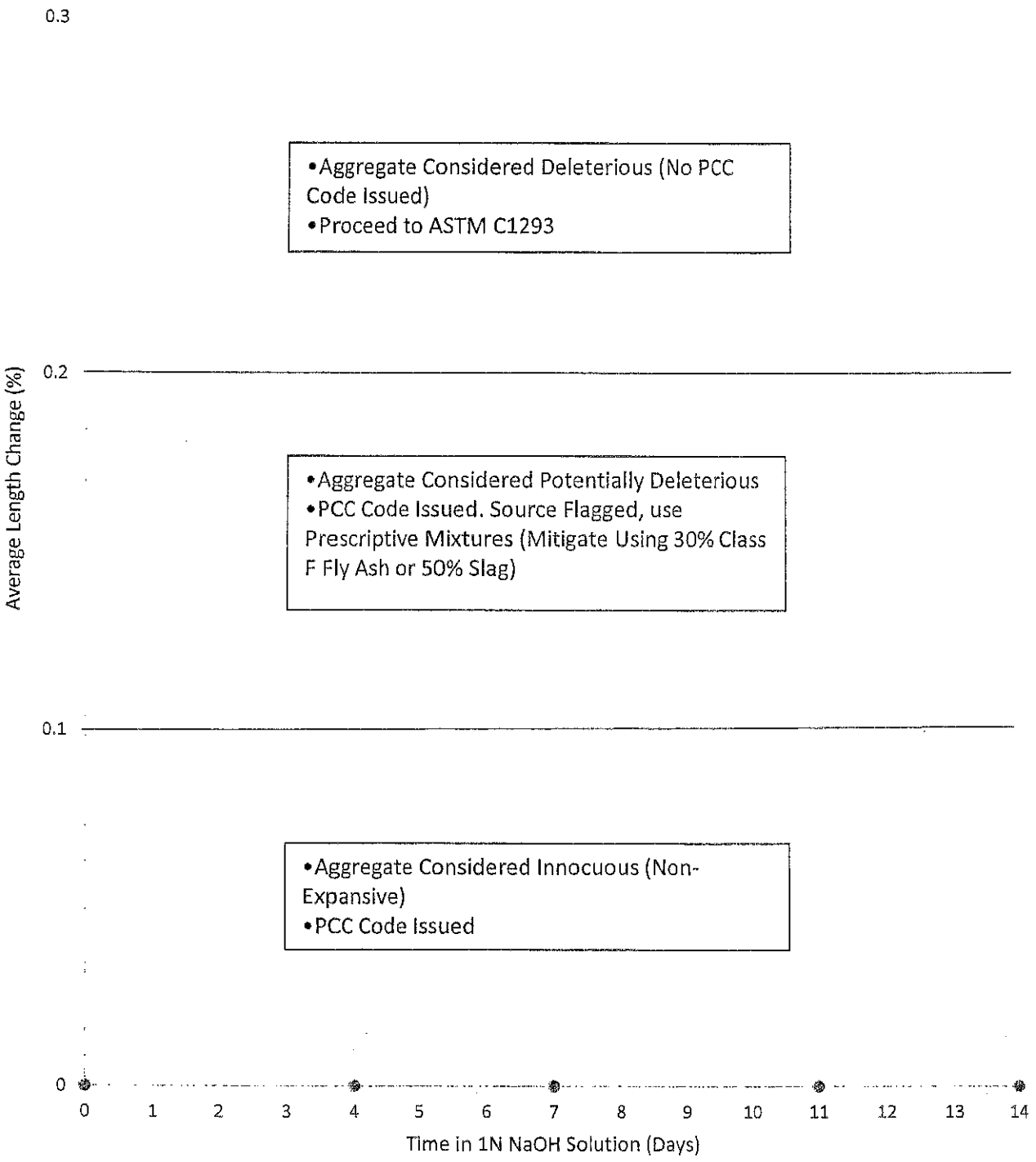
CSA A23.2 – 26A Chart

Figure 2



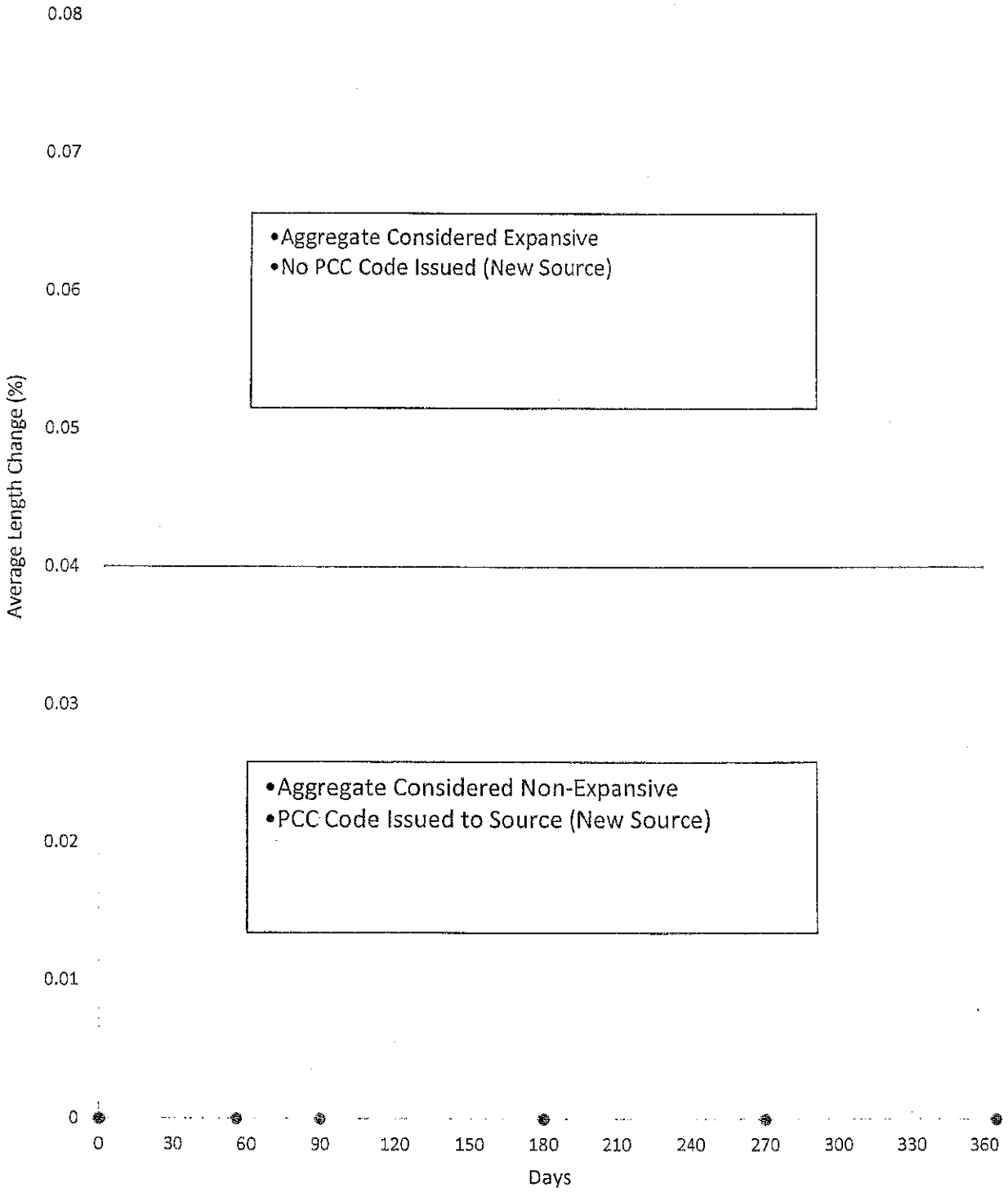
New Limestone Source ASTM C1260

Figure 3



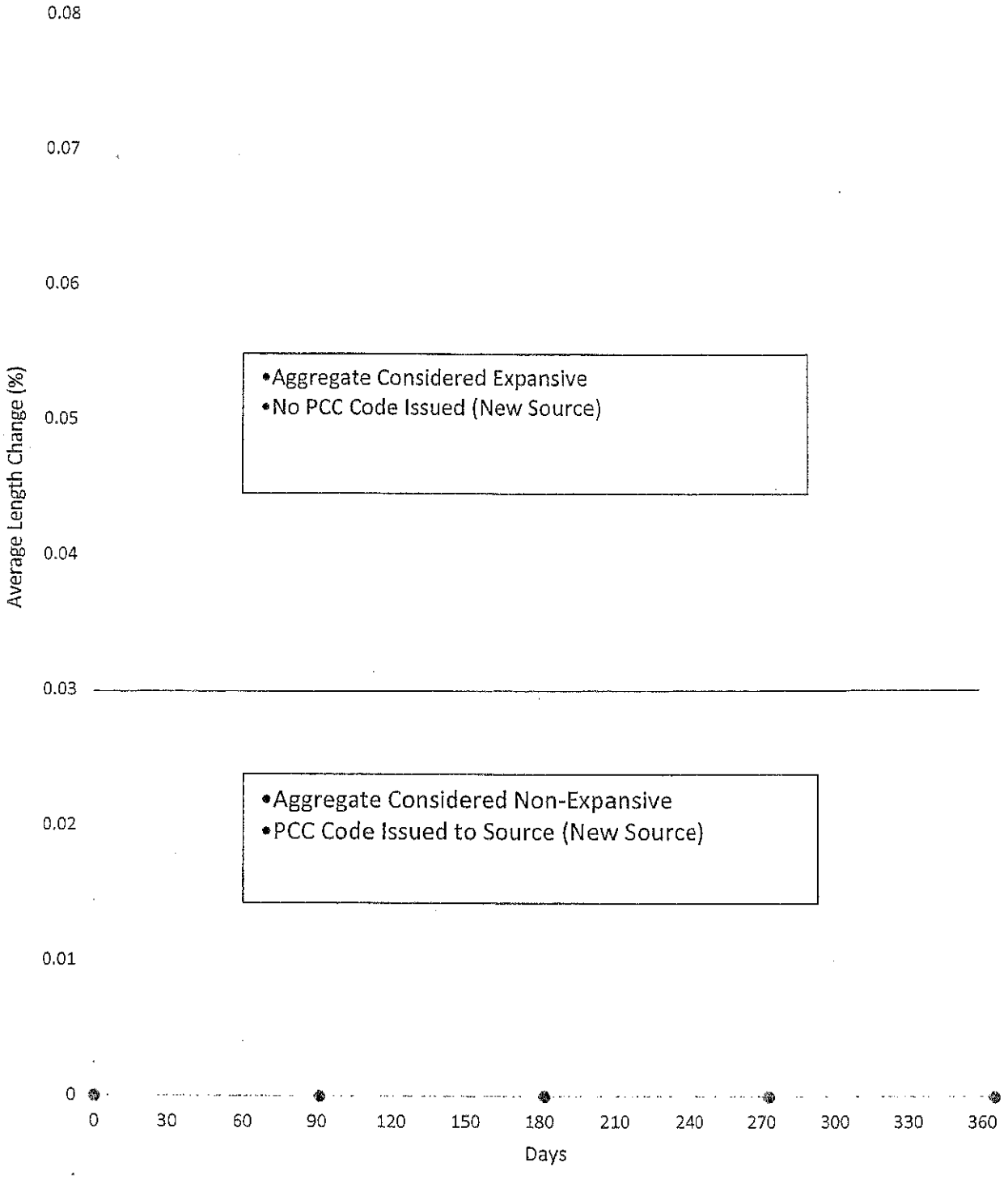
New Limestone Source ASTM C1293

Figure4



New Limestone Source ASTM C1105

Figure 5



Appendix C

Figure 1 - PCC Approval Process for New Sand and Gravel Sources

Figure 2 - ASTM C1260

Figure 3 - ASTM C1293

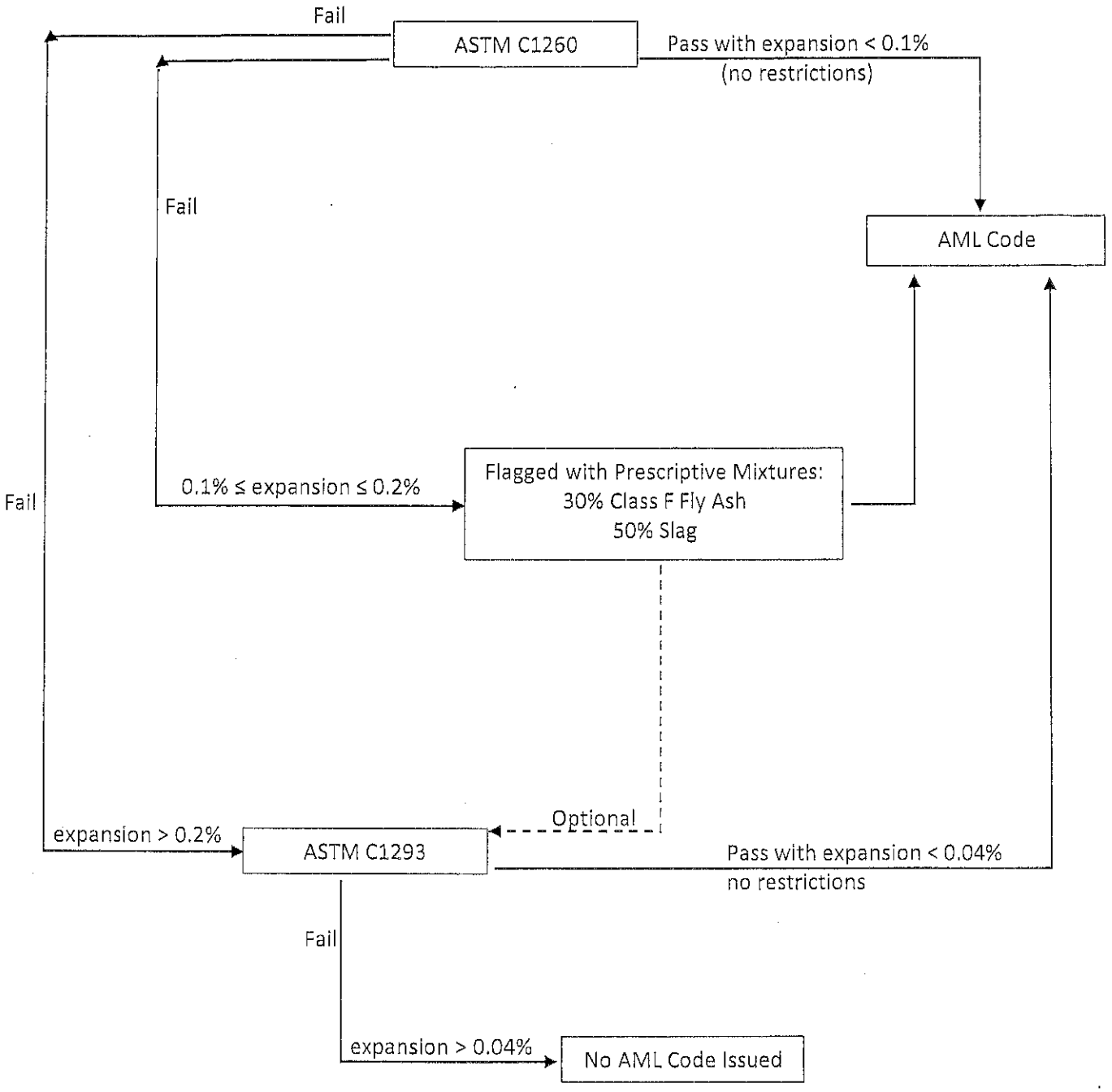
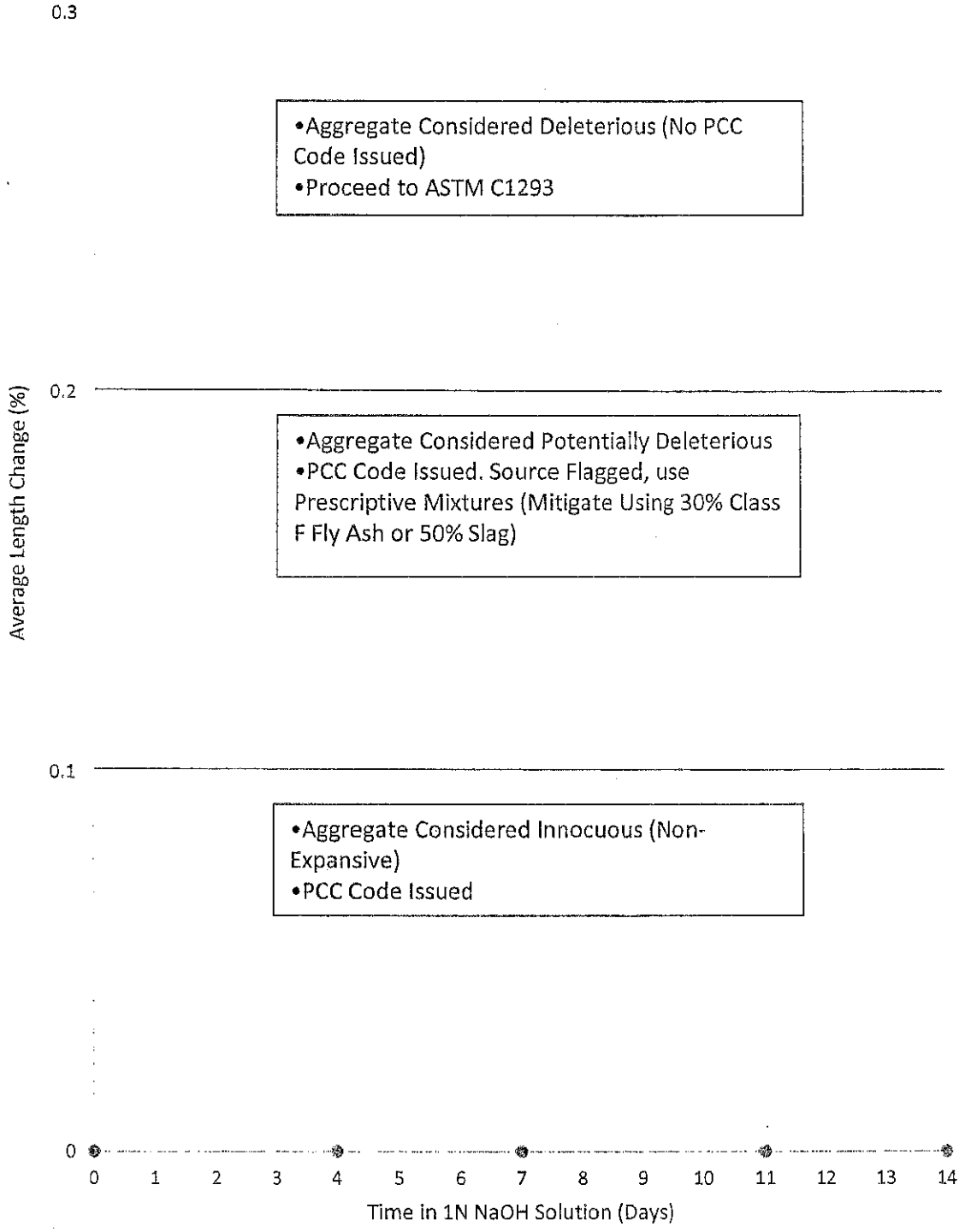


FIGURE 1
Flow Chart for the PCC Approval Process for New Sources of Sand and Gravel

New Sand/Gravel Source ASTM C1260

Figure 2



New Sand/Gravel Source ASTM C1293

Figure 3