Soils and Aggregates Division

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Material Quality Assurance Processes

Aggregate Materials, Controlled Mixtures

Soils and Aggregates Division

Source Level Materials	Specification	Comments
Bank Run Gravel	901.01	
Graded Aggregate Base	901.01	

Plant or Product Qualification

Evaluation of Production Facility for SATD Materials

Facility Qualification

The GAB plant will be inspected and its quality control plan reviewed by representative of the Soils and Aggregates Technology Division. This may be performed in conjunction with quality testing other aggregate materials.

Qualification of Production Facility for state projects.

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1	per	1	Prior to Source Request
1	per	2	Year

Evaluation of Material Product for SATD Materials

Product Qualification

The JMF shall be submitted to OMT along with samples of representative component materials to establish maximum density and optimum moisture. The mentioned samples will be taken by plant personnel and witnessed by a certified plant technician. The JMF letter will contain component size, producer and location of each component and the percentage of each component. All components shall be from approved aggregate producers. When the JMF is verified, a form (signed by the SATD Division Chief) will be sent to the producer containing the JMF number, gradation, density and optimum moisture.

Qualification of Material Product.

Optimum Density Chart, 75 pound samples of each component will also be accepted.

75 Lbs, Each Component in a Soils Bag

1	per	1	Prior to Source Request
1	per	2	Year

Routine SATD Production QA

Product QC/QA

An OMT certified technician will visit the production facility as required. During the visit, the QA inspector assures that a certified technician is on duty, the producer's approved quality control plan is being followed, the QC technician is performing the testing according to specifications and the equipment is acceptable.

The QA technician will visually inspect the GAB stock pile to assure quality, check for segregation, and witness the loading of material into the delivery truck.

Production Quality Assurance

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1	per	10	Production Day

SATD Material Product QC

Product QC/QA

The Producer's certified aggregate technician will sample the material at the source to verify gradation tolerances and moisture of the material as noted on the approved JMF. this will be reported on a Form 43.

Performed at production facility. Results kept on file and will be checked during the Quality Assurance process. Gradation checks must occur at minimum once per each 1000 ton lot (or portion there of) and at least once per 8 hour production shift. Moisture checks must occur within every four hours of production.

Producer to perform daily gradations and moisture checks on aggregate materials.

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75 Lbs in a Soils Bag

1	per	1	8 Hour Shift
1	per	1,000	Ton

Material Quality Assurance Processes

Aggregate Materials, Controlled Mixtures

Soils and Aggregates Division

Source Approval

Source Submission

Source of Supply Submittal

A name and address of the material sources of supply shall be sent to MMD for review. The producer is the organization that creates the material, the supplier is the one that delivers it to the project.

Material Producer must be on qualified lists and associated correctly prior to source approval. If this cannot be accomplished the source will be rejected.

Source of Supply Processing

1	per	1	Prior to Usage on Project

Project Construction

Material Verification for SATD Materials

Material Verification

The contractor is required to provide the production facility with a 24 hour notice prior to requested shipment. A certified GAB-1 form is sent to the project with the first truck on each production day based on the producer's QC process. The project engineer will review the initial load documentation and all load tickets to ensure that the material is from the correct source and that the test values compare to the OMT approved JMF.

Project Engineer to verify load ticket for correct JMF.

OMT approval stamp, Material and Moisture Density verification

1	per	1	Placement Day

Project Site Testing

Material Sampling and Testing

The Project Engineer will verify that the material received on the job site is correct by comparing the GAB-1 form that came with the delivery matches the JMF that was associated during the source review process. Moisture content and density are checked at the jobsite. The plant shall be notified immediately if the moisture content is incorrect. Density tests are taken to insure that the layers are compacted to the required percentage of maximum dry density. Compaction and moisture tests are recorded on OMT approved forms and are submitted to OMT.

Compaction and Moisture analysis performed by Project Engineer. Submit compaction report to MMD for clearance.

Project Engineer will conduct compaction and moisture analysis.

Requirement waived if the quantity is less than 200 TON per day or 1000 TON per project.

1	per	1	Placement Day
2	per	2	Lane Mile per Lift

Material Quality Assurance Processes

Aggregate Materials, Crushed Gradations

Soils and Aggregates Division

Source Level Materials	Specification	Comments
Crushed Stone Gradations	901.01	

Plant or Product Qualification

Evaluation of Production Facility for SATD Materials — *Facility Qualification*

Evaluation of Crushed Aggregate producers that wish to be placed on the Aggregate Bulletin.

Task performed in conjunction with review of producer for Aggregate Source Material. Final plant status will be either Qualified for use or Not Qualified for use.

1 per 1 Prior to Usage on Project

Evaluation of Crushed Aggregate producers that do NOT require to be listed in the Aggregate Bulletin.

Producer used when material is sourced to a project for usages that do not require placement on the Aggregate Bulletin. A cursory data review will be performed and the status will be set as "Project specific review required".

1 per 1 Prior to Usage on Project

Source Approval

Source Submission — *Source of Supply Submittal*

A name and address of the material sources of supply shall be sent to MMD for review. The producer is the organization that creates the material, the supplier is the one that delivers it to the project.

The requirement for prequalifcation of an aggregatre producer is dependent upon the usage of the material. If the construction specification references Section 901 in materials then the producer must be listed in the current edition of the Aggregate Bulletin (http://www.roads.maryland.gov/Index.aspx?PageId=42) for the source submission to be approved.

Source of Supply Processing

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1 per 1 Prior to Usage on Project

Material Production

SATD Material Review — *Material Certification for Project Usage*

Material to be sampled as Common Borrow at its place of origin. Project Engineer to contact SATD to schedule a sampling.

Only to be used if the aggregate is being used as Common Borrow.

35 LBS in a Soils Bag

1 per 1 Prior to Usage on Project

Material to be sampled as Capping Borrow at its place of orgin. Project Engineer to contact SATD to schedule a sampling.

Only to be used if aggregate is being used as a Capping Borrow.

35 LBS in a Soils Bag

2 per 1 Prior to Usage on Project

Material to be sampled as Modified Borrow at its place of origin. Project Engineer to contact SATD to schedule a sampling.

Only to be used if the aggregate is being used as Modified Borrow.

35 LBS in a Soils Bag

2 per 1 Prior to Usage on Project

SATD Material Review

Material Certification for Project Usage

Material to be sampled as Select Borrow at its place of origin. Project Engineer to contact SATD to schedule a sampling.

Only to be used if aggregate is being used as Select Borrow

35 LBS in a Soils Bag

2	per	1	Prior to Usage on Project

Project Construction

Material Verification for SATD Materials

Material Verification

Project Engineer to verify material product, submit Form 14.

To be used when the aggregate is required in drainage or general conditions.

Requirement waived if the quantity is less than 100 TON per day or 500 TON per project.

1	per	1	Placement Day

Project Engineer to submit verification samples of Common Borrow material.

Only to be used if aggregate is to be used as Common Borrow.

35 LBS in a Soils Bag

1	per	15,000	Cubic Yard

Project Engineer to submit verification samples of Modified Borrow material.

Only to be used if aggregate is to be used as Modified Borrow

35 LBS in a Soils Bag

1	per	15,000	Cubic Yard

Project Engineer to submit verification samples of material of Select Borrow.

Only to be used if aggregate is to be used as Select Borrow.

35 LBS in a Soils Bag

1	per	15,000	Cubic Yard

Project Site Testing

Material Sampling and Testing

If the aggregate is to be used as a Borrow material the Project Engineer will ensure that the material is being placed uniformly in regards to moisture, thickness and compaction. Moisture density tests (nuclear gauge or sand cone) will be performed to ensure adequate placed material quality control. The PE will document each moisture density test and submit the information to OMT.

Compaction and Moisture analysis of Common Borrow to be performed by Project Engineer. Submit Compaction report to MMD for clearance.

Only used when aggregate is used as Common Borrow.

35 LBS in a Soils Bag

4	per	1	Lane Mile per Lift
1	per	2,000	Cubic Yard

Compaction and Moisture analysis of Capping Borrow to be performed by Project Engineer. Submit Compaction report to MMD for clearance.

Only used when aggregate is used as Capping Borrow.

35 LBS in a Soils Bag

4	per	1	Lane Mile per Lift
1	per	2,000	Cubic Yard

Project Site Testing

Material Sampling and Testing

If the aggregate is to be used as a Borrow material the Project Engineer will ensure that the material is being placed uniformly in regards to moisture, thickness and compaction. Moisture density tests (nuclear gauge or sand cone) will be performed to ensure adequate placed material quality control. The PE will document each moisture density test and submit the information to OMT.

Compaction and Moisture analysis of Modified Borrow to be performed by Project Engineer. Submit Compaction report to MMD for clearance.

Only used when aggregate is used as Modified Borrow.

35 LBS. in a Soils Bag

4	per	1	Lane Mile per Lift
1	per	2,000	Cubic Yard

Compaction and Moisture analysis of Select Borrow to be performed by Project Engineer. Submit Compaction report to MMD for clearance.

35 LBS in a Soils Bag

4	per	1	Lane Mile per Lift
1	per	2,000	Cubic Yard

Compaction and Moisture analysis of Select Borrow for Trench Backfill to be performed by Project Engineer. Submit Compaction report to MMD for clearance.

Only used when aggregate is used for Trench Backfill material

1	per	150	Linear Feet per 3 Foot Lift

Material Quality Assurance Processes

Aggregate Materials, Other Stone and Sand

Soils and Aggregates Division

Source Level Materials	Specification	Comments
Cobblestone		
Naturally Occurring Sand	901.01	
River Rock		

Plant or Product Qualification

Evaluation of Production Facility for SATD Materials *Facility Qualification*

Evaluation of Crushed Aggregate producers that wish to be placed on the Aggregate Bulletin.

Task performed in conjunction with review of producer for Aggregate Source Material. Final plant status will be either Qualified for use or Not Qualified for use.

1 per 1 Prior to Usage on Project

Evaluation of Crushed Aggregate producers that do NOT require to be listed in the Aggregate Bulletin.

Producer used when material is sourced to a project for usages that do not require placement on the Aggregate Bulletin. A cursory data review will be performed and the status will be set as "Project specific review required".

1 per 1 Prior to Usage on Project

Source Approval

Source Submission *Source of Supply Submittal*

A name and address of the material sources of supply shall be sent to MMD for review. The producer is the organization that creates the material, the supplier is the one that delivers it to the project.

The requirement for prequalifcation of an aggregatre producer is dependent upon the usage of the material. If the construction specification references Section 901 in materials then the producer must be listed in the current edition of the Aggregate Bulletin (http://www.roads.maryland.gov/Index.aspx?PageId=42) for the source submission to be approved.

Source of Supply Processing

1 per 1 Prior to Usage on Project

Project Construction

Material Verification for SATD Materials *Material Verification*

Project Engineer to verify material, Submit form 14 for clearance

1 per 1 Item Completion

Material Quality Assurance Processes

Aggregate Materials, Recycled PCC Gradations

Soils and Aggregates Division

Source Level Materials	Specification	Comments

Recycled PCC Gradations

Source Approval

Source Submission *Source of Supply Submittal*

A name and address of the material sources of supply shall be sent to MMD for review. The producer is the organization that creates the material, the supplier is the one that delivers it to the project.

Source of Supply Processing

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1 per 1 Prior to Source Request

Material Production

SATD Certification Review *Material Certification for Project Usage*

SATD shall review material certification and/or material documentation to ensure it is in compliance with standard specifications, contract specifications, and is appropriate for the requested usage.

Material Certification to be provided by material supplier during facility visit.

Recycled or re-handled materials shall conform to TC 6.09, TC 6.10, and contract specifications. Materials may require TCLP and will be subject to the approval of OMT.

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1 per 1 Prior to Usage on Project

SATD Material Review *Material Certification for Project Usage*

Material to be sampled as Common Borrow at its place of origin. Project Engineer to contact SATD to schedule a sampling.

Option appilcable only when material is used as Common Borrow.

35 LBS in a Soils Bag

2 per 1 Prior to Usage on Project

Material to be sampled as Modified Borrow at its place of origin. Project Engineer to contact SATD to schedule a sampling.

Option applicable only if material is to be use as Modified Borrow.

35 LBS in a Soils Bag

2 per 1 Prior to Usage on Project

Material to be sampled as Select Borrow at its place of origin. Project Engineer to contact SATD to schedule a sampling.

Option applicable only if material is to be used as Select Borrow

35 LBS in a Soils Bag

2 per 1 Prior to Usage on Project

Project Construction

Project Sampling and Lab Testing of SATD Material *Material Verification*

Project Engineer to submit verification samples of Common Borrow material.

Option applicable only if material is to be used as Common Borrow.

35 LBS in a Soils Bag

1 per 15,000 Cubic Yard

Project Sampling and Lab Testing of SATD Material

Material Verification

Project Engineer to submit verification samples of material of Modified Borrow.

Option applicable only if material is to be used as Modified Borrow.

35 LBS in a Soils Bag

1	per	15,000	Cubic Yard

Project Engineer to submit verification samples of Select Borrow material.

Option applicable only if material is to be used as Select Borrow.

35 LBS in a Soils Bag

1	per	15,000	Cubic Yard

Project Site Testing

Material Sampling and Testing

The Project Engineer or Prime Contractor shall conduct pH testing of in-place recycled material on both during and subsequent days of a rain even to ensure it is within tolerances. SATD will receive this data and perform separate QA checks to monitor the material performance.

Project Engineer to verify pH of placed recycled materials.

Option applicable when recycled materials are used for drainage or general conditions.

1	per	1	Project Completion

Project Engineer to verify pH of placed material, and perform Compaction and Moisture analysis of Common Borrow. Submit Compaction report to MMD for clearance.

Option applicable only if material is to be used as Common Borrow.

4	per	1	Lane Mile per Lift
1	per	2,000	Cubic Yard

Project Engineer to verify pH of placed recycled material, and perform Compaction and Moisture analysis of Modified Borrow.

Option applicable only if recycled material is to be used as Modified Borrow

4	per	1	Lane Mile per Lift
1	per	2,000	Cubic Yard

Project Engineer to verify pH of placed material, and perform Compaction and Moisture analysis of Select Borrow. Submit Compaction report to MMD for clearance.

Option applicable only if material is to be used as Select Borrow.

4	per	1	Lane Mile per Lift
1	per	2,000	Cubic Yard

Material Quality Assurance Processes

Aggregate Materials, Source Material

Soils and Aggregates Division

Source Level Materials	Specification	Comments
Virgin Aggregate Source Material	901.01	

Plant or Product Qualification

Evaluation of Production Facility for SATD Materials *Facility Qualification*

Aggregates that are components of product mixtures (e.g.. HMA, PCC, and GAB), drainage, or load carrying conditions must come from qualified sources. These sources are made available to the public through an OMT published document named the Aggregate Bulletin. Specific material properties are found during the Review of Aggregate Quality process.

Qualification of Quarry

1 per 1 Prior to Source Request

Review of Aggregate Quality *Product Qualification*

Annual Quality of Coarse Aggregates

50 Lbs (or 35 Lbs for lightweight) in a Soils Bag

1 per 1 Prior to Source Request

1 per 1 Year

Annual Quality of Fine Aggregates.

50 Lbs (40 lbs for lightweight) in a Soils Bag

1 per 1 Prior to Source Request

1 per 1 Year

Material Quality Assurance Processes

Foamed Asphalt Stabilized Base Course

Soils and Aggregates Division

Source Level Materials	Specification	Comments

Foamed Asphalt Stabilized Base

Plant or Product Qualification

Review of Misc Production Location *Limited Producer Check*

General review of producer information. No production qualification required.

Production facility data maintained to track the material supply chain.

Address and low level information is maintained to provide data of facilities that produce materials in this category. Facilities that produce material in this category will be given a status of "Project Specific Review Required."

1 per 1 Prior to Source Request

Source Approval

Source Submission *Source of Supply Submittal*

A name and address of the material sources of supply shall be sent to MMD for review. The producer is the organization that creates the material, the supplier is the one that delivers it to the project.

Source of Supply Processing

New Material, speak with SATD and ATD for source approval and QA details.

1 per 1 Prior to Usage on Project

Material Quality Assurance Processes

Geosynthetic Materials, Geotextiles

Soils and Aggregates Division

Source Level Materials	Specification	Comments
Geotextile Materials	921.09	

Plant or Product Qualification

Evaluation of Production Facility for SATD Materials *Facility Qualification*

Cursory Plant data record review, required for qualified products.

Required for all Qualified Products.

1 per 1 Prior to Source Request

Evaluation of Material Product for SATD Materials *Product Qualification*

All Geotextiles shall be listed in the National Transportation Product Evaluation Program (NTPEP) for geotextiles. Only those Geotextiles that have been evaluated by NTPEP will be considered for qualification on SHA projects. See the "Product Qualification Procedures" for Geotextiles document on the "List of Qualified Producer and Products" internet page for detailed information on the qualification process. (http://www.roads.maryland.gov/Index.aspx?PageId=600)

Qualification of Material Product.

1 per 1 Prior to Source Request

1 per 24 Months

Material Product QA for SATD Materials *Product QC/QA*

The SATD field team will compare the Geotextile Roll test data sheets that were submitted to the projects with the MARV letters that were attached during project sourcing. This will be done on a quarterly basis on a representative set of projects that used geotextiles in the quarter to assure the correct material was used.

Quality Assurance of Delivered Products

1 per 3 Months

Source Approval

Source Submission *Source of Supply Submittal*

A name and address of the material sources of supply shall be sent to MMD for review. The producer is the organization that creates the material, the supplier is the one that delivers it to the project.

The requested geotextile producers and products must be qualified for state use prior to the source request. If the geotextile product has not been verified by SATD the "Review Product" process noted above will take place before the source submission is submitted.

A Geotextile source must include a qualified producer, qualified product, and a SATD approved MARV letter to warrant consideration. Once this documentation is associated with the source request it will be delegated to SATD to ensure the correct classification of geotextile is being used for the selected item. To assist in this review the contractor should indicate the intended classification within the comments of the source request.

Source of Supply Processing

1 per 1 Prior to Usage on Project

Project Construction

Material Verification for SATD Materials *Material Verification*

The certified roll data is collected so that SATD can compare it to the filed MARV letter at regular intervals for material quality assurance.

Project Engineer to receive certified roll data (TC1.03 w/ test data), and submit to MMD for clearance.

Certified Roll data is specific to the material that arrives at the job site.

1 per 1 Delivery to Project

Material Quality Assurance Processes

Geosynthetic Materials, Other

Soils and Aggregates Division

Source Level Materials	Specification	Comments
Geo-Cell	Special Provisions	
Geo-Grid	Special Provisions	
Geo-Webs	Special Provisions	
PVC Liner	Special Provisions	

Plant or Product Qualification

Review of Misc Production Location *Limited Producer Check*

General review of producer information. No production qualification required.

Production facility data maintained to track the material supply chain.

Address and low level information is maintained to provide data of facilities that produce materials in this category. Facilities that produce material in this category will be given a status of "Project Specific Review Required."

1 per 1 Prior to Source Request

Source Approval

Source Submission *Source of Supply Submittal*

A name and address of the material sources of supply shall be sent to MMD for review. The producer is the organization that creates the material, the supplier is the one that delivers it to the project.

Specialty geosynthetics will need to be evaluated on a case by case based by the Soils and Aggregates Division Chief. Prime Contractor to submit project specific material specifications along with the source request so that the evaluation can be performed accurately.

Source of Supply Processing

1 per 1 Prior to Usage on Project

Project Construction

Material Verification for SATD Materials *Material Verification*

Project Engineer to verify material.

SATD Division chief to provide case by case clearance requirements.

1 per 1 Delivery to Project

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Material Quality Assurance Processes

Soil Materials, Bioretention Soil Mix

Soils and Aggregates Division

Source Level Materials	Specification	Comments
Bioretention Soil Mix	920.01.05	

Plant or Product Qualification

Evaluation of Production Facility for SATD Materials *Facility Qualification*

Bioretention Soil Mixes shall be tested by an independent laboratory and the results sent to OMT for review. The producer must also indicate their sources of sand and mulch for their mixture. If the laboratory results are acceptable the producer will be placed on the published eligible list for six months so that it can be sourced for construction projects during that time.

A producer will have a status of "Qualified for Sourcing on State Projects" once acceptable laboratory results are received.

A producer that fails to qualify after 3 rounds of laboratory testing will be given the status "Not Qualified for State Projects".

Material Producer to have their soil product tested by an independent laboratory and submit results to SATD.

Material will be tested in accordance with MSMT 356.

1 per 6 Months

Source Approval

Source Submission *Source of Supply Submittal*

A name and address of the material sources of supply shall be sent to MMD for review. The producer is the organization that creates the material, the supplier is the one that delivers it to the project.

Producers of Bioretention Soil Mix need to be on the published eligible list and associated correctly prior to source approval. If the contractor sources a producer that is not on the eligible list they will be advised that the source approval is contingent on a review process. If the contractor still wishes to use this producer, the contractor shall advise the material producer to contact SATD for eligibility procedures and duration.

Source of Supply Processing

1 per 1 Prior to Usage on Project

Material Production

SATD Material Review *Material Certification for Project Usage*

After the source letter has been approved, the Project Engineer shall contact the Soils and Aggregate Technology Division field team leader to sample the BSM from the material source for testing and approval. After the material has been tested, a Soil Test Report (Form 27B) will be sent to the Project Engineer.

Project Engineer to contact SATD 30 days prior to material delivery. SATD will sample material at source, ensure material testing, and issue a Form 27B.

20 LB in a Soils Bag

Requirement waived if the quantity is less than 30 SY per project.

1 per 1 Prior to Usage on Project

Project Construction

Material Verification for SATD Materials *Material Verification*

The Project Engineer shall perform a visual inspection of the placed material to verify proper use and placement.

Project Engineer to verify material and submit the approved Form 27B to the Materials Management Division for clearance.

1 per 1 Item Completion

Material Quality Assurance Processes

Soil Materials, Fill Soil

Soils and Aggregates Division

Source Level Materials	Specification	Comments
Clay Core Trench		
Soil Borrow	916.01.04	

Source Approval

Source Submission *Source of Supply Submittal*

A name and address of the material sources of supply shall be sent to MMD for review. The producer is the organization that creates the material, the supplier is the one that delivers it to the project.

Included in the Source of Supply letter shall be the location of the borrow pit, the type of borrow being provided and what material is being requested to be used as borrow. A "Producer" is only required if the material is a manufactured product.

Source of Supply Processing

1 per 1 Prior to Usage on Project

Material Production

SATD Material Review *Material Certification for Project Usage*

An SATD field QA technician shall meet with a contractor's representative and a project representative at the borrow source to obtain a test sample, MSMT 354. The sample is taken to the OMT laboratory for testing that will include classification, maximum dry density and optimum moisture. SATD will provide the Project Engineer with the family of compaction curves that the material conforms to.

Material to be sampled as Common Borrow at its place of origin. Project Engineer to contact SATD to schedule a sampling.

35 LBS in a Soils Bag

2 per 1 Prior to Usage on Project

Material to be sampled as Capping Borrow at its place of orgin. Project Engineer to contact SATD to schedule a sampling.

35 LBS in a Soils Bag

2 per 1 Prior to Usage on Project

Material to be sampled as Modified Borrow at its place of origin. Project Engineer to contact SATD to schedule a sampling.

35 LBS in a Soils Bag

2 per 1 Prior to Usage on Project

Material to be sampled as Select Borrow at its place of origin. Project Engineer to contact SATD to schedule a sampling.

35 LBS in a Soils Bag

2 per 1 Prior to Usage on Project

Material to be sampled as Clay Core material at its place of origin. Project Engineer to contact SATD to schedule a sampling

35 LBS in a Soils Bag

2 per 1 Prior to Usage on Project

Project Construction

Project Sampling and Lab Testing of SATD Material *Material Verification*

PE will submit samples of material to SATD to ensure that the material is from a consistent source. The material will be sampled at the frequencies listed below or when there is a noticeable change in the material consistency.

Project Engineer to submit verification samples of Common Borrow.

35 LBS in a Soils Bag

Project Sampling and Lab Testing of SATD Material

Material Verification

PE will submit samples of material to SATD to ensure that the material is from a consistent source. The material will be sampled at the frequencies listed below or when there is a noticeable change in the material consistency.

1	per	15,000	Cubic Yard

Project Engineer to submit verification samples of material of Capping Borrow.

35 LBS in a Soils Bag

2	per	2	Lane Mile per Lift

Project Engineer to submit verification samples of material of Modified Borrow.

35 LBS in a Soils Bag

1	per	15,000	Cubic Yard

Project Engineer to submit verification samples of material of Select Borrow.

35 LBS in a Soils Bag

1	per	15,000	Cubic Yard

Project Engineer to submit verification samples of Clay Core material.

35 LBS in a Soils Bag

1	per	15,000	Cubic Yard

Project Site Testing

Material Sampling and Testing

The Project Engineer will ensure that the material is being placed uniformly in regards to moisture, thickness and compaction. Moisture density tests (nuclear gauge or sand cone) will be performed to ensure adequate placed material quality control. The PE will document each moisture density test submit the information to OMT.

Compaction and Moisture analysis of Common Borrow to be performed by Project Engineer. Submit Compaction report to MMD for clearance.

4	per	1	Lane Mile per Lift
1	per	2,000	Cubic Yard

Compaction and Moisture analysis of Capping Borrow to be performed by Project Engineer. Submit Compaction report to MMD for clearance.

4	per	1	Lane Mile per Lift
1	per	2,000	Cubic Yard

Compaction and Moisture analysis of Modified Borrow to be performed by Project Engineer. Submit Compaction report to MMD for clearance.

4	per	1	Lane Mile per Lift
1	per	2,000	Cubic Yard

Compaction and Moisture analysis of Select Borrow to be performed by Project Engineer. Submit Compaction report to MMD for clearance.

4	per	1	Lane Mile per Lift
1	per	2,000	Cubic Yard

Compaction and Moisture analysis of Select Borrow for Trench Backfill to be performed by Project Engineer. Submit Compaction report to MMD for clearance.

Option used when material is used as trench backfill.

1	per	150	Linear Feet per 3 Foot Lift

Compaction and Moisture analysis of Clay Core material to be performed by Project Engineer. Submit Compaction report to MMD for clearance.

1	per	2,000	Cubic Yard

Material Quality Assurance Processes

Soil Materials, Furnished Topsoil

Soils and Aggregates Division

Source Level Materials	Specification	Comments
Furnished Topsoil	920.01.02	

Plant or Product Qualification

Evaluation of Production Facility for SATD Materials

Facility Qualification

Furnished Topsoils shall be tested by an independent laboratory and the results sent to OMT for review. If the laboratory results are acceptable the producer will be placed on the published eligible list for six months so that it can be sourced for construction projects during that time.

A producer that wishes to supply only to select State projects and to remain off the eligible list will be given a status of "Project Specific Review Required".

A producer that has qualifying laboratory test results but has not yet had a Nutrient Management Plan developed or been sourced to a project will be placed on the eligible list and given a status of "Plant Evaluation Required".

A producer will have a status of "Qualified for Sourcing on State Projects" once acceptable laboratory results are received and a Nutrient Management Plan has been developed.

A producer that fails to qualify after 3 rounds of laboratory testing will be given the status "Not Qualified for State Projects".

Material Producer to have their soil product tested by an independent laboratory and submit results to SATD.

Material will be tested in accordance with MSMT 356.

1 per 6 Months

Evaluation of Material Product for SATD Materials

Product Qualification

Quality Evaluation of Furnished Topsoil Product.

SATD will sample material at source and ensure the material is tested. Form 27B and Nutrient Management Plan will be stored as product data.

20 LB in a Soils Bag

1 per 1 Prior to Source Approval

1 per 2 Months

Source Approval

Source Submission

Source of Supply Submittal

A name and address of the material sources of supply shall be sent to MMD for review. The producer is the organization that creates the material, the supplier is the one that delivers it to the project.

Producers of Furnished Topsoil need to be on the published eligible list and associated correctly prior to source approval. If the contractor sources a producer that is not on the eligible list the contractor will be advised that the source approval is contingent on a review process. If the contractor still wishes to use this producer, the contractor shall advise the material producer to contact SATD for eligibility procedures and duration.

Source of Supply Processing

A qualified Nutrient Management Plan must be associated with each source submission. Upon successful approval, the NMP and Form 27B will be associated to the Source of Supply and can be found on the Documents Tab in the MMS.

1 per 1 Prior to Usage on Project

Project Construction

Material Verification for SATD Materials

Material Verification

The Project Engineer shall perform a visual inspection of the placed material to verify proper use and placement.

Project Engineer to verify material and submit the approved Form 27B to the Materials Management Division for clearance. Form 27B may be found on the Documents Tab on the material source submission.

1 per 1 Delivery to Project

Material Quality Assurance Processes

Soil Materials, Salvaged & Other Landscaping Soils

Soils and Aggregates Division

Source Level Materials	Specification	Comments
Salvaged or Existing Topsoil	920.01.01	Requires Nutrient Management Plan
Salvaged or Furnished Subsoil	920.01.03, 920.01.04	

Plant or Product Qualification

Review of Misc Production Location *Limited Producer Check*

General review of producer information. No production qualification required.

Production facility data maintained to track the material supply chain.

Address and low level information is maintained to provide data of facilities that produce materials in this category. Facilities that produce material in this category will be given a status of "Project Specific Review Required."

1 per 1 Prior to Source Request

Source Approval

Source Submission *Source of Supply Submittal*

A name and address of the material sources of supply shall be sent to MMD for review. The producer is the organization that creates the material, the supplier is the one that delivers it to the project.

Source of Supply Processing

1 per 1 Prior to Usage on Project

Material Production

SATD Material Review *Material Certification for Project Usage*

After the source letter has been approved, the Project Engineer shall contact the Soils and Aggregate Technology Division field team leader to sample the material from the material source for testing and approval. After the material has been tested a Form 27B and (when applicable) a nutrient management plan will be sent to the Project Engineer.

Project Engineer to contact SATD at least 30 days prior to material usage or placement. SATD will sample material at source, ensure material testing, and provide a Soil Test Report (Form 27B) and the Nutrient Management Plan.

Required for Salvaged Topsoils.

20 LB in a Soils Bag

Requirement waived if the quantity is less than 30 SY per project.

1 per 1 Prior to Usage on Project

Project Engineer to contact SATD at least 30 days prior to material usage or placement. SATD will sample material at source, ensure material testing, and provide a Soil Test Report (Form 27B).

Required for Subsoils, Furnished or Salvaged.

20 LB in a Soils Bag

Requirement waived if the quantity is less than 30 SY per project.

1 per 1 Prior to Usage on Project

Project Construction

Material Verification for SATD Materials *Material Verification*

The Project Engineer shall perform a visual inspection of the placed material to verify proper use and placement.

Project Engineer to verify material and submit the approved Form 27B to the Materials Management Division for clearance.

1 per 1 Item Completion