



OHIO DEPARTMENT OF TRANSPORTATION

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OAIMA Technical Session QA Program Past, Present, Future

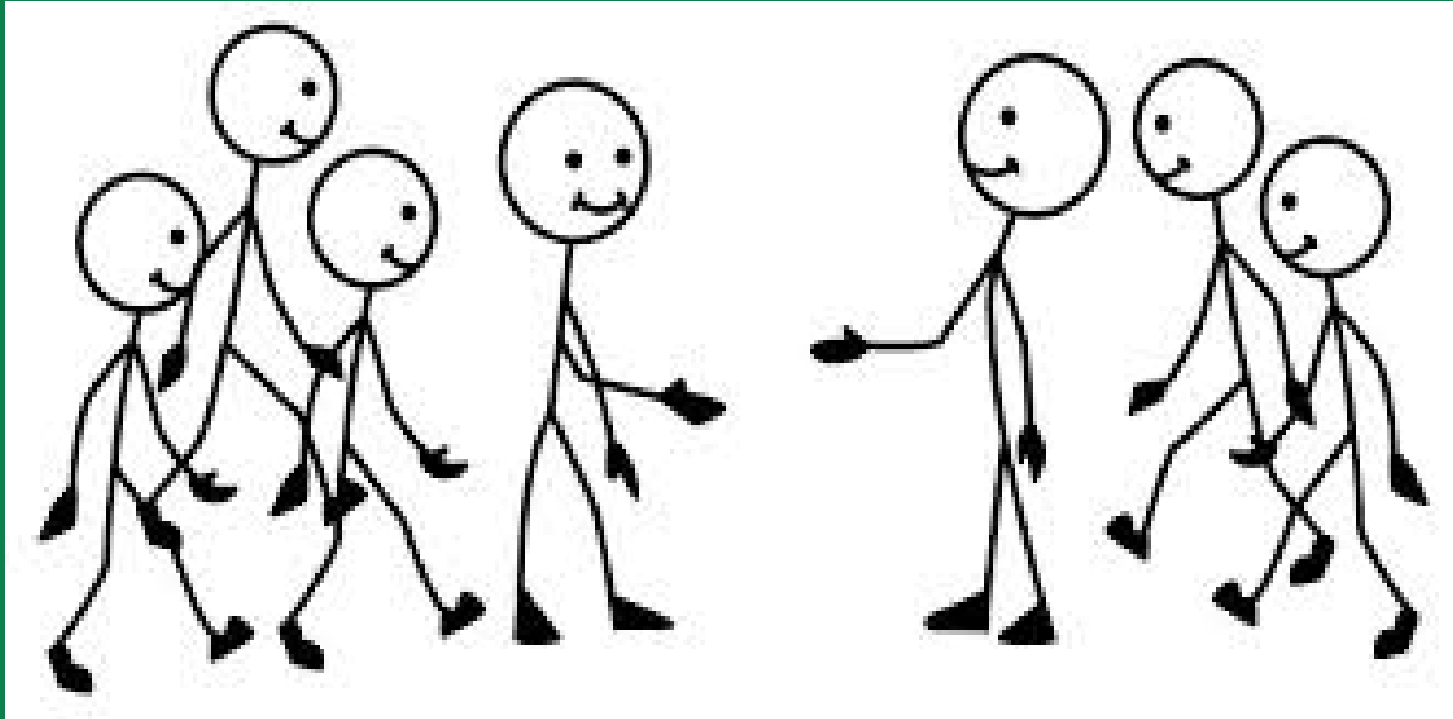
November 13, 2015

Items to Discuss

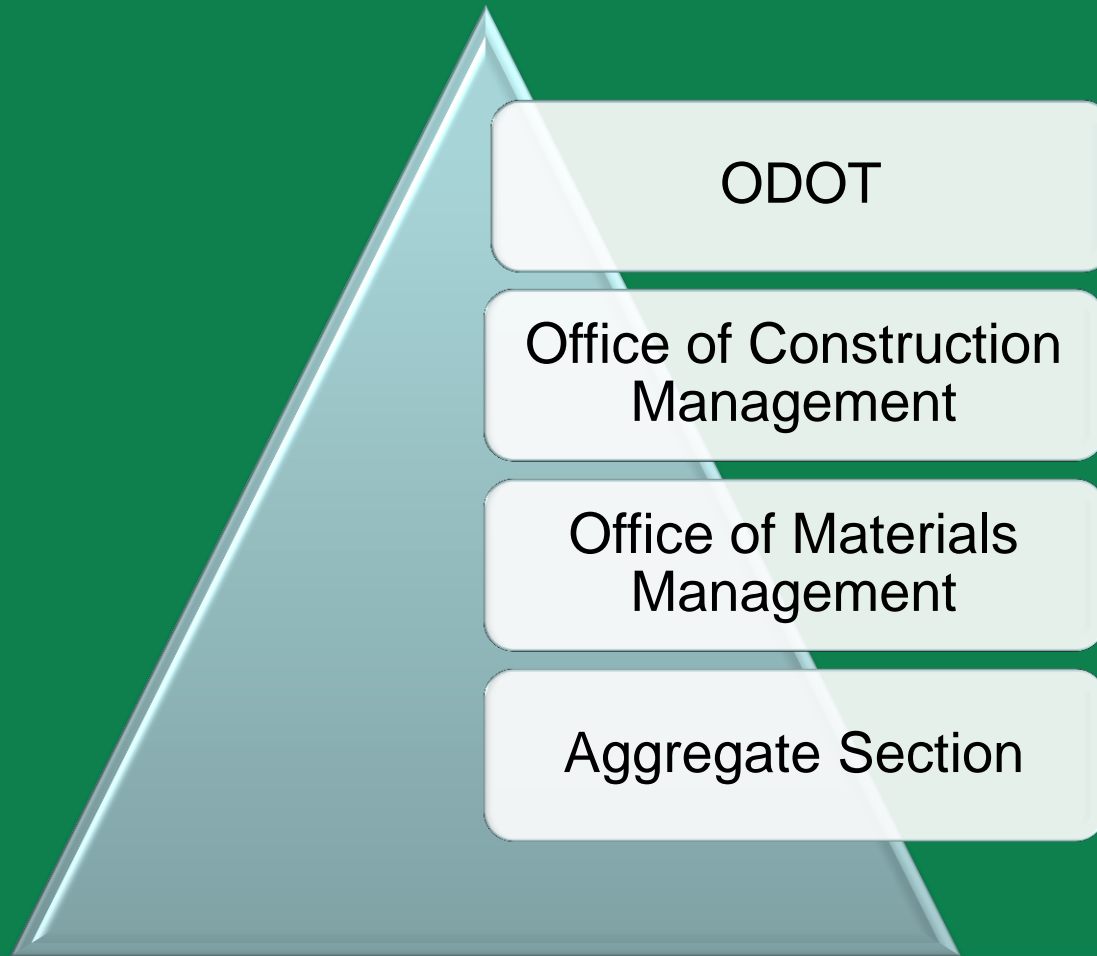
- Intro to the Aggregate Staff
- Organizational Structure
- Brief Background of Aggregate Certification at ODOT
- S1069 Program Breakdown & Challenges
- S1069 Improvement Proposals
- Web-Based QA/QC Status Update
- Deleterious Materials Review
- Q & A



Introductions



Office Structure



Management Structure



Brief Background of Agg Certification at ODOT

- ④ Central Laboratory at one time had 22 employees
 - Tested a lot of materials
 - Handled gradations & quality
- ④ Aggregate certification was handled through a grouping process and procedure
 - Early 1970's started with groups 1 & 2
 - Group 1 represented sources that had relatively consistent quality and were sampled/tested randomly 4 times a year
 - Group 2 represented new sources with no history and sources with inconsistent quality. Sampled, tested, and certified per 2600 ton quantity.
 - Group 0 came about in the 1980's and represented top quality sources and materials which we still sampled and tested 2/yr.



Development of a QA Program

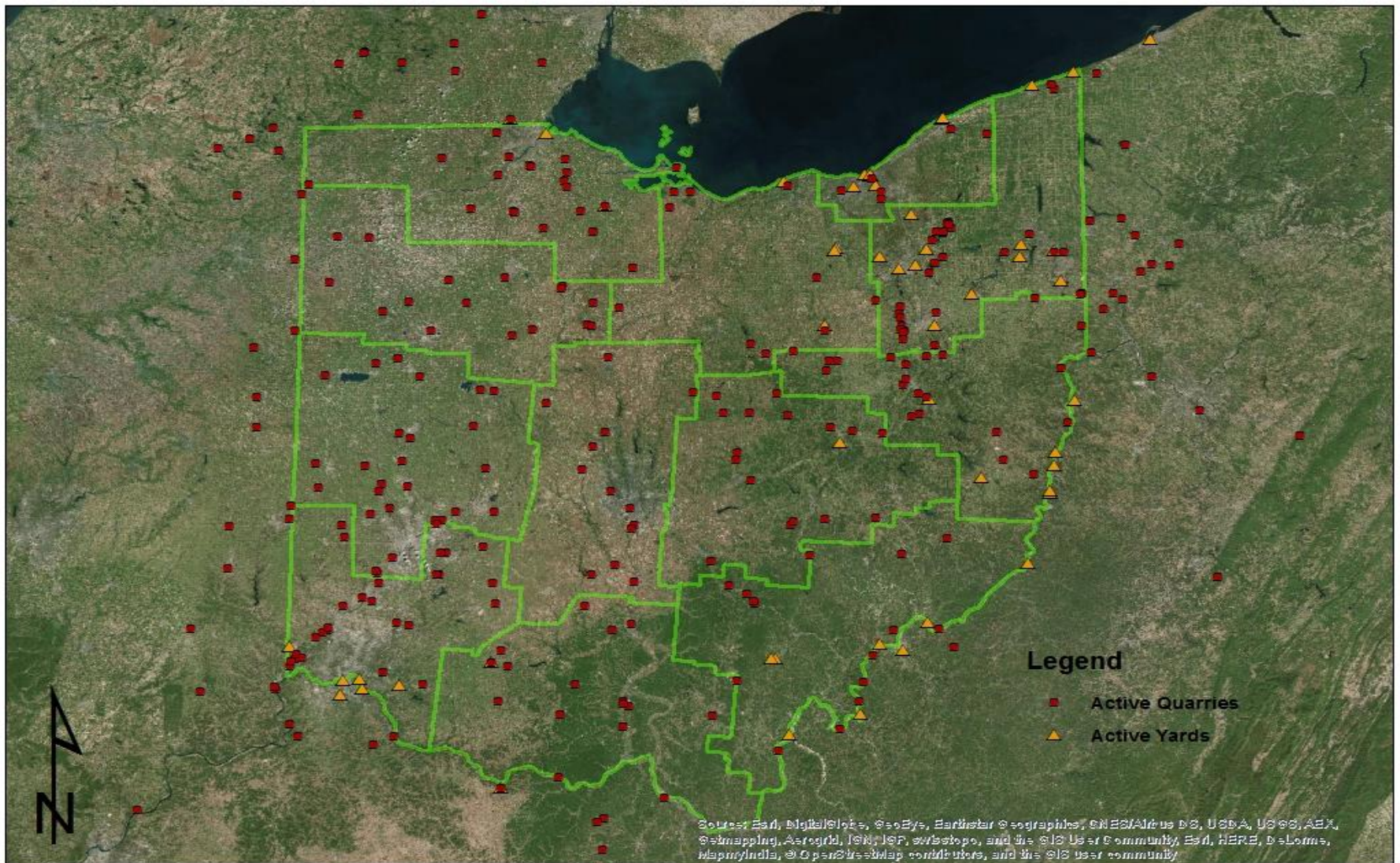
- S1069 began development around the early 2000's
 - Lloyd, Kerry Goodyear, and Industry partnered in development
- Why did we go this route?
 - It's a part of the Code of Federal Regulations (23 CFR 637.207)
 - Acceptance Program
 - IAS
 - Qualified Technicians
 - Staff reductions
 - Deviate from approving quantities of material
 - More ownership on the side of the contractor
- Goal: Is ensure (QC) and assure (QA) the quality and consistency of aggregate materials used in transportation Infrastructure.



Initial S1069 Program

- 🕒 Fairly similar to the program that we have today
- 🕒 Some differences
 - We used to have the districts sample all materials 4 times per year and testing ~6000 materials
 - They would test gradation & CTL would test the quality parameters as they were sent from the districts
 - Testing frequency seemed to be a remnant of the group 1 system
 - Staffing at CO was 9 with no field employees sampling
 - Due to funding shortfalls and a need to go “lean” a call was made for staff reductions
 - Thus a restructuring plan was hatched
 - Risk based approach with Geologist along with a reduction in sampling and testing





S1069 Producers and Suppliers-2015



Current S1069 Program

- ☉ QA/QC Program Split in to two main components
 - Pre-Qualification of Aggregate Producers and Suppliers
 - Based around qualified technicians, facilities, and procedures that are outlined in a yearly accepted QCP
 - QCP's are the foundation for our program and are essential for the QA/QC interaction
 - Material Certification
 - Split into two separate parameters by quality and gradation/consistency
 - Gradational aspects of the stone are monitored by our 12 districts aggregate personnel
 - Quality is monitored on an annual basis for all sources the same. Our goal with our current two field geologist is to obtain at least one sample of each certified material from each source once a year.

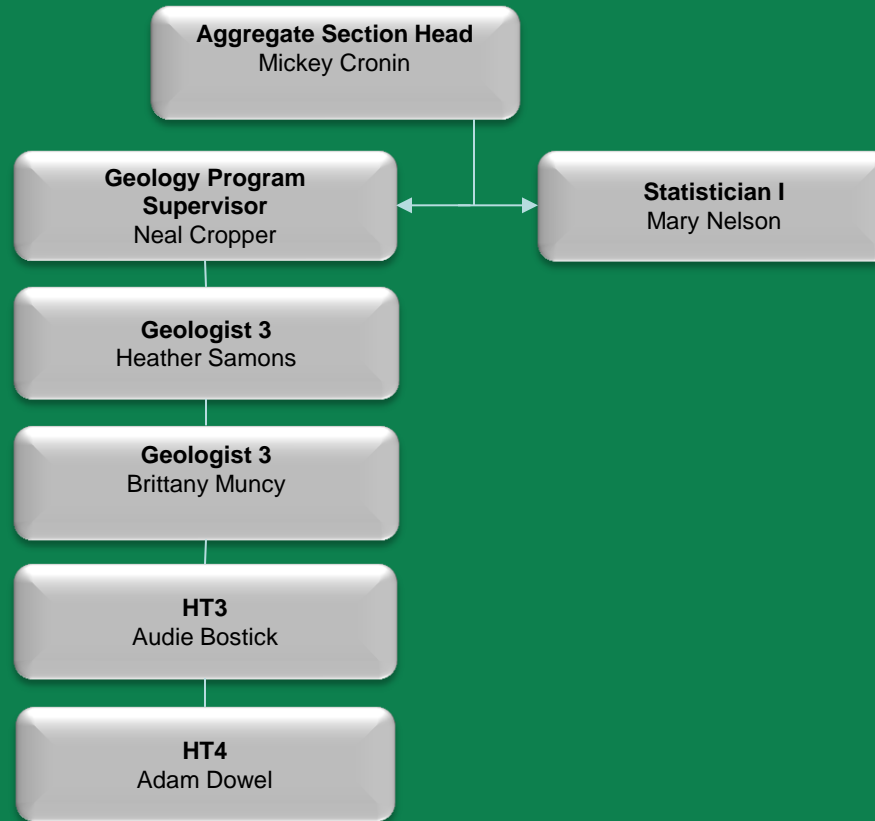


Rough Size of the Program

- ~350 Prequalified Producers and Suppliers of Materials
 - 300 Producers
 - 50 Suppliers
- Each Certified Material once per year testing ~1500 materials



Aggregate Section Structure



Areas to Fine Tune

- ⦿ Prequalification process (QCP Acceptance, Submittal, and review) is large and messy.
- ⦿ One QA sample + one data point per yr. = low resolution
 - QC data although not required helps bring us into focus
- ⦿ Marginal materials with respect to quality
- ⦿ Failing Material Resolution for Quality
- ⦿ Limited resources need to be used effectively and efficiently
 - Automation and simplification would help a bit
- ⦿ IAS and round robin program needs expanded upon to include more tests to check comparisons between QA/QC



QCP Challenges

- ⌚ There are a lot of you and a few of us responsible for reviewing and accepting these documents
 - Everyone has a different style or version
 - Issues are a follow up nightmare
 - Submittals happen all throughout the year or don't happen at all



Proposal for QCP Change

- S1069.08-1069.10 – Submittal, QCP, and Acceptance Requirements
 - S1069 Program Application Requirements
 - All Prequalification and Quality Control Plan documentation will only be accepted utilizing standardized forms
 - All documentation due within the first ¼ of the year
 - 30 days to correct issues upon notification
 - Types of forms that would be made available
 - Application for Pre-Qualification
 - QCP information –1069.09 requirements
 - Renewal for Pre-Qualification
 - Addenda
 - What forms will we have to fill out if we are prequalified?



Prequalification Application Preview



Microsoft Word
Document



QCP Form Preview



Microsoft Word
Document



QCP's Cont..

- ④ How will they be accepted for submittal?
 - Standard mailbox set up on the website similar to concretes for JMF submittals
 - Email
 - Standard mail
 - Web-Based System?



Certified Defined

- ④ Definition of Certified per Webster:
 - having met the official requirements that are needed to do particular type of work
 - officially approved as having met a standard
 - real or genuine



Certified Materials Process Defined

- Initial certification process:
 - Documentation and notification are submitted via QCP to the Home District and OMM Aggregate Section
 - Quality test results are submitted providing an initial snapshot of quality
 - An initial QC/QA PWL is created consisting of 10 tests
 - Upon QA sampling for grades the districts send ODOT samples for QA qualities
 - Once all testing is complete a final review is completed and upon satisfactory review certification is granted
- How do we maintain or Re-Certify our aggregates?
 - This is done through our site visit sampling and testing program where we attempt to sample and test all certified materials once per year.



Quality Assurance Per 1069.15

- ⦿ As stated before the current S1069 QA program is split between gradation and quality.
- ⦿ 1069.15.B states: The Laboratory will obtain random QA samples for each prequalified aggregate size covered by this program. The Laboratory will ensure materials **consistently** meet the Department's material specifications for quality. Failure to maintain consistent aggregate quality conforming to 703 will result in loss of prequalification for that product.
- ⦿ Failing material resolution section is well defined for materials failing to meet gradation. However, not at all defined for material failing quality. This makes it very difficult to handle sources of material that marginally or inconsistently meet our specifications.



Proposal and Ideas

- ④ Define a failing material resolution for qualities that includes the following:
 - A plan for notification and exchange of QA/QC data
 - A process for re-sampling
 - A process for dealing with multiple failing tests over time
- ④ Define a system to handle marginal materials and materials that have failed specification
 - Move to a PWL type acceptance with a 90% criteria for all quality parameters that are defined as marginal
 - Initial QC/QA PWL would follow similar scheme as gradation (min 8QC+2QA) upon start up with quantity set at a minimum 2600 ton
 - A suspension system for materials failing consecutive QA test results between random and standard checkpoints



Other Options

- ④ Blend materials to improve deficiencies
- ④ Selectively mine, produce, and stockpile for certain specifications
- ④ Abandon a particular certification



Some Goals for Material Certification

- ④ Maintain consistent practices at all levels from sampling & testing to certification procedures
- ④ Provide an avenue for the use and certification of marginal materials where appropriate
- ④ Avoid a yearly “ping pong” match with Certification of materials
- ④ Certify materials with a high level of confidence by leveraging our combined QA/QC resources efficiently and effectively
- ④ Utilize the best possible locally available aggregates



A Few Other Areas of S1069 to Fine Tune

- ④ Define and give some examples of major changes that may affect quality and consistency
- ④ Suppliers/Yards/Out of State Sources will be defined separately in 1069.09
 - Slightly reduced sample & testing frequencies
 - A call for maintaining documentation of materials from original producer through shipment
 - Handling and documentation procedures unique to a yard



Goals for S1069 Changes

- Standardized Forms – January 2016
- Major Changes Defined – January 2016
- New Yard Language – January 2016
- Failing Material Resolution for Quality 2016
- Plan for Marginal Materials 2016



Other Points of Interest

- Web-Based QA/QC Project

- Specific Gravity List

- Visit to Central Test

- Current Round Robins

