September 27, 2023
Meeting – Density Subcommittee

Location: Truax Antigo Conference Room / Teams Meeting

Date: September 27, 2023

Time: 9:00 am to 11:00 pm

Attendance

Members:

Bureau of Technical Services (BTS):

- ☑Ali Arabzadeh – HMA Supervisor
- ☑ Dan Kopacz – Asphalt Products Engineer
- ☑ Brian Jandrin –Nuclear Program Specialist (RSO)
- ☑ Albert Kilger – HMA Engineer – Consultant

Subject Matter Experts:

- ☑ Jon Wixom – Rock Road
- ☑ David Hose – Mathy
- ☐ Deb Schwerman – Wisconsin Asphalt Pavement Association
- ☑ Zach Lemke – Stark Corp
- ☑ Neal Atanasoff – Walbec Group
- ☑ Justin Hoffman – Pitlik and Wick
- ☐ Tim Hendrickson – Murphy Inc
- ☑ Bill Adair – MTE Services
- ☑ Jeremy Barron – Walbec Group
- ☑ Joe Kyle – Mathy

Optional Attendance

Northcentral Region (NC):

- ☑ Steven Hunter – Independent Assurance, Rhinelander
- ☑ Brent Ferguson – Independent Assurance, Wisconsin Rapids

Northeast Region (NE):

- ☐ Jamie Cynor – Independent Assurance
- ☑ Bryce Cibulka – Independent Assurance

Northwest Region (NW):

- ☐ Tom Portman – Independent Assurance, Eau Claire
- ☐ Tom Rossmann – Independent Assurance, Superior

Southeast Region (SE):

- ☑ Jeff Bruesewitz – Independent Assurance, Mega
- ☑ Suzan Rolbiecki – Independent Assurance

Southwest Region (SW):

- ☑ Steve Ames – Independent Assurance, La Crosse
- ☐ Jeanette Frazer – Independent Assurance, La Crosse
- ☑ Scott Syron – Independent Assurance, Madison
- ☐ Matt Platt – Independent Assurance, Madison

Guests –

Agenda Items

1. **Welcome and Introductions – Brian Jandrin**
    a. Recording of Meeting
    b. Role call of Attendees:

2. **Non-Nuclear Devices**
    a. David Hose presentation of PQI Data Collected
        i. Project 1: STH 65, 52,000 T of 4 MT. Core only.
        ii. Project 2: STH 35, 18,000 T of 5 MT over CIR.
        iii. R2 may be low when spread of data is small. Once outside of the range in the correlation, gauge could estimate high or low, depending on the slope.
        iv. Underlying material had a large influence on gauge readings. Surface imperfections had a big influence.
        v. Tests take less than 30 seconds to complete.
        vi. Need additional research into the variability. Also, for future investigations, we should try to get nuclear gauges and non-nuclear gauge readings around the same time without much delay between methods.
        vii. Offsets seem to be attributable to the types of aggregates, their moisture levels and their conductivity used in the mix.
    b. Other discussion from contractor's that collected data
        i. Analysis not completed yet but having good success so far using a PQI.
3. **PWL Updates**
    a. D Kopacz update/discussion
        i. Gmm from test strip doesn't match the mix design. If this occurs, some changes are made to the mix and test batches made to verify requirements are met. This can affect density analysis since the Gmm used is the 4-point running average, or the average of the 3 tests from the test strip.
            - David H.: We shouldn't be using yesterday's Gmm value. May make a blend change which would affect the mix. If we use Gmm of the day, the results will be more accurate.
            - Dan K.: How would we handle day to day like when 3% below the minimum. Need an accurate Gmm to make these decisions in the field. May not have the daily Gmm yet.
            - Justin H.: Could do average of 2.
        ii. Footprint testing for the first 10 shots.
            - Footprint testing should also be done when individual density tests are less

than 0.5% above the lower limit.

- Neal A.: Should this be done with LJD as well?
  - Dan K.: Mainline only but can also be done on the LJD.

iii. Dispute coring for any lot in penalty.

- **Action Item**: Allow dispute coring anytime the lot is in penalty. Still would penalize if the pay factor does not improve.
- Issues with where QV data gets entered with QC data sometimes depending on how much is paved in a day and where the random numbers fall.

iv. Reminder: Monitor temperatures in core dry.

v. Clarification: Surface layer over CIR is still 93.0% minimum density. Only lower layers over CIR. This is clarified in the spec reorg version of the spec.

vi. Coring the next day for a test strip is not allowed in the spec.

- If mix needs time to set properly, we may allow up to 24 hours for coring. Nuclear measurements still need to be taken immediately before coring.

4. Density Program updates

a. A Kilger update/discussion

i. Gauge Comparison for PWL?

- Neal A.: Could make it optional for the contractor. There is less of a need for comparison because of all the tools (dispute, correlation, F&t, footprints) available with PWL density.

5. Density Offsets

a. Discussion (Gauge Offsets WISDOT Blocks +/- ??)

i. Brian J.: When a gauge is flagged as suspect, at what point do we rerun the gauge over the WisDOT blocks?

- Scott S.: Will compare with the in the field with his gauge. If not within the allowable difference, then has them run the gauge over the block, and if its not within 1.0pcf, adjusts the gauge.

6. Other Issues

a. BTS Concrete Calibration Blocks

i. Staying in Green Bay for another year.

b. Gauge offsets

i. What is the history of the 1.0- and 1.5-foot offset from the confined/unconfined edge?

- Has been standard of practice for some time.
- Concerns with shoving of material on edge and over-compacting at the time.
  - Less of a concern now with NWJ.
  - We now test joints in this area.

c. Cannot test the first 20 feet from transverse joint.

i. Ali A.: Can we change this from 20 feet to 1 foot? The odds of the area being tested is very low.

- Industry thinks this could be aggressive. Maybe cut it in half?
- Consider the size of the roller as well.
- Will discuss at full HMA Tech Team meeting.

Action Items – NEW

1. Allow dispute coring anytime the lot is in penalty. Still would penalize if the pay factor does not improve.
2.

Action Items – OLD

1. None

Action Items – Long Term / Idea Reminders

1.

2.

Upcoming Meetings

2023		