INFORMATION REDACTED PURSUANT TOTHE FREEDOM
OF INFORMATION ACT (FOIA), 5 U.S.C.552(B)(6)

North American Subaru, Inc.
One Subaru Drive
Camden, NJ 08103
856-488-8500
[redacted]

July 18, 2022
Ref. No.: FSG22-004.1

Dr. Stephen A. Ridella
Director, Office of Defects Investigation
Office of Defects Investigation
1200 New Jersey Avenue SE,
Washington, D. C. 20590

RE: NEF-102pub/ EA21-002

Dear Dr. Stephen Ridella,

Please see the following response to your letter dated May 23, 2022 regarding an Engineering Analysis (EA21-002) to investigate whether a safety defect related to propellant degradation exists in non-recalled desiccated phase-stabilized ammonium nitrate ("PSAN") frontal air bag inflators manufactured by Takata in certain vehicles.

If you need any additional information or have any questions, please do not hesitate to contact me at (856) 488-3476.

[redacted]
Nick Aplin
Manager, Field Safety and Compliance
Subaru of America, Inc.

1. **State, by model and model year, the number of subject vehicles (excluding vehicles remedied under a subject recall action) Subaru has manufactured for sale or lease in the United States. Separately, for each subject vehicle manufactured to date by Subaru, state the following**
    - **a.** Make;
    - **b.** Model;
    - **c.** Model year;
    - **d.** Module position (Driver or Passenger)
    - **e.** Inflator prefix;
    - **f.** Inflator type;
    - **g.** Main propellant (2004 or 2004L);
    - **h.** Desiccant type;
    - **i.** Booster material; and
    - **j.** Auto-Ignition material.

A pre-formatted data collection file, in which you should submit your response, will be provided for you.

Response: Please see "EA21_002_SUBARU.xlsx".

2. **For all subject vehicles identified in Request No. 1, provide the following information.**
    - **a.** Vehicle identification number (17-character VIN);
    - **b.** Make;
    - **c.** Model;
    - **d.** Model year;
    - **e.** Date of manufacture (MM/DD/YYYY); and
    - **f.** The state (postal abbreviation) in the United States including, but not limited to, the District of Columbia, and current U.S. territories and possessions where the vehicle was originally sold or leased, or delivered for sale or lease.

Provide the table in Microsoft Access 2010, or a compatible format, entitled "PRODUCTION DATA."

Response: Please see "PRODUCTION DATA.accdb".

3. **Provide the following information for each subject recall action conducted by Subaru in the United States, including, but not limited to, the District of Columbia, and current U.S. territories and possessions. Separately, for each subject recall action to date, state the following:**
    - **a.** Make;
    - **b.** NHTSA recall ID;
    - **c.** Recall status active (Yes) or closed/superseded (No);
    - **d.** Remedy inflator group ID;
    - **e.** Number of remedy repairs performed using the subject component; and
    - **f.** Subject component currently being used for remedy repairs (Yes or No).

A pre-formatted data collection file, in which you should submit your response, will be provided to you.

Response: Please see "EA21_002_SUBARU.xlsx". Subaru has no subject recall action(s) in the United States.

4. **For each remedy inflator group identified in Request No. 3, provide the following information.**
    - **a.** Remedy inflator group ID;
    - **b.** Module position (Driver or Passenger);
    - **c.** Inflator prefix;
    - **d.** Inflator type;
    - **e.** Main propellant (2004 or 2004L);
    - **f.** Desiccant type;
    - **g.** Booster material;
    - **h.** Auto-Ignition material; and
    - **i.** Total number of inflators that were purchased.

A pre-formatted data collection file, in which you should submit your response, will be provided to you.

Response: Please see "EA21_002_SUBARU.xlsx". Subaru did not identify any subject recall action(s) in response to Request No. 3.

5. **List all reports and/or allegations of a field rupture of the subject component. For each reported allegation, provide:**
    - **a.** Make;
    - **b.** Model;
    - **c.** Model year;
    - **d.** Vehicle identification number (17-character VIN);
    - **e.** State;
    - **f.** Vehicle build date;
    - **g.** Module position (Driver or Passenger);
    - **h.** Inflator serial number;
    - **i.** Inflator build date;
    - **j.** Inflator type;
    - **k.** Incident date;
    - **l.** Description of incident;
    - **m.** Injury (Yes/No);
    - **n.** Fatal (Yes/No); and
    - **o.** Description of injuries.

Provide the table in Microsoft Access 2010, or a compatible format, entitled "REQUEST NUMBER FIVE DATA."

Response: [Redacted]

6. **List all past, currently active, and/or any planned future field collection activities conducted/being conducted/to be conducted by or on behalf of Subaru of the subject component. Separately, for each field collection activity conducted to date, provide the following information.**
    - **a.** Any entities that assisted with the field collection activity;
    - **b.** All make, model, model year vehicles included in the field collection activity;
    - **c.** Inflator type(s);
    - **d.** Inflator prefix(s);
    - **e.** Geographic area of collected parts;
    - **f.** Field age range of collected parts;
    - **g.** Number of parts targeted;
    - **h.** Number of parts collection; and
    - **i.** Rationale for selecting targeted population. (i.e. investigating field incident, abnormal laboratory test result, legal claims, production quality concerns, etc.)

Response:

6.
Subaru is an active and participating member in the Independent Testing Coalition ("ITC"). As outlined in the response to Request No. 6 located on Page 1 of Appendix A - Summary of Independent Testing Coalition Activities: "there have been two major collection, testing, analysis and service life activities." Healthy Collection 1 ("HC1") initiated in 2015 and was documented with two reports from Northrop Grumman Corporation ("NGC") in 2019 and reports from TK Global ("TKG"). Healthy Collection 2 ("HC2") was a specifically targeted collection intended to serve as an update and validation of the prediction model (including the safe service life data) developed by NGC on behalf of the ITC.

[Redacted]

6.a. – 6.h.
Please see Appendix A – Summary of Independent Testing Coalition Activities for details regarding HC1 and HC2.

6.i.
As outlined in the response to Request No. 6i located on Page 3 of Appendix A - Summary of Independent Testing Coalition Activities: "This large field collection effort, HC1, was designed to cover the majority of desiccated inflator families that had been produced (breadth). It was large enough to be statistically relevant (depth). The seven inflators selected for the NGC effort were selected to provide broad coverage of the Takata PSAN inflators, undesiccated and desiccated, used by members of the ITC to that date. The information available at that time had the seven selected inflators covering 58% of all Takata PSAN inflators with the specific inflator type and over 85% including closely related types."

As outlined in the response to Request No. 6i located on Page 4 of Appendix A - Summary of Independent Testing Coalition Activities: "This ITC focused effort in HC2 required a modest number of inflators that would supplement the data already collected to achieve the desired goal. Three inflators, PSPI-X VQ, PSDI-X UD and PSDI-X SU, were involved. This healthy inflator field collection matches the effort that was recommended in this quote for further testing of the younger, desiccated 2004L

propellant-based inflators. The specific inflators selected where chosen because they are the same types (PSPI-X and PSDI-X) that were in the HC1 study and are broadly representative of desiccated 2004L-based inflators. There are both passenger and driver inflators. These inflators use both 3110 and AIB as the booster composition. These inflators are found in smaller vehicles (temperature band T3, the hottest). These vehicles were sold in sufficient numbers in the desired Zone 1 area for a collection to be feasible. These inflators are particularly significant because they represent testing with the largest number of years in the field."

Please see Appendix A – Summary of Independent Testing Coalition Activities for additional details regarding HC1 and HC2.

7. **List all past, currently active, and/or any planned testing and analysis activities conducted/being conducted/to be conducted by or on behalf of Subaru of the subject component. Separately, for each testing and analysis activity conducted to date, provide the following information.**
    - **a.** All parties, including third parties, involved with the identified testing activity.
        i. A description of each party's role in the identified testing activity.
    - **b.** All field collection activity(s) associated with each testing activity.
    - **c.** Details on laboratory testing associated with each testing activity, including but not limited to:
        i. Use of field collected or specifically prepared (not production units) inflators;
        ii. All dissection and internal inflator component analysis;
        iii. All ballistic testing including any propellant burn rate analysis;
        iv. All accelerated exposure testing (e.g., chamber cycling);
        v. All controlled field exposure testing (e.g., parking lot exposure); and
    - **d.** Any interim or final reports/results generated from the testing activity.

Response:

7.
Subaru is an active and participating member in the Independent Testing Coalition ("ITC"). As outlined in the response to Request No. 7 beginning on Page 5 of Appendix A - Summary of Independent Testing Coalition Activities: "…there have been two major collection, testing, analysis and service life activities."

7.a. – 7.d.
Please see Appendix A – Summary of Independent Testing Coalition Activities for details regarding HC1 and HC2.

8. **Provide the current service life estimate for each subject component (listed by inflator prefix) identified in response to Requests No. 1 and No. 4. For each service life estimate provided, include the following.**
    - **a.** A detailed description of the data, report, test activity, predictive modeling, or other information and analysis that provides the basis for the estimate.
    - **b.** A detailed description of all current and/or planned testing, analysis, and/or predictive modeling activities being conducted for the purpose of establishing or updating your understanding of the service life of the subject component. Your description should include, but not be limited to:
        - **i.** All controlled field exposure testing (e.g., parking lot exposure); and
            1. The identification of all parties, including third parties, involved with the identified activity, including a description of each party's role in the identified activity.
            2. The actual or planned start date and end date for each identified activity.
            3. The identification and description of specific activities associated with each service life estimate determination

Response:

8.
[Redacted]

8.a.
[Redacted]

Please see Appendix A – Summary of Independent Testing Coalition Activities for additional details regarding HC1 and HC2 in response to Request No 8.a.

8.b.
[Redacted]

Please see Appendix A – Summary of Independent Testing Coalition Activities for additional details.

9. **For any inflator types identified in response to Requests No. 1 and/or No. 4, state whether you have or are developing a program to replace the inflators in subject vehicles. If yes, identify for which inflator type(s), the status of the program, and projected completion of each program.**

Response:

[Redacted]