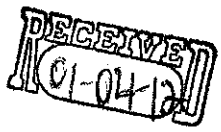
BMW Group

December 22, 2011

Frank Borris
Director, Office of Defects Investigation
National Highway Traffic Safety Administration
1200 New Jersey Ave., S.E.
Washington, DC 20590



Re: EA11-003 (Peer Review)

Dear Mr. Borris:

With this letter, BMW is responding to NHTSA's Peer Review Information Request dated October 7, 2011 in the above captioned matter. As agreed with the agency, BMW would be responding to Questions 11 through 19 by December 22, 2011. Accordingly, the materials contained herein are BMW's response to Questions 11 through 19 of the Peer Review Information Request.

As requested, BMW has repeated each question verbatim and provided our response accordingly. Our detailed responses are contained in the attachments.

Because a portion of our response to Questions 11 through 19, specifically CD No. 2, is considered by BMW to be confidential, it is not being submitted to your office. Rather, as instructed, CD No. 2 is being submitted to the Office of Chief Counsel, along with information supporting our request for confidentiality.

We are attaching to this letter the non-confidential portion of our response, CD No. 1 (Rev. 1). CD No. 1 (Rev. 1), an update from our December 9th response, includes files responsive to Questions 11 through 19, which are specifically contained in folder Rev. 1 on the CD.

Should you have any questions pertaining to the information enclosed with this letter, please contact me at (201) 571-5360, or Martin Rapaport of my staff at (201) 571-5208.

Sincerely,

Jan Urbahn
General Manager
Safety Engineering & Intelligent Transportation Systems

Attachment:

CD No. 1 (Rev. 1)

Cc:

K. Vincent, NHTSA, Office of Chief Counsel (Letter only)

Company
BMW of North America, LLC

BMW Group Company

Mailing address
PO Box 1227
Westwood, NJ
07675-1227

Office address
300 Chestnut Ridge Road
Woodcliff Lake, NJ
07677-7731

Telephone
(201) 307-4000

Fax
(201) 571-5479

Website
bmwusa.com

BMW Response
to
NHTSA EA11-003
9 Dec 2011
(Questions 1 – 10)

1. **State, by peer vehicle model year, model, and engine the number of peer vehicles BMW has manufactured for sale or lease in the United States. Separately, for each peer vehicle manufactured to date by BMW, state the following:**

   a. **Vehicle identification number (VIN);**
   b. **Model;**
   c. **Model Year;**
   d. **Date of manufacture;**
   e. **Date warranty coverage commenced; and**
   f. **The State in the United States where the vehicle was originally sold or leased (or delivered for sale or lease).**

   Provide the table in Microsoft Access 2007, or a compatible format, entitled "PRODUCTION DATA." See Enclosure 1, Data Collection Disc, for a pre-formatted table which provides further details regarding this submission.

   Response:

   The source of this information is our vehicle production database and is current as of 22 November 2011.

   The number of peer vehicles BMW has manufactured for sale or lease in the United States by Model and Model Year is contained in Table 1.

Model	Model Year	US Production
335d	2009	1,104
335d	2010	1,732
335d	2011	7,043
X5 xDrive35d	2009	2,767
X5 xDrive35d	2010	4,934
X5 xDrive35d	2011	10,445
X5 xDrive35d	2012	1,963

Table 1.

   Attachment "EA11-003 PRODUCTION-DATA" on CD No. 1 contains the requested information. The attachment includes VINs which do not have a US state of sale; however, we are including them as they were produced for sale or lease in the United States. Both the BMW 335d and the X5 xDrive35d are equipped with the "M57Y" 3.5 liter engine.

2. **State, by model and model year the number of each of the following received by BMW or of which BMW is otherwise aware, which relate to, or may relate to, instances of the subject condition in the peer vehicles; including subtotals for the numbers alleging subject component failure and the numbers alleging engine stall occurred:**

   a. **Consumer complaints, including those from fleet operators;**
   b. **Field reports, including dealer field reports;**
   c. **Reports involving a crash, injury, or fatality, based on claims against the manufacturer involving a death or injury, notices received by the manufacturer**

alleging or proving that a death or injury was caused by a possible defect in a peer vehicle, property damage claims, consumer complaints, or field reports;

d. Property damage claims;

e. Third-party arbitration proceedings where BMW is or was a party to the arbitration; and

f. Lawsuits, both pending and closed, in which BMW is or was a defendant or codefendant.

For subparts "a" through "d" state the total number of each item (e.g., consumer complaints, field reports, etc.) separately. Multiple incidents involving the same vehicle are to be counted separately. Multiple reports of the same incident are also to be counted separately (i.e., a consumer complaint and a field report involving the same incident in which a crash occurred are to be counted as a crash report, a field report and a consumer complaint).

In addition, for items "c" through "f," provide a summary description of the alleged problem and causal and contributing factors and BMW's assessment of the problem, with a summary of the significant underlying facts and evidence. For items "e" and "f," identify the parties to the action, as well as the caption, court, docket number, and date on which the complaint or other document initiating the action was filed.

Response:

The source of this information is our customer contact database (current as of 5 December 2011), various field report databases (current as of 1 December 2011), and certain legal databases (current as of 2 December 2011).

The number of reports, if any, by category, that may relate to the subject condition in the peer vehicles is provided in Table 2. Table 2 also includes the number of reports, if any, in which an allegation, of the type noted in 2(c), is contained within the specific report in that category.

As requested, for each category, subtotals are also included for the numbers alleging subject component failure and the numbers alleging engine stall.

Category	Number	Subtotal Alleging Subject Component Failure	Subtotal Alleging Engine Stall	Number Including Allegation of Crash	Number Including Allegation of Injury	Number Including Allegation of Fatality
Consumer Complaints	10	6	1	0	0	0
Field Reports	1	0	0	0	0	0
Dealer Field Reports	3	1	2	0	0	0
Property Damage Claims	0	0	0	0	0	0
Third-Party Arbitration Proceedings	0	0	0	0	0	0
Lawsuits	0	0	0	0	0	0

Table 2.

3. Separately, for each item (complaint, report, claim, notice, or matter) within the scope of your response to Request No. 2, state the following information:

a. BMW file number or other identifier used;
b. The category of the item, as identified in Request No. 2 (i.e., consumer complaint, field report, etc.);
c. Vehicle owner or fleet name (and fleet contact person), address, and telephone number;
d. Vehicle's VIN;
e. Vehicle's model and model year;
f. Vehicle's mileage at time the subject condition was observed or occurred (incident);
g. Incident date;
h. Report or claim date;
i. Whether failure or malfunction of the subject component is alleged; ;
j. Whether fuel quality concerns are cited as an actual or potential cause or contributor;
k. Whether an engine stall is alleged;
l. Whether a crash is alleged;
m. Whether property damage is alleged;
n. Number of alleged injuries, if any; and
o. Number of alleged fatalities, if any.

Provide this information in Microsoft Access 2007, or a compatible format, entitled "REQUEST NUMBER TWO DATA." See Enclosure 1, Data Collection Disc, for a pre-formatted table which provides further details regarding this submission.

Response:

The source of this information is our customer contact database (current as of 5 December 2011), various field report databases (current as of 1 December 2011), and certain legal databases (current as of 2 December 2011).

Attachment "EA11-003-REQUEST-NUMBER-TWO-DATA" on CD No. 1 contains the requested information. Separate tabs are provided for the consumer complaints, the one field report, and the three dealer field reports.

The consumer complaint codes and code descriptions utilized in the search are contained in Table 3.

Consumer Complaint Code	Code Description
1061	Engine – Fuel Quality
1106	Engine Dies
1601	Fuel Supply System – Fuel Pump
1615	Fuel Tank – Diesel Nozzle Will Not Fit In Tank
AI54	Campaign # 10E-A01 – (MY 2007 –- 2010) N54 Engine – High Pressure Fuel Pump
FN01	N54 High Pressure Fuel Pump Warranty Extension

Table 3.

The field report, and dealer field report codes and code descriptions utilized in the search are contained in Table 4.

Field Report / Dealer Field Report Code	Code Description
1311	Fuel Supply and Fuel Additives
1363	Fuel Pump Relay / Fuel Pump Relay Module
1614	Fuel Pump, Transfer Pump, Gauge Sending Unit

Table 4.

4. **Produce copies of all documents related to each item within the scope of Request No. 2. Organize the documents separately by category (i.e., consumer complaints, field reports, etc.) and describe the method BMW used for organizing the documents.**

   Response:

   The source of this information is our customer contact database (current as of 5 December 2011), various field report databases (current as of 1 December 2011), and certain legal databases (current as of 2 December 2011).

   Attachment "EA11-003 CONSUMER-COMPLAINTS-Q4" on CD No. 1 contains copies of the consumer complaints. The consumer complaints are arranged chronologically by report or claim date.

   Attachment "EA11-003 FIELD-REPORT" on CD No. 1 contains a copy of the one field report.

   Attachment "EA11-003 DEALER-FIELD-REPORTS" on CD No. 1 contains copies of the three dealer field reports. Each dealer field report is a separate file.

5. **State, by peer vehicle model year, model, and engine the number of each of the following, received by BMW, or of which BMW is otherwise aware, which relate to, or may relate to, acknowledged incidents of misfuelling in the peer vehicles (e.g., requests for technical assistance related to repair procedures):**
   a. **Consumer reports, including those from fleet operators;**
   b. **Field reports, including dealer field reports;**
   c. **Reports involving a crash, injury, or fatality, based on claims against the manufacturer involving a death or injury, notices received by the manufacturer alleging or proving that a death or injury was caused by a possible defect in a peer vehicle, property damage claims, consumer complaints, or field reports; and**
   d. **Property damage claims.**

   For subparts "a" through "d" state the total number of each item (e.g., consumer complaints, field reports, etc.) separately. Multiple incidents involving the same

vehicle are to be counted separately. Multiple reports of the same incident are also to be counted separately (i.e., a consumer complaint and a field report involving the same incident in which a crash occurred are to be counted as a crash report, a field report and a consumer complaint).

Response:

The source of this information is our customer contact database (current as of 5 December 2011), various field report databases (current as of 1 December 2011), and certain legal databases (current as of 2 December 2011).

The number of reports, if any, by category, that may relate to acknowledged incidents of misfuelling in the peer vehicles is provided in Table 5. Table 5 also includes the number of reports, if any, in which an allegation, of the type noted in 5(c), is contained within the specific report in that category.

Category	Number	Subtotal Alleging Misfuelling	Number Including Allegation of Crash	Number Including Allegation of Injury	Number Including Allegation of Fatality
Consumer Complaints	1	1	0	0	0
Field Reports	0	0	0	0	0
Dealer Field Reports	0	0	0	0	0
Property Damage Claims	0	0	0	0	0

Table 5.

6. **Separately, for each item (complaint, report, claim, notice, or matter) within the scope of your response to Request No. 5, state the following information:**
   a. **BMW file number or other identifier used;**
   b. **The category of the item, as identified in Request No. 2 (i.e., consumer complaint, field report, etc.);**
   c. **Vehicle owner or fleet name (and fleet contact person), address, and telephone number;**
   d. **Vehicle's VIN;**
   e. **Vehicle's model and model year;**
   f. **Vehicle's mileage at time of incident;**
   g. **Misfuelling incident date;**
   h. **Report or claim date;**
   i. **Whether failure or malfunction of the subject component is alleged;**
   j. **Whether an engine stall is alleged;**
   k. **Whether a crash is alleged;**
   l. **Whether property damage is alleged;**

m. Number of alleged injuries, if any; and
n. Number of alleged fatalities, if any.

Provide this information in Microsoft Access 2007, or a compatible format, entitled "MISFUELLING DATA." See Enclosure 1, Data Collection Disc, for a pre-formatted table which provides further details regarding this submission.

Response:

The source of this information is our customer contact database (current as of 5 December 2011), various field report databases (current as of 1 December 2011), and certain legal databases (current as of 2 December 2011).

Attachment "EA11-003-MISFUELLING DATA" on CD No. 1 contains the requested information.

The consumer complaint codes and code descriptions utilized in the search are contained in Table 3. The field report, and dealer field report codes and code descriptions utilized in the search are contained in Table 4.

7. Produce copies of all documents related to each item within the scope of Request No. 5. Organize the documents separately by category (i.e., consumer complaints, field reports, etc.) and describe the method BMW used for organizing the documents.

Response:

The source of this information is our customer contact database (current as of 5 December 2011), various field report databases (current as of 1 December 2011), and certain legal databases (current as of 2 December 2011).

Attachment "EA11-003 CONSUMER-COMPLAINT-Q7" on CD No. 1 contains a copy of the one consumer complaint.

8. State, by model, engine and model year the number of the following categories of claims, collectively, that have been paid by BMW to date which relate to repair or replacement of the subject component in the peer vehicles: warranty claims; extended warranty claims; claims for good will services that were provided; field, zone, or similar adjustments and reimbursements; and warranty claims or repairs made in accordance with a procedure specified in a technical service bulletin or customer satisfaction campaign.

Separately, for each such claim, state the following information:

a. BMW claim number;
b. Vehicle owner or fleet name (and fleet contact person) and telephone number;
c. VIN;
d. Repair date;
e. Vehicle mileage at time of repair;

f. Repairing dealer's or facility's name, telephone number, city and state or ZIP code;
g. Labor operation number;
h. Problem code;
i. Replacement part number(s) and description(s);
j. Concern stated by customer;
k. Cause and correction of concern;
l. Comment, if any, by dealer/technician relating to claim and/or repair;
m. State whether there is a claim for towing expenses associated with the repair (i.e., filed within 5 days before or after the claim repair date); and
n. BMW's assessment of whether the incident involved an engine stall while driving using the following three categories: (1) stall while driving = "yes;" (2) stall while driving = no; and (3) stall while driving = "unknown."

Provide this information in Microsoft Access 2007, or a compatible format, entitled "WARRANTY DATA." See Enclosure 1, Data Collection Disc, for a pre-formatted table which provides further details regarding this submission.

Response:

The source of this information is our warranty claims database and is current as of 30 September 2011.

Both the BMW 335d and the X5 xDrive35d are equipped with the "M57Y" 3.5 liter engine.

The number of paid warranty claims by Model and Model Year that may relate to repair or replacement of the subject component in the peer vehicles is contained in Table 6.

Model	Model Year	Number of Warranty Claims
335d	2009	6
335d	2010	7
335d	2011	8
X5 xDrive35d	2009	115
X5 xDrive35d	2010	31
X5 xDrive35d	2011	23
X5 xDrive35d	2012	0

Table 6.

Attachment "WARRANTY-DATA" on CD No. 1 contains the requested information. Separate tabs are provided for claims by problem code, claims by labor operation code, and claims by part number. The tab containing claims by problem code provides the total number of separate and unique claims. For a given claim, there could be more than one labor operation and/or more than one part number. Therefore, separate tabs are provided for those parameters so as to not duplicate the results on the problem code tab. The tabs have a common attribute which is item 8(a) – BMW claim number.

Information pertaining to labor operations, labor operation descriptions, problem codes, problem code descriptions, part numbers, and part number descriptions is contained in

Attachment "WARRANTY-DATA" on CD No. 1. Separate tabs are provided for the labor operations/descriptions, problem codes/descriptions, and part numbers/descriptions.

9. **Describe in detail the search criteria used by BMW to identify the claims identified in response to Request No. 8, including the labor operations, problem codes, part numbers and any other pertinent parameters used and describe how the assessment regarding whether the repair condition resulted in an engine stall incident was made (e.g., analysis of problem codes or customer concern/technician comment text fields). Provide a list of all labor operations, labor operation descriptions, problem codes, and problem code descriptions applicable to repair or replacement of the subject component and a separate list that are applicable to assessing whether the repair condition resulted in an engine stall while driving incident. State, by make and model year, the terms of the new vehicle warranty coverage offered by BMW on the peer vehicles (i.e., the number of months and mileage for which coverage is provided and the vehicle systems that are covered). Describe any extended warranty coverage option(s) that BMW offered for the peer vehicles and state by option, model, and model year, the number of vehicles that are covered under each such extended warranty.**

   Response:

   The search criteria included the high-pressure fuel pump part number (135117804409), along with the warranty problem codes from the main warranty groups (13 – fuel preparation) and (16 – fuel supply). These criteria were chosen in order to identify any claim pertaining to repair or replacement of the subject component.

   A separate analysis was performed to identify whether there was any claim occurrence for towing. For any occurrences of stalling, a text-based search was performed. If stalling was identified in any claim, it is indicated on the warranty table as "yes"; otherwise, it is indicated as "unknown" because there was no implicit indication of a no-stall scenario.

   Warranty claim problem codes end in two characters that are either numeric, or alphabetic. If numeric, the claim is a regular warranty claim. If alphabetic, the claim is a Certified Pre-Owned (CPO) claim, a Goodwill claim, or an Extended Service Contract (ESC) claim. For this particular data set, claims are either regular warranty, or goodwill.

   Information pertaining to labor operations, labor operation descriptions, problem codes, problem code descriptions, part numbers, and part number descriptions are contained in Attachment "WARRANTY-DATA" on CD No. 1. Separate tabs are provided for the labor operations/descriptions, problem codes/descriptions, and part numbers/descriptions.

   The terms of the New Vehicle Limited Warranty coverage for the peer vehicles is 4 years / 50,000 miles and includes coverage for the subject component.

   BMW offers a "Certified Pre-Owned" (CPO) program for the peer vehicles. The CPO program provides certain warranty coverage (subject to exclusions and limitations) on the vehicle when purchased (via the CPO program) by a second (and any subsequent) owner(s) for an additional 2 years / 50,000 miles (whichever occurs first), after our original New Vehicle Limited Warranty coverage period of 4 years / 50,000 miles expires. With the

addition of this CPO coverage, the vehicle is covered (with certain limitations) up to a maximum of 6 years / 100,000 miles (whichever occurs first).

BMW offers several extended service contract options for the peer vehicles which are known as the BMW "Extended Vehicle Protection" (EVP) program. While CPO coverage is only available in one term as noted above, we have four EVP terms available for vehicles still covered by our New Vehicle Limited Warranty: 5 years / 100,000 miles, 6 years / 100,000 miles, 7 years / 70,000 miles, or 7 years / 100,000 miles (whichever occur first). All of these terms "wrap" the factory 4 year / 50,000 mile warranty, and will expire at 5, 6, or 7 years from the original in-service date of the vehicle, or 70,000 or 100,000 total vehicular miles, whichever comes first.

On these enrollments, coverage begins on the date of enrollment, and the covered mileage period is calculated by adding the term mileage coverage to the mileage on the vehicle as of the date of enrollment. For all of our current EVP offerings, once in place, coverage can be transferred to a second (and any subsequent) owner(s) in private-party to private-party changes in ownership, but, it does not apply (becomes "inactive") if the vehicle is traded in to a dealer, broker, or wholesaler.

10. **Produce copies of all service, warranty, and other documents that BMW has issued to any dealers, regional or zone offices, field offices, fleet purchasers, or other entities, which relate to or may relate to the subject condition in the peer vehicles. This includes, but is not limited to, technical service bulletins, special service messages, advisories, informational documents, training documents, or other documents or communications, with the exception of standard shop manuals. Also include the latest draft copy of any communication that BMW is planning to issue within the next 120 days.**

    Response:

    BMW has not issued any applicable information.

BMW Response
to
NHTSA EA11-003
22 Dec 2011
(Including Questions 11 to 19)

1. **State, by peer vehicle model year, model, and engine the number of peer vehicles BMW has manufactured for sale or lease in the United States. Separately, for each peer vehicle manufactured to date by BMW, state the following:**

   a. **Vehicle identification number (VIN);**
   b. **Model;**
   c. **Model Year;**
   d. **Date of manufacture;**
   e. **Date warranty coverage commenced; and**
   f. **The State in the United States where the vehicle was originally sold or leased (or delivered for sale or lease).**

   Provide the table in Microsoft Access 2007, or a compatible format, entitled "PRODUCTION DATA." See Enclosure 1, Data Collection Disc, for a pre-formatted table which provides further details regarding this submission.

   Response:

   The source of this information is our vehicle production database and is current as of 22 November 2011.

   The number of peer vehicles BMW has manufactured for sale or lease in the United States by Model and Model Year is contained in Table 1.

Model	Model Year	US Production
335d	2009	1,104
335d	2010	1,732
335d	2011	7,043
X5 xDrive35d	2009	2,767
X5 xDrive35d	2010	4,934
X5 xDrive35d	2011	10,445
X5 xDrive35d	2012	1,963

Table 1.

   Attachment "EA11-003 PRODUCTION-DATA" on CD No. 1 contains the requested information. The attachment includes VINs which do not have a US state of sale; however, we are including them as they were produced for sale or lease in the United States. Both the BMW 335d and the X5 xDrive35d are equipped with the "M57Y" 3.5 liter engine.

2. **State, by model and model year the number of each of the following received by BMW or of which BMW is otherwise aware, which relate to, or may relate to, instances of the subject condition in the peer vehicles; including subtotals for the numbers alleging subject component failure and the numbers alleging engine stall occurred:**

   a. **Consumer complaints, including those from fleet operators;**
   b. **Field reports, including dealer field reports;**
   c. **Reports involving a crash, injury, or fatality, based on claims against the manufacturer involving a death or injury, notices received by the manufacturer**

alleging or proving that a death or injury was caused by a possible defect in a peer vehicle, property damage claims, consumer complaints, or field reports;

d. Property damage claims;

e. Third-party arbitration proceedings where BMW is or was a party to the arbitration; and

f. Lawsuits, both pending and closed, in which BMW is or was a defendant or codefendant.

For subparts "a" through "d" state the total number of each item (e.g., consumer complaints, field reports, etc.) separately. Multiple incidents involving the same vehicle are to be counted separately. Multiple reports of the same incident are also to be counted separately (i.e., a consumer complaint and a field report involving the same incident in which a crash occurred are to be counted as a crash report, a field report and a consumer complaint).

In addition, for items "c" through "f," provide a summary description of the alleged problem and causal and contributing factors and BMW's assessment of the problem, with a summary of the significant underlying facts and evidence. For items "e" and "f," identify the parties to the action, as well as the caption, court, docket number, and date on which the complaint or other document initiating the action was filed.

Response:

The source of this information is our customer contact database (current as of 5 December 2011), various field report databases (current as of 1 December 2011), and certain legal databases (current as of 2 December 2011).

The number of reports, if any, by category, that may relate to the subject condition in the peer vehicles is provided in Table 2. Table 2 also includes the number of reports, if any, in which an allegation, of the type noted in 2(c), is contained within the specific report in that category.

As requested, for each category, subtotals are also included for the numbers alleging subject component failure and the numbers alleging engine stall.

Category	Number	Subtotal Alleging Subject Component Failure	Subtotal Alleging Engine Stall	Number Including Allegation of Crash	Number Including Allegation of Injury	Number Including Allegation of Fatality
Consumer Complaints	10	6	1	0	0	0
Field Reports	1	0	0	0	0	0
Dealer Field Reports	3	1	2	0	0	0
Property Damage Claims	0	0	0	0	0	0
Third-Party Arbitration Proceedings	0	0	0	0	0	0
Lawsuits	0	0	0	0	0	0

Table 2.

3. Separately, for each item (complaint, report, claim, notice, or matter) within the scope of your response to Request No. 2, state the following information:

a. BMW file number or other identifier used;
b. The category of the item, as identified in Request No. 2 (i.e., consumer complaint, field report, etc.);
c. Vehicle owner or fleet name (and fleet contact person), address, and telephone number;
d. Vehicle's VIN;
e. Vehicle's model and model year;
f. Vehicle's mileage at time the subject condition was observed or occurred (incident);
g. Incident date;
h. Report or claim date;
i. Whether failure or malfunction of the subject component is alleged; ;
j. Whether fuel quality concerns are cited as an actual or potential cause or contributor;
k. Whether an engine stall is alleged;
l. Whether a crash is alleged;
m. Whether property damage is alleged;
n. Number of alleged injuries, if any; and
o. Number of alleged fatalities, if any.

Provide this information in Microsoft Access 2007, or a compatible format, entitled "REQUEST NUMBER TWO DATA." See Enclosure 1, Data Collection Disc, for a pre-formatted table which provides further details regarding this submission.

Response:

The source of this information is our customer contact database (current as of 5 December 2011), various field report databases (current as of 1 December 2011), and certain legal databases (current as of 2 December 2011).

Attachment "EA11-003-REQUEST-NUMBER-TWO-DATA" on CD No. 1 contains the requested information. Separate tabs are provided for the consumer complaints, the one field report, and the three dealer field reports.

The consumer complaint codes and code descriptions utilized in the search are contained in Table 3.

Consumer Complaint Code	Code Description
1061	Engine – Fuel Quality
1106	Engine Dies
1601	Fuel Supply System – Fuel Pump
1615	Fuel Tank – Diesel Nozzle Will Not Fit In Tank
AI54	Campaign # 10E-A01 – (MY 2007 –- 2010) N54 Engine – High Pressure Fuel Pump
FN01	N54 High Pressure Fuel Pump Warranty Extension

Table 3.

The field report, and dealer field report codes and code descriptions utilized in the search are contained in Table 4.

Field Report / Dealer Field Report Code	Code Description
1311	Fuel Supply and Fuel Additives
1363	Fuel Pump Relay / Fuel Pump Relay Module
1614	Fuel Pump, Transfer Pump, Gauge Sending Unit

Table 4.

4. **Produce copies of all documents related to each item within the scope of Request No. 2. Organize the documents separately by category (i.e., consumer complaints, field reports, etc.) and describe the method BMW used for organizing the documents.**

   Response:

   The source of this information is our customer contact database (current as of 5 December 2011), various field report databases (current as of 1 December 2011), and certain legal databases (current as of 2 December 2011).

   Attachment "EA11-003 CONSUMER-COMPLAINTS-Q4" on CD No. 1 contains copies of the consumer complaints. The consumer complaints are arranged chronologically by report or claim date.

   Attachment "EA11-003 FIELD-REPORT" on CD No. 1 contains a copy of the one field report.

   Attachment "EA11-003 DEALER-FIELD-REPORTS" on CD No. 1 contains copies of the three dealer field reports. Each dealer field report is a separate file.

5. **State, by peer vehicle model year, model, and engine the number of each of the following, received by BMW, or of which BMW is otherwise aware, which relate to, or may relate to, acknowledged incidents of misfuelling in the peer vehicles (e.g., requests for technical assistance related to repair procedures):**
   a. **Consumer reports, including those from fleet operators;**
   b. **Field reports, including dealer field reports;**
   c. **Reports involving a crash, injury, or fatality, based on claims against the manufacturer involving a death or injury, notices received by the manufacturer alleging or proving that a death or injury was caused by a possible defect in a peer vehicle, property damage claims, consumer complaints, or field reports; and**
   d. **Property damage claims.**

   For subparts "a" through "d" state the total number of each item (e.g., consumer complaints, field reports, etc.) separately. Multiple incidents involving the same

vehicle are to be counted separately. Multiple reports of the same incident are also to be counted separately (i.e., a consumer complaint and a field report involving the same incident in which a crash occurred are to be counted as a crash report, a field report and a consumer complaint).

Response:

The source of this information is our customer contact database (current as of 5 December 2011), various field report databases (current as of 1 December 2011), and certain legal databases (current as of 2 December 2011).

The number of reports, if any, by category, that may relate to acknowledged incidents of misfuelling in the peer vehicles is provided in Table 5. Table 5 also includes the number of reports, if any, in which an allegation, of the type noted in 5(c), is contained within the specific report in that category.

Category	Number	Subtotal Alleging Misfuelling	Number Including Allegation of Crash	Number Including Allegation of Injury	Number Including Allegation of Fatality
Consumer Complaints	1	1	0	0	0
Field Reports	0	0	0	0	0
Dealer Field Reports	0	0	0	0	0
Property Damage Claims	0	0	0	0	0

Table 5.

6. **Separately, for each item (complaint, report, claim, notice, or matter) within the scope of your response to Request No. 5, state the following information:**
   a. **BMW file number or other identifier used;**
   b. **The category of the item, as identified in Request No. 2 (i.e., consumer complaint, field report, etc.);**
   c. **Vehicle owner or fleet name (and fleet contact person), address, and telephone number;**
   d. **Vehicle's VIN;**
   e. **Vehicle's model and model year;**
   f. **Vehicle's mileage at time of incident;**
   g. **Misfuelling incident date;**
   h. **Report or claim date;**
   i. **Whether failure or malfunction of the subject component is alleged;**
   j. **Whether an engine stall is alleged;**
   k. **Whether a crash is alleged;**
   l. **Whether property damage is alleged;**

m. Number of alleged injuries, if any; and
n. Number of alleged fatalities, if any.

Provide this information in Microsoft Access 2007, or a compatible format, entitled "MISFUELLING DATA." See Enclosure 1, Data Collection Disc, for a pre-formatted table which provides further details regarding this submission.

Response:

The source of this information is our customer contact database (current as of 5 December 2011), various field report databases (current as of 1 December 2011), and certain legal databases (current as of 2 December 2011).

Attachment "EA11-003-MISFUELLING DATA" on CD No. 1 contains the requested information.

The consumer complaint codes and code descriptions utilized in the search are contained in Table 3. The field report, and dealer field report codes and code descriptions utilized in the search are contained in Table 4.

7. Produce copies of all documents related to each item within the scope of Request No. 5. Organize the documents separately by category (i.e., consumer complaints, field reports, etc.) and describe the method BMW used for organizing the documents.

Response:

The source of this information is our customer contact database (current as of 5 December 2011), various field report databases (current as of 1 December 2011), and certain legal databases (current as of 2 December 2011).

Attachment "EA11-003 CONSUMER-COMPLAINT-Q7" on CD No. 1 contains a copy of the one consumer complaint.

8. State, by model, engine and model year the number of the following categories of claims, collectively, that have been paid by BMW to date which relate to repair or replacement of the subject component in the peer vehicles: warranty claims; extended warranty claims; claims for good will services that were provided; field, zone, or similar adjustments and reimbursements; and warranty claims or repairs made in accordance with a procedure specified in a technical service bulletin or customer satisfaction campaign.

Separately, for each such claim, state the following information:

a. BMW claim number;
b. Vehicle owner or fleet name (and fleet contact person) and telephone number;
c. VIN;
d. Repair date;
e. Vehicle mileage at time of repair;

f. Repairing dealer's or facility's name, telephone number, city and state or ZIP code;
g. Labor operation number;
h. Problem code;
i. Replacement part number(s) and description(s);
j. Concern stated by customer;
k. Cause and correction of concern;
l. Comment, if any, by dealer/technician relating to claim and/or repair;
m. State whether there is a claim for towing expenses associated with the repair (i.e., filed within 5 days before or after the claim repair date); and
n. BMW's assessment of whether the incident involved an engine stall while driving using the following three categories: (1) stall while driving = "yes;" (2) stall while driving = no; and (3) stall while driving = "unknown."

Provide this information in Microsoft Access 2007, or a compatible format, entitled "WARRANTY DATA." See Enclosure 1, Data Collection Disc, for a pre-formatted table which provides further details regarding this submission.

Response:

The source of this information is our warranty claims database and is current as of 30 September 2011.

Both the BMW 335d and the X5 xDrive35d are equipped with the "M57Y" 3.5 liter engine.

The number of paid warranty claims by Model and Model Year that may relate to repair or replacement of the subject component in the peer vehicles is contained in Table 6.

Model	Model Year	Number of Warranty Claims
335d	2009	6
335d	2010	7
335d	2011	8
X5 xDrive35d	2009	115
X5 xDrive35d	2010	31
X5 xDrive35d	2011	23
X5 xDrive35d	2012	0

Table 6.

Attachment "WARRANTY-DATA" on CD No. 1 contains the requested information. Separate tabs are provided for claims by problem code, claims by labor operation code, and claims by part number. The tab containing claims by problem code provides the total number of separate and unique claims. For a given claim, there could be more than one labor operation and/or more than one part number. Therefore, separate tabs are provided for those parameters so as to not duplicate the results on the problem code tab. The tabs have a common attribute which is item 8(a) – BMW claim number.

Information pertaining to labor operations, labor operation descriptions, problem codes, problem code descriptions, part numbers, and part number descriptions is contained in

Attachment "WARRANTY-DATA" on CD No. 1. Separate tabs are provided for the labor operations/descriptions, problem codes/descriptions, and part numbers/descriptions.

9. **Describe in detail the search criteria used by BMW to identify the claims identified in response to Request No. 8, including the labor operations, problem codes, part numbers and any other pertinent parameters used and describe how the assessment regarding whether the repair condition resulted in an engine stall incident was made (e.g., analysis of problem codes or customer concern/technician comment text fields). Provide a list of all labor operations, labor operation descriptions, problem codes, and problem code descriptions applicable to repair or replacement of the subject component and a separate list that are applicable to assessing whether the repair condition resulted in an engine stall while driving incident. State, by make and model year, the terms of the new vehicle warranty coverage offered by BMW on the peer vehicles (i.e., the number of months and mileage for which coverage is provided and the vehicle systems that are covered). Describe any extended warranty coverage option(s) that BMW offered for the peer vehicles and state by option, model, and model year, the number of vehicles that are covered under each such extended warranty.**

   Response:

   The search criteria included the high-pressure fuel pump part number (135117804409), along with the warranty problem codes from the main warranty groups (13 – fuel preparation) and (16 – fuel supply). These criteria were chosen in order to identify any claim pertaining to repair or replacement of the subject component.

   A separate analysis was performed to identify whether there was any claim occurrence for towing. For any occurrences of stalling, a text-based search was performed. If stalling was identified in any claim, it is indicated on the warranty table as "yes"; otherwise, it is indicated as "unknown" because there was no implicit indication of a no-stall scenario.

   Warranty claim problem codes end in two characters that are either numeric, or alphabetic. If numeric, the claim is a regular warranty claim. If alphabetic, the claim is a Certified Pre-Owned (CPO) claim, a Goodwill claim, or an Extended Service Contract (ESC) claim. For this particular data set, claims are either regular warranty, or goodwill.

   Information pertaining to labor operations, labor operation descriptions, problem codes, problem code descriptions, part numbers, and part number descriptions are contained in Attachment "WARRANTY-DATA" on CD No. 1. Separate tabs are provided for the labor operations/descriptions, problem codes/descriptions, and part numbers/descriptions.

   The terms of the New Vehicle Limited Warranty coverage for the peer vehicles is 4 years / 50,000 miles and includes coverage for the subject component.

   BMW offers a "Certified Pre-Owned" (CPO) program for the peer vehicles. The CPO program provides certain warranty coverage (subject to exclusions and limitations) on the vehicle when purchased (via the CPO program) by a second (and any subsequent) owner(s) for an additional 2 years / 50,000 miles (whichever occurs first), after our original New Vehicle Limited Warranty coverage period of 4 years / 50,000 miles expires. With the

addition of this CPO coverage, the vehicle is covered (with certain limitations) up to a maximum of 6 years / 100,000 miles (whichever occurs first).

BMW offers several extended service contract options for the peer vehicles which are known as the BMW "Extended Vehicle Protection" (EVP) program. While CPO coverage is only available in one term as noted above, we have four EVP terms available for vehicles still covered by our New Vehicle Limited Warranty: 5 years / 100,000 miles, 6 years / 100,000 miles, 7 years / 70,000 miles, or 7 years / 100,000 miles (whichever occur first). All of these terms "wrap" the factory 4 year / 50,000 mile warranty, and will expire at 5, 6, or 7 years from the original in-service date of the vehicle, or 70,000 or 100,000 total vehicular miles, whichever comes first.

On these enrollments, coverage begins on the date of enrollment, and the covered mileage period is calculated by adding the term mileage coverage to the mileage on the vehicle as of the date of enrollment. For all of our current EVP offerings, once in place, coverage can be transferred to a second (and any subsequent) owner(s) in private-party to private-party changes in ownership, but, it does not apply (becomes "inactive") if the vehicle is traded in to a dealer, broker, or wholesaler.

10. **Produce copies of all service, warranty, and other documents that BMW has issued to any dealers, regional or zone offices, field offices, fleet purchasers, or other entities, which relate to or may relate to the subject condition in the peer vehicles. This includes, but is not limited to, technical service bulletins, special service messages, advisories, informational documents, training documents, or other documents or communications, with the exception of standard shop manuals. Also include the latest draft copy of any communication that BMW is planning to issue within the next 120 days.**

    Response:

    BMW has not issued any applicable information.

11. **Describe all assessments, analyses, tests, test results, studies, surveys, simulations, investigations, inquiries and/or evaluations (collectively, "actions") that relate to, or may relate to HPFP drive train durability and performance with low lubricity fuels that have been conducted, are being conducted, are planned, or are being planned by, or for, BMW. For each such action, provide the following information:**

    a. **Action title or identifier;**
    b. **The actual or planned start date;**
    c. **The actual or expected end date;**
    d. **Brief summary of the subject and objective of the action;**
    e. **Engineering group(s)/supplier(s) responsible for designing and for conducting the action; and**
    f. **A brief summary of the findings and/or conclusions resulting from the action.**

    The response to this request should include a detailed description of all past, present and future actions by any and all engineering working groups (e.g.,

pump/engine damage task force) of which VW and/or Audi are active members or are otherwise aware. This includes, at a minimum, all of the information requested in items "a" through "f."

For each action identified, provide copies of all documents related to the action, regardless of whether the documents are in interim, draft, or final form. Organize the documents chronologically by action.

Response:

BMW has not conducted any actions regarding HPFP drive train durability and performance with low lubricity fuels.

12. **Describe all modifications or changes made by, or on behalf of, BMW in the design, material composition, manufacture, quality control, supply, or installation of the subject component, from the start of production to date, which relate to, or may relate to HPFP drive train durability and performance with low lubricity fuels. For each such modification or change, provide the following information:**
    a. **The date or approximate date on which the modification or change was incorporated into vehicle production;**
    b. **A detailed description of the modification or change;**
    c. **The reason(s) for the modification or change;**
    d. **The part number(s) (service and engineering) of the original component;**
    e. **The part number(s) (service and engineering) of the modified component;**
    f. **Whether the original unmodified component was withdrawn from production and/or sale, and if so, when; and**
    g. **When the modified component was made available as a service component.**

    Response:

    BMW has not made any modifications regarding HPFP drive train durability and performance with low lubricity fuels.

13. **For each month in which BMW has sold the following components, state the number of the following components that BMW has sold for use in the peer vehicles by component name, part number (both service and engineering/production), model and model year of the vehicle(s) in which it is used and month/year of sale of the component (including the cut-off date for sales, if applicable).**
    a. **High-pressure fuel pumps;**
    b. **Fuel rails; and**
    c. **Fuel tanks.**

    For each component part number, provide the supplier's name, address, and appropriate point of contact (name, title, and telephone number). Also identify by make, model and model year, any other vehicles (that is, other than peer vehicles) of which BMW is aware that contain the identical component, whether installed in production or in service, and state the applicable dates of production or service usage.

Response:

The source of this information is the BMW AG parts data database and is current as of 13 December 2011.

Attachment "EA11-003 PARTS SALES.xlsx" on CD No. 1 (Rev. 1) contains the requested information.

Parts sales are depicted as totals per calendar year, and are irrespective of vehicle model year. Parts sales by vehicle model year are not available in the parts database. Therefore, parts sales by model year, for the specific model years pertaining to the peer vehicles are not available. Accordingly, the table depicts parts sold for Model Years 2009 through 2011. The sales figures represent the number of parts distributed from BMW AG to BMW NA. For various reasons, dealers will return unused parts, so the actual number of parts replaced in vehicles will be less than the numbers depicted in the table.

14. Provide the following information for the common rail fuel systems used in the peer vehicles:

- **a. Basic functional diagrams of each version of common rail system used in the peer vehicles, showing system components and flow paths;**
- **b. Ranges of operating pressures for the suction and discharge of the HPFP (i.e., low and high pressure systems);**
- **c. Range in operating temperatures for fuel used in the HPFP lubrication system and a description of how HPFP inlet temperature is controlled;**
- **d. Filter mesh size(s) and filter replacement criteria;**
- **e. Describe all scheduled maintenance requirements;**
- **f. A description of all warning lamps and driver information messages associated with the system;**
- **g. A description of all Diagnostic Trouble Codes by name and number and the conditions required to set each code; and**
- **h. A description of all limp-home operating modes, including the conditions required to implement each mode and the limits on vehicle operation.**

Response:

The source of this information is BMW AG Engineering and Steyr Engineering (Diesel Engines) and is current as of 5 December 2011.

a) **[CONFIDENTIAL INFORMATION REMOVED]**

[CONFIDENTIAL INFORMATION REMOVED]

b) **[CONFIDENTIAL INFORMATION REMOVED**
.

c)

d) **]**

Filter change every second oil service.

:

e) All scheduled maintenance requirements

335d M57Y
Oil service at 13,000miles/24 months
Micro filter -> at every brake fluid change (24 months)
Air filter -> at every third oil service (approx. 39,000miles)
Diesel filter -> at every third oil service (approx. 39,000miles)
AdBlue refill -> at every oil service (approx. 13,000miles)

X5 xDrive 35d M57Y
Oil service at 11,000miles/24 months
Micro filter -> at every brake fluid change (24 months)
Air filter -> at every third oil service (approx. 33,000miles)
Diesel filter -> at every third oil service (approx. 33,000miles)
AdBlue refill -> at every oil service (approx. 11,000miles)

f) Driver information:
Fuel level gauge: indicates fuel amount in fuel tank
Check engine lamp: indicates engine error
Malfunction indication lamp (MIL): indicates an error of emission control device

g) Attachment "EA11-003-Q11-19.xlsx" on CD No. 1 (Rev. 1), Tab "Q14(g&h)" contains the requested information.

h) Attachment "EA11-003-Q11-19.xlsx" on CD No. 1 (Rev. 1), Tab "Q14(g&h)" contains the requested information.

15. Separately for each peer vehicle, provide the following information for the subject component used in that vehicle:

a. Specific supplier model name and model number;
b. Cross-sectional diagram of the pump showing basic operation of the drive train;
c. Ratio of pump speed to engine speed;
d. Maximum pump discharge pressure;
e. Minimum pump suction pressure;
f. Pump durability specifications;

g. The material composition and material specifications for all drive train components (e.g., plunger, plunger base, shoe, foot, rider, roller, roller shoe, cam); and
h. Copies of all failure mode and effects analyses.

Response:

The source of this information is BMW AG Engineering and Steyr Engineering (Diesel Engines) and is current as of 5 December 2011.

a) Model name and model number of HPFP:
CP3 16/3 (ex CP3.2) BMW M57TU2 TOP USA
Bosch number: 0445010194
BMW number: 7 804 409

b) cross section

[CONFIDENTIAL INFORMATION REMOVED

c to f)

f) **]**

g) This information is provided by Robert Bosch:

[CONFIDENTIAL INFORMATION REMOVED]

Based on the common agreements between OEM and suppliers the material composition and specification for the parts in the products are intellectual property of the suppliers and are not handed over to the OEM. Therefore BMW does not have the detailed material composition and specification of parts of the high pressure fuel pump.

h) Based on the world wide accepted standard about protection of intellectual property FMEA's are not handed over from the suppliers to the OEM's. The access of the OEM's to the supplier's FMEA is limited to reviews. Therefore BMW cannot provide the FMEA for the high pressure fuel pump.

16. Provide the following information regarding the subject component from peer vehicles:

a. Any information, reports, and analyses regarding returned parts that exhibited signs of wear or other deterioration of the drive train; and
b. A tabular summary of all field return analyses and reports.

Response:

The source of this information is BMW AG Engineering and Steyr Engineering (Diesel Engines) and is current as of 5 December 2011.

Attachment "CONF-EA11-003-Q11-19.xlsx" on CD No. 2, Tab "Q16" contains the requested information.

17. Provide the following information regarding diesel fuels sold in the United States, and test fuels used by or for BMW in the design and development of the fuel system and subject component:

a. Identify and provide copies of all studies and surveys conducted by or for BMW and other documents in the possession of and reviewed by BMW regarding diesel fuel quality or characteristics in the U.S., and/or diesel fuel delivery system performance concerns related to fuel quality in the United States market from 2004 to date;
b. Describe the fuel properties BMW considers in its evaluations of HPFP performance/durability and state the ranges in those properties that BMW believes exist in the United States market, from fuel survey data or other sources (provide the means and standard deviations for all sampled data for the United States market);
c. State the specifications for all reference fuels used by BMW in testing the subject component, including an explanation of the basis for the lubricity specification;
d. Describe how BMW has ensured that the HPFP design in peer vehicles is compatible with diesel fuels sold in the United States and other markets;
e. Describe all testing of the subject component conducted by, or for, BMW with gasoline contaminated test fuels, including the purpose of the test, the amount of contamination, the test conditions and the test results;
f. Provide BMW's assessment of the amounts of gasoline contamination required to produce the following effects on engine performance: (1) driveability symptoms during city driving (describe symptoms); (2) driveability symptoms during highway driving (describe symptoms); (3) engine stall; and (4) pump damage; and (5) sudden/catastrophic pump failure;
g. Provide BMW's assessment of the effects of minor gasoline contamination on engine performance and HPFP performance/durability (provide assessments for contaminations of less than 3 percent and less than 1 percent); and
h. Produce copies of all recommendations and warnings regarding diesel fuel quality that BMW has provided to its customers.

Response:

The source of this information is BMW AG Engineering and Steyr Engineering (Diesel Engines) and is current as of 5 December 2011.

a) According to the Alliance of Automobile Manufactures, the Alliance submitted the North American Market Diesel Fuel Data Surveys ("N.A. Fuel Surveys") and Quality Assurance Reports ("QA Reports") for the years 2004-2011 to NHTSA under terms of confidentiality.

b) Fuel properties:
Lubricity, particle size and number, water content, viscosity.
For fuel survey data see 17(a).

c) Specifications: EN590 and ASTM-D975.
Lubricity has impact on HPFP component regarding durability, wear, temperature caused by friction.

[CONFIDENTIAL INFORMATION REMOVED]

d) BMW provides a technical specification to the supplier including information that this component will be used for the US market regarding its fuel quality. No detailed fuel quality data or properties were the subject of a specification.

Durability tests in US and analysis of end of life parts ensures the functionality of the components.

e) No special test with gasoline contaminated diesel fuel.

f) No special assessments, no results.

g) No special assessments, no results.

h) Attachment "EA11-003-Q11-19.xlsx" on CD No. 1 (Rev. 1), Tab "Q17(h)" contains the requested information.

18. Provide the following information regarding incidents/repairs in which misfuelling is not acknowledged but suspected in the peer vehicles (Note: the IR definitions for "misfuelling" and "fuel quality concern" do not apply to this request):

a. Does BMW distinguish problems from misfuelling from problems involving poor fuel quality for the purposes of determining whether or not repairs to the subject component and/or vehicle are covered by warranty?
b. Describe how BMW distinguishes incidents involving misfuelling from incidents involving poor fuel quality in resolving questions about warrantable repairs (e.g., describe test methods, qualitative analyses, performance symptoms or diagnostic codes that would indicate or suggest misfuelling);
c. State how BMW resolves disputes concerning warranty coverage related to suspected fuel quality concerns;
d. Describe and provide copies of all guidance provided to dealers and/or zone offices related to diagnosing, documenting and repairing fuel system failures in which fuel quality is a suspected cause or contributor;
e. Describe the repair procedures for a peer vehicle that has been fueled with gasoline, for situations where (1) the engine was not started after a misfuel; and (2) the engine was started after a misfuel;
f. Describe the repair procedures for a peer vehicle that has experienced catastrophic HPFP drive train failure (i.e., metallic particles/debris in the fuel system); and
g. Describe all misfuel countermeasures that BMW has implemented in the peer vehicles or is considering for future production light duty diesel vehicles in the United States market.

Response:

a) When it is obvious that the vehicle was misfueled (fuel color/clarity, odor, customer admits to misfueling) then the repair is not covered under warranty. When it is not obvious but suspected – poor starting or drivability, it is on a case by case basis if the repair is covered under warranty.

b) Misfueling (gasoline) – not covered under warranty. Poor fuel quality – Most of the time it is determined by draining the vehicle of all fuel and refilling with a known, top-tier diesel fuel. If the engine runs properly then it was poor fuel quality. Also fuel quality analyses, diagnostic function which detects poor fuel quality = idle-speed quality, smoke of exhaust gas, smell of fuel, engine start time, engine torque loss, engine noise, throttle response….

c) If there is a dispute, BMW will send a sample of the suspected fuel to a laboratory to determine fuel quality. The claim may be paid under terms of goodwill.

d) Attachment "EA11-003-Q11-19.xlsx" on CD No. 1 (Rev. 1), Tab "Q18(d&e)" contains the requested information.

e) Attachment "EA11-003-Q11-19.xlsx" on CD No. 1 (Rev. 1), Tab "Q18(d&e)" contains the requested information.

f) The engine would need to be replaced as would any components that suffered collateral damage from the pump failure. Or replacement of HPFP if pump is out of operation, depending on failure.

g) Misfueling countermeasures were implemented into peer vehicle since start of production.

19. Provide BMW's assessment of the subject component failure experience in the peer vehicles, including:

a. The causal or contributory factors, including but not limited to misfuel and fuel quality concerns;
b. The approximate percentages of subject component failures associated with each of the causal/contributory factors identified in item "a;"
c. The failure mechanism for each causal condition identified;
d. The failure mode for each causal condition identified, including the effect on engine performance (e.g., driveability concern, engine stall); and
e. A comparison, by model and model year, of the HPFP warranty claim rates and part sales rates in the peer vehicles and HPFP failure rates for same/similar vehicles in other worldwide markets (e.g., Germany, France, United Kingdom, Russia, China, India, Japan, Brazil, and Canada). [Please note any differences between vehicle designs and market fuel distribution/quality that BMW believes may affect this analysis].

Response:

a) Lubrication including contamination with gasoline, particle size and number, water content, temperature, pressures inlet and outlet, fuel mass flow through pump, engine speed and viscosity.

b) All parts have been analyzed by the supplier, as follows: 14 parts in total; 9 no trouble found, 2 particle contaminations, 2 water contamination.

Attachment "CONF-EA11-003-Q11-19.xlsx" on CD No. 2, Tab "Q16" contains the requested information.

c and d) Main conditions and main failure modes:

Condition	failure mode
fuel quality (too low lubricity)	worse lubrication and cooling of the drive train -> wear and particle in the pump -> the camshaft of the pump stalls -> engine stall; wear at the sucking valve -> leakage at the valve -> less rail-pressure -> reduced engine power
misfuel (gasoline, …)	worse lubrication and cooling of the drive train -> wear and particle in the pump -> the camshaft of the pump stalls -> engine stall
low pressure fuel supply system failure (pressure to low in long term)	worse lubrication and cooling of the drive train -> wear and particle in the pump -> the camshaft of the pump stalls -> engine stall
mechanical defects / material defects	the cam breaks off -> no rail-pressure -> engine stall; the spring for the sucking valve breaks -> leakage at the valve -> less rail-pressure -> reduced engine power
electrical defects (metering unit)	engine stall or reduced engine power (see summary worksheet)
particle contamination	leakage at a sucking valve or high pressure valve -> less rail-pressure -> reduced engine power

e) Failure rate (replaced HPFP): The HPFP with part no. 7 804 409 is only introduced in the US applications.

	MY09	MY10	MY11	MY12
335d	0.34%	0.17%	0.00%	0.00%
X5 xDrive 35d	0.59%	0.22%	0.10%	0.00%