



Steve M. Kenner, Global Director
Automotive Safety Office
Sustainability, Environment & Safety Engineering

Fairlane Plaza South, Suite 400
330 Town Center Drive
Dearborn, MI 48126-2738 USA

January 20, 2010

Mr. Frank S. Borris, Director
Office of Defects Investigation
National Highway Traffic Safety Administration
1200 New Jersey Avenue SE, Room W45-302
Washington, D.C. 20590

Dear Mr. Borris:

Subject: EA11-003:NVS-213hkb

The Ford Motor Company (Ford) response to the agency's October 7, 2011, letter requesting certain information concerning 2008 through 2012 model year Ford Super Duty F-250, F-350, F-450, and F-550 vehicles with common rail diesel engines is attached. Ford understands that there is no alleged defect with respect to any of its vehicles and is providing this information as part of the agency's investigation of another manufacturer's vehicles.

If you have any questions concerning this response, please feel free to contact me.

Sincerely,

A handwritten signature in blue ink that reads "S. M. Kenner".

Steven M. Kenner

Attachment



FORD MOTOR COMPANY (FORD) RESPONSE TO EA11-003

Ford's response to this Engineering Analysis peer vehicle information request was prepared pursuant to a diligent search for the information requested. We have made every effort to provide thorough and accurate information, and we would be pleased to meet with agency personnel to discuss any aspect of this peer vehicle information request.

The scope of Ford's investigation conducted to locate responsive information focused on Ford employees most likely to be knowledgeable about the subject matter of this inquiry and on review of Ford files in which responsive information ordinarily would be expected to be found and to which Ford ordinarily would refer, as more fully described in this response. Ford notes that although electronic information was included within the scope of its search, Ford has not attempted to retrieve from computer storage electronic files that were overwritten or deleted. As the agency is aware, such files generally are unavailable to the computer user even if they still exist and are retrievable through expert means. To the extent that the agency's definition of Ford includes suppliers, contractors and affiliated enterprises for which Ford does not exercise day-to-day operational control, we note that information belonging to such entities ordinarily is not in Ford's possession, custody or control.

Ford has construed this request as pertaining to Gross Vehicle Weight Rating (GVWR) class 5 or lower Super Duty F-250 through F-550 vehicles manufactured for sale in the United States, its protectorates and territories.

In an October 17, 2011 email, Mr. Jeff Quandt of the agency informed Ford that the scope for Request 2 through Request 8 specifically pertains to 2009 through 2012 model year peer vehicles, and that the scope of the part sales information requested in Request 13 specifically pertains to high pressure fuel pumps (HPFP).

In an October 21, 2011 email, Mr. Jeff Quandt of the agency informed Ford that the "subject condition" definition is intended to collect information that relates, or may relate, to the HPFP and that Ford should not provide records where the HPFP could be eliminated as the cause of the incident. The agency also informed Ford that Part 3 of the subject condition could be deleted, although any repairs involving multiple fuel system component replacement that included the HPFP should be included as responsive to Part 1 of the subject condition. Finally, Ford was informed that, with the exception of Request 1 and Request 13, the scope of this information request specifically pertains to 2009 through 2012 model year peer vehicles, and that the scope of Request 19e was revised to a comparison of the sales, warranty and part sales data in the United States and Canada, including a comparison of the warranty terms in the two countries.

Ford notes that the agency typically considers "peer" vehicles to be the same type as the vehicles that are subject to the investigation. In this case the Ford peer vehicles are over 8500 lb. GVWR trucks as compared to the passenger cars that are the subject of the investigation. As the agency is aware, these trucks are frequently subject to extreme severe service. Many of the vehicles are in fleets, are driven by a variety of drivers, and may not receive the same care or maintenance as personally owned vehicles. Consequently, comparisons of the Ford peer vehicles to the vehicles subject to the investigation may not be a direct comparison as it is in many of the agency's peer investigations.

Ford also notes that some of the information being produced pursuant to this inquiry may contain personal information such as customer names, addresses, telephone numbers, and

complete Vehicle Identification Numbers (VINs). Ford is producing such personal information in an unredacted form to facilitate the agency's investigation with the understanding that the agency will not make such personal information available to the public under FOIA Exemption 6, 5 U.S.C. 552(b)(6).

Answers to your specific questions are set forth below. As requested, after each numeric designation, we have set forth verbatim the request for information, followed by our response. Unless otherwise stated, Ford has undertaken to provide responsive documents dated up to and including October 7, 2011, the date of your inquiry. Ford has searched within the following offices for responsive documents: Sustainability, Environment and Safety Engineering, Ford Customer Service Division, Marketing and Sales Operations, Quality, Global Core Engineering, Office of the General Counsel, and North American Product Development

Request 1

State, by peer vehicle model year, model, and engine the number of peer vehicles Ford has manufactured for sale or lease in the United States. Separately, for each peer vehicle manufactured to date by Ford, 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.

Answer

As previously stated, Ford understands this request to pertain to GVWR class 5 or lower Super Duty F-250 through F-550 vehicles manufactured for sale in the United States, its protectorates and territories.

Ford records indicate that the approximate total number of subject peer vehicles sold in the United States (the 50 states and the District of Columbia) and its protectorates and territories (American Samoa, Guam, Northern Mariana Islands, Puerto Rico, and Virgin Islands) is 507,227.

The number of subject peer vehicles sold in the United States by model year, model and engine is shown below:

Model	Engine	2008 MY	2009 MY	2010 MY	2011 MY	2012 MY
F-250	6.4L Diesel	105,125	17,876	27,364	0	0
F-250	6.7L Diesel	0	0	0	60,484	3,101
F-350	6.4L Diesel	94,983	16,935	20,258	0	0
F-350	6.7L Diesel	0	0	0	54,649	3,386
F-450	6.4L Diesel	32,078	4,395	3,297	0	0
F-450	6.7L Diesel	0	0	0	10,843	660

Model	Engine	2008 MY	2009 MY	2010 MY	2011 MY	2012 MY
F-550	6.4L Diesel	26,071	6,515	3,775	0	0
F-550	6.7L Diesel	0	0	0	14,194	1,238

The requested data for each subject peer vehicle is provided in Appendix A on the enclosed CD.

Request 2

State, by model and model year the number of each of the following received by Ford or of which Ford 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 Ford is or was a party to the arbitration; and
- f. Lawsuits, both pending and closed, in which Ford 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 Ford'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.

Answer

For purposes of identifying reports of incidents "which relate to, or may relate to" the subject condition and any related documents, Ford has gathered "owner reports" and "field reports" maintained by Ford Customer Service Division (FCSD), and claim and lawsuit information maintained by Ford's Office of the General Counsel (OGC). Descriptions of the FCSD owner and field report systems and the criteria used to search each of these are provided in Appendix B.

The following categorizations were used in the review of reports located in each of these searches:

Category	Allegation
A1	Alleged stall, alleged HPFP related, and alleged metallic debris or contamination
A2	Alleged stall, alleged HPFP related, and no alleged metallic debris or contamination
A3	No alleged stall, alleged HPFP related, and alleged metallic debris or contamination
A4	No alleged stall, alleged HPFP related, and no alleged metallic debris or contamination
A5	Ambiguous alleged stall, alleged HPFP related, and alleged metallic debris or contamination
A6	Ambiguous alleged stall, alleged HPFP related, and no alleged metallic debris or contamination
B1	Alleged stall, unknown or ambiguous if HPFP related, and alleged metallic debris or contamination
B2	Alleged stall, unknown or ambiguous if HPFP related, and no alleged metallic debris or contamination
B3	No alleged stall, unknown or ambiguous if HPFP related, and alleged metallic debris or contamination
B4	Ambiguous alleged stall, unknown or ambiguous if HPFP related, and alleged metallic debris or contamination
B5	No alleged stall, unknown or ambiguous if HPFP related, and no alleged metallic debris or contamination
B6	Ambiguous alleged stall, unknown or ambiguous if HPFP related, and no alleged metallic debris or contamination

We are providing copies of reports categorized as "B1" through "B6" as "non-specific allegations" for your review because of the broad scope of the request. Based on our engineering judgment, the information in these reports is insufficient to support a determination that they pertain to the subject component.

Owner Reports: Records identified in a search of the Master Owner Relations Systems (MORS) database, as described in Appendix B, were reviewed for relevance and categorized in accordance with the categories described above. The number and copies of relevant owner reports identified in this search that may relate to the agency's peer investigation are provided in the MORS III portion of the database contained in Appendix C. The categorization of each report is identified in the "Category" field.

When we were able to identify that responsive (i.e., not ambiguous) duplicate owner reports for an alleged incident were received, each of these duplicate reports was marked accordingly, and the group counted as one report. In other cases, certain vehicles may have experienced more than one incident and have more than one report associated with their VINs. These reports have been counted separately.

Legal Contacts: Ford is providing in Appendix B a description of Legal Contacts and the activity that is responsible for this information. Ford identified no responsive owner reports that indicate that they are Legal Contacts.

Field Reports: Records identified in a search of the Common Quality Indicator System (CQIS) database, as described in Appendix B, were reviewed for relevance and categorized in accordance with the categories described above. The number and copies of relevant field reports identified in this search that may relate to the agency's peer investigation are provided in the CQIS portion of the database contained in Appendix C. The categorization of each report is identified in the "Category" field.

Many field reports provided in this response were generated for administrative purposes only and are not typical field reports requesting diagnosis or repair assistance. Though HPFPs can be separately serviced, a HPFP malfunction sometimes results in damage to other engine or fuel system components, requiring additional repairs. Ford's warranty policy for HPFP replacement requires that technicians at the majority of dealerships obtain prior approval from Ford before a HPFP replacement can be conducted. This process was implemented to ensure that the technician is aware of all available repair options when performing the diagnosis and repair. When a technician completes Ford's online approval form to request HPFP warranty replacement, a record is automatically generated in Ford's field report database. These field reports relating to warranty replacement approval requests are generated simply for administrative purposes. Though they do not meet the repair diagnostic criteria for which field reports are typically generated, Ford is nevertheless providing them in this response as they are contained in Ford's field report database.

When we were able to identify that responsive duplicate field reports for an alleged incident were received, each of these duplicate reports was marked accordingly, and the group counted as one report. In other cases, certain vehicles may have experienced more than one incident and have more than one report associated with their VINs. These reports have been counted separately. In addition, field reports that are duplicative of owner reports, or are duplicative of warranty claims and are solely for administrative purposes as described above, are provided in Appendix C but are not included in the report count above.

Some field reports have attachments such as photographs or fuel sample reports associated with them. These reports are identified with a non-zero number in the "Attachment" field. Ford typically does not provide copies of field report attachments in our response to the agency; however, if the agency would like more information regarding any of these attachments, please advise.

Crash/Injury Incident Claims: For purposes of identifying allegations of accidents or injuries that may have resulted from the subject condition, Ford has reviewed responsive owner and field reports, and lawsuits and claims and no accidents or injuries related to the subject condition were identified.

Claims, Lawsuits, and Arbitrations: For purposes of identifying incidents that may relate to the subject condition, Ford has gathered claim and lawsuit information maintained by Ford's OGC. Ford's OGC is responsible for handling product liability lawsuits, claims, and consumer breach of warranty lawsuits and arbitrations against the Company.

Lawsuits and claims gathered in this manner were reviewed for relevance and categorized in accordance with the categories described above. Ford identified one claim which is ambiguous as to whether it meets the subject condition criteria. We have included this claim as a "non-specific allegation" for your review because of the broad scope of the request. Based on our engineering judgment, the information in this claim is insufficient to support a determination that it pertains to the subject condition.

The requested detailed information, where available, pertaining to the responsive lawsuits and claims in the Log of Lawsuits and Claims, is provided in Appendix C in the Legal Claim/Lawsuits tab. The number of relevant lawsuits and claims identified is also provided in this log. To the extent available, copies of complaints, first notices, or MORS reports relating to matters shown on the log are provided in Appendix D. With regard to these lawsuits and claims, Ford has not contacted outside law firms to obtain additional documentation.

Request 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. Ford 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 the submission.

Answer

Ford is providing owner and field reports in the database contained in Appendix C in response to Request 2. To the extent information sought in Request 3 is available for owner and field reports, it is provided in the database. To the extent information sought in Request 3 is available for lawsuits and claims, it is provided in the Log of Lawsuits and Claims in Appendix C in the Legal Claim/Lawsuits tab.

Request 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 Ford used for organizing the documents.

Answer

Ford is providing owner and field reports in the database contained in Appendix C in response to Request 2. Copies of complaints, first notices, or MORS reports relating to matters shown on the Log of Lawsuits and Claims in Appendix C in the Legal Claim/Lawsuits tab are provided in Appendix D. To the extent information sought in Request 4 is available, it is provided in the referenced appendices.

As previously noted, some field reports have attachments such as photographs or fuel sample reports associated with them. These reports are identified with a non-zero number in the "Attachment" field in the CQIS section of the database contained in Appendix C. Ford typically does not provide copies of field report attachments in our response to the agency; however, if the agency would like more information regarding any of these attachments, please advise.

Request 5

State, by peer vehicle model year, model, and engine the number of each of the following, received by Ford, or of which Ford 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 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; 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).

Answer

For purposes of identifying reports of incidents "which relate to, or may relate to" acknowledged incidents of misfuelling and any related documents, Ford has gathered "owner reports" and "field reports" maintained by Ford Customer Service Division (FCSD), and claim and lawsuit information maintained by Ford's Office of the General Counsel (OGC).

Descriptions of the FCSD owner and field report systems, and the criteria used to search each of these are provided in Appendix B.

The following categorizations were used in the review of reports located in each of these searches:

Category	Allegation
A7	Acknowledged misfuelling, alleged stall, and alleged HPFP related
A8	Acknowledged misfuelling, alleged stall, and not alleged HPFP related
A9	Acknowledged misfuelling, alleged stall, and unknown or ambiguous if alleged HPFP related
A10	Acknowledged misfuelling, no alleged stall, and alleged HPFP related
A11	Acknowledged misfuelling, no alleged stall, and not alleged HPFP related
A12	Acknowledged misfuelling, no alleged stall, and unknown or ambiguous if alleged HPFP related
A13	Acknowledged misfuelling, ambiguous alleged stall, and alleged HPFP related
A14	Acknowledged misfuelling, ambiguous alleged stall, and not alleged HPFP related
A15	Acknowledged misfuelling, ambiguous alleged stall, and unknown or ambiguous if alleged HPFP related

Owner Reports: Records identified in a search of the Master Owner Relations Systems (MORS) database, as described in Appendix B, were reviewed for relevance and categorized in accordance with the categories described above. The number and copies of relevant owner reports identified in this search that relate to, or may relate to, acknowledged incidents of misfuelling are provided in the MORS III portion of the database contained in Appendix C. The categorization of each report is identified in the "Category" field.

When we were able to identify that responsive (i.e., not ambiguous) duplicate owner reports for an acknowledged incident of misfuelling were received, each of these duplicate reports was marked accordingly, and the group counted as one report.

Legal Contacts: Ford is providing in Appendix B a description of Legal Contacts and the activity that is responsible for this information. Ford identified no responsive owner reports that indicate that they are Legal Contacts.

Field Reports: Records identified in a search of the Common Quality Indicator System (CQIS) database, as described in Appendix B, were reviewed for relevance and categorized in accordance with the categories described above. The number and copies of relevant field reports identified in this search that relate to, or may relate to, acknowledged incidents of misfuelling are provided in the CQIS portion of the database contained in Appendix C. The categorization of each report is identified in the "Category" field.

When we were able to identify that responsive duplicate field reports for an acknowledged incident of misfuelling were received, each of these duplicate reports was marked accordingly, and the group counted as one report. In addition, field reports that are duplicative of owner reports are provided in Appendix C but are not included in the report count above.

Ford notes that some field reports have attachments such as photographs or fuel sample reports associated with them. These reports are identified with a non-zero number in the "Attachment" field. Ford typically does not provide copies of field report attachments in our

response to the agency; however, if the agency would like more information regarding any of these attachments, please advise.

Crash/Injury Incident Claims: For purposes of identifying allegations of accidents or injuries that may have resulted from acknowledged incidents of misfuelling, Ford has reviewed responsive owner and field reports, and lawsuits and claims. Ford identified no allegations of accidents or injuries that relate to, or may relate to, acknowledged incidents of misfuelling.

Claims, Lawsuits, and Arbitrations: For purposes of identifying incidents that relate to, or may relate to, acknowledged incidents of misfuelling, Ford has gathered claim and lawsuit information maintained by Ford's OGC. Ford's OGC is responsible for handling product liability lawsuits, claims, and consumer breach of warranty lawsuits and arbitrations against the Company. Lawsuits and claims gathered in this manner were reviewed for relevance and no lawsuits, claims, or consumer breach of warranty lawsuits that relate to, or may relate to, acknowledged incidents of misfuelling were identified.

Request 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. Ford 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 the submission.

Answer

Ford is providing owner and field reports in the database contained in Appendix C in response to Request 5. To the extent information sought in Request 6 is available for owner and field reports, it is provided in the referenced database.

Request 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 Ford used for organizing the documents.

Answer

Ford is providing owner and field reports in the database contained in Appendix C in response to Request 5. To the extent information sought in Request 7 is available, it is provided in the referenced database.

Request 8

State, by model, engine and model year the number of the following categories of claims, collectively, that have been paid by Ford 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. Ford's 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. Ford'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.

Answer

Records identified in a search of the AWS database, as described in Appendix B, were reviewed for relevance and categorized in accordance with the categories described below:

Category	Allegation
A16	Alleged stall, while driving, HPFP repaired or replaced
A17	Alleged stall, not while driving, HPFP repaired or replaced
A18	Alleged stall, unknown or ambiguous if while driving, HPFP repaired or replaced
A19	Ambiguous alleged stall, HPFP repaired or replaced
A20	No alleged stall, HPFP repaired or replaced

The number and copies of relevant warranty claims identified in this search that relate to replacement of the subject component in the peer vehicles are provided in the AWS portion of the database contained in Appendix C. The categorization of each report is identified in the "Category" field.

When we were able to identify that duplicate claims for an alleged incident were received, each of these duplicate claims was marked accordingly and the group counted as one report. In other cases, certain vehicles may have experienced more than one incident and have more than one claim associated with their VINs. These claims have been counted separately. Warranty claims that are duplicative of owner and field reports are provided in Appendix C but are not included in the report count above.

Requests for "goodwill, field or zone adjustments" received by Ford to date that relate to repair or replacement of the subject component that were not honored, if any, would be included in the MORS reports identified above in response to Request 2 and Request 5. Such claims that were honored are included in the warranty data provided.

Additionally, the agency has requested information related to claims for vehicle towing within five days of the subject component repair claim. Ford provides roadside assistance as part of the new vehicle limited warranty and certain optional extended service plans. The roadside assistance program is administered by an outside supplier and Ford does not have access to claims made for vehicle towing through this service. Recently, Ford has begun importing roadside assistance claims into its MORS database. However, the claims do not indicate what type of assistance was required, only that assistance was requested. The customer and technician comments provided with warranty claims provide the best source of information regarding possible incident-related vehicle towing.

Request 9

Describe in detail the search criteria used by Ford 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 Ford 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 Ford 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.

Answer

Detailed descriptions of the search criteria, including all pertinent parameters, used to identify the claims provided in response to Request 8 are described in Appendix B. Additionally, although not requested by the agency, detailed descriptions of the search criteria used to identify the records provided in response to Request 2 through Request 7 are also provided in Appendix B.

For 2009 through 2012 model year F-250 through F-550 vehicles with diesel engines, the New Vehicle Limited Warranty Bumper-to-Bumper Coverage begins at the warranty start date and lasts for three years or 36,000 miles, whichever occurs first. Powertrain coverage begins at the warranty start date and lasts for five years or 60,000 miles, whichever occurs first. Safety Restraint System coverage begins at the warranty start date and lasts for five years or 60,000 miles, whichever occurs first. Corrosion Perforation coverage begins at the warranty start date and lasts for five years regardless of miles driven. Finally, Powerstroke Diesel Engine coverage begins at the warranty start date and lasts for five years or 100,000 miles, whichever occurs first. Optional Extended Service Plans (ESPs) were available to cover various vehicle systems, time in service and mileage increments. The details of the various plans that include coverage for the subject component, and the number of contracts purchased for peer vehicles for each plan, are provided in Appendix E. As of the date of the agency's information request, 37,116 new vehicle ESP policies had been purchased on 2009 through 2012 model year F-250 through F-550 vehicles with diesel engines that include coverage for the subject component.

Request 10

Produce copies of all service, warranty, and other documents that Ford 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 Ford is planning to issue within the next 120 days.

Answer

For purposes of identifying communications to dealers, zone offices, or field offices pertaining, at least in part, to the subject condition, Ford has reviewed the following FCSD databases and files: The On-Line Automotive Service Information System (OASIS) containing Technical Service Bulletins (TSBs) and Special Service Messages (SSMs); Internal Service Messages (ISMs) contained in CQIS; and Field Review Committee (FRC) files. We assume this request does not seek information related to electronic communications between Ford and its dealers regarding the order, delivery, or payment for replacement parts, so we have not included these kinds of information in our answer.

A description of Ford's OASIS messages, ISMs, and the Field Review Committee files and the search criteria used are provided in Appendix B.

OASIS Messages: Ford has identified eight SSMs and six TSBs that may relate to the subject condition in the subject peer vehicles and is providing copies of them in Appendix F1.

Internal Service Messages: Ford has identified one ISM that may relate to the subject condition in the subject peer vehicles and is providing a copy of it in Appendix F2.

Field Review Committee: Ford has identified one Field Service Action; that action is a customer satisfaction program that updated the 6.4L diesel engine calibration with improved fault detection capabilities to minimize engine related repair costs. Included among the enhanced warning features in the update was a revision to the water in fuel driver warning strategy to keep the warning light on after a key cycle when the water in fuel trap has not been drained, and to force an engine derate condition if the trap is not drained when water in fuel has been detected. No changes were made to the water in fuel detection strategy. A copy of this communication is provided in Appendix F3.

Other: Ford has identified two job aids and one Warranty Action Notice that may relate to the subject condition in the subject peer vehicles and is providing copies of them in Appendix F4. Additionally, Ford has plans to revise one of the referenced job aids and is providing a draft of the revised job aid in Appendix F5 with a request for confidentiality under separate cover to the agency's Office of the Chief Counsel pursuant to 49 CFR Part 512.

Request 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, Ford. 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.

Answer

Ford is construing this request broadly and is providing not only studies, surveys, and investigations related to HPFP drivetrain durability and performance with low lubricity fuels, but also notes, correspondence, and other communications that were located pursuant to a diligent search for the requested information. Ford is providing the responsive non-confidential Ford documentation in Appendix G.

To the extent that the information requested is available, it is included in the documents provided. If the agency should have questions concerning any of the documents, please advise.

Ford is submitting additional responsive documentation in Appendix H with a request for confidentiality under separate cover to the agency's Office of the Chief Counsel pursuant to 49 CFR Part 512. Redacted copies of the confidential documents will be provided under separate cover to the agency's Office of Chief Counsel as Appendix H – Redacted.

Ford notes that some of the field return test reports provided in Appendix H – Supplier Related Documents are not responsive to Request 11 but are included in this appendix because they are responsive to Request 16.

Ford notes that it is not providing general documents pertaining to water in fuel, misfuelling, or fuel contamination that do not specifically relate to HPFP drivetrain durability or performance. If the agency would like to discuss or review these types of additional documents, please advise.

In the interest of ensuring a timely and meaningful submission, Ford is not producing materials or items containing little or no substantive information. Examples of the types of materials not being produced are meeting notices, raw data lists (such as part numbers or VINs) without any analytical content, duplicate copies, non-responsive elements of responsive materials, and draft electronic files for which later versions of the materials are being submitted. Through this method, Ford is seeking to provide the agency with substantive responsive materials in our possession in the timing set forth for our response. We believe our response meets this goal. If the agency would like additional materials, please advise.

Request 12

Describe all modifications or changes made by, or on behalf of, Ford 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

Answer

A table of the requested changes is provided in Appendix I.

Request 13

For each month in which Ford has sold the following components, state the number of the following components that Ford 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 Ford is aware that contain the identical component, whether installed in production or in service, and state the applicable dates of production or service usage.

Answer

As the agency is aware, Ford service parts are sold in the U.S. to authorized Ford and Lincoln dealers. Ford has no means to determine how many of the parts were actually installed on vehicles, the vehicle model or model year on which a particular part was installed, the reason for any given installation, or the purchaser's intended use of the components sold.

Ford is providing the total number of Ford service replacement HPFPs by part number (both service and engineering) and month/year of sale, where available, in Appendix J. Information pertaining to production and service usage for each part number, and supplier point of contact information, is included in Appendix J. Service part sales for Canada are also provided in Appendix J in response to Request 19. Ford is not aware of any other vehicles that contain the identical subject components.

Request 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.

Answer

Basic functional diagrams of the fuel systems used in the peer vehicles, including system components and flow paths, are provided in Appendix K1 in response to Request 14a.

Fuel system diagrams with operating specification ranges and filter mesh sizes are provided in Appendix K2 in response to Requests 14b, 14c, and 14d. Filter replacement criteria are included in the scheduled maintenance section of Ford's Diesel Supplement guide. Copies of the Diesel Supplement guides for model years 2009 through 2012 are provided in Appendix L.

Additionally, descriptions of all the scheduled maintenance requirements for the peer vehicles, including the requirements pertaining to the fuel system, are also included in Ford's Diesel Supplement guide. Copies of the Diesel Supplement guides for model years 2009 through 2012 are provided in Appendix L in response to Request 14e.

Descriptions of the warning lamps and driver information messages pertaining to the fuel system are also included in Ford's Diesel Supplement guides, which are provided in Appendix L in response to Request 14e. As described on Page 9 of the 2009 model year Diesel Supplement guide, a water in fuel warning light will illuminate in the instrument cluster when the ignition is turned to start (as part of the light function check) and when the Horizontal Fuel Conditioner Module (HFCM) has a certain quantity of water in it. For vehicles equipped with a message center in the instrument cluster, "WATER IN FUEL DRAIN FILTER" will be displayed in the message center in addition to the water in fuel warning light. If the warning light illuminates when the engine is running, the Diesel Supplement guide instructs the operator to stop the vehicle as soon as safely possible, shut off the engine and drain the HFCM, and warns that allowing water to stay in the system could result in extensive damage to, or failure of, the fuel injection system. Additionally, on Page 40 of the 2009 model year Diesel Supplement guide, it states that water should be drained from the HFCM whenever the warning light comes on. It also states that the water in fuel warning light will come on when approximately 0.13–0.16 pints (60–75 ml) of water accumulates in the module, and that if the water volume is allowed to exceed this level, the water may be passed through to the engine and may cause fuel injection equipment damage. The secondary fuel filter is capable of collecting an additional 50ml of water until the filter saturates.

The Diesel Supplement guides for the other peer vehicle model years have similar verbiage regarding the water in fuel warning light, except that beginning with the 2011 model year guide and the introduction of the 6.7L engine, the guide states that the water in fuel warning light will illuminate when approximately 0.32 pints (150 ml) of water accumulates in the Diesel Fuel Conditioner Module (DFCM). Also, beginning with the 2011 model year, the 6.7L engine is equipped with a low fuel pressure detection system which may display "LOW FUEL PRESSURE" in the message center display in the instrument cluster. If this message is displayed, the Diesel Supplement guide explains what action should be taken, depending on whether the message was displayed during cold start or cold operation, low fuel operation, or normal operation.

The requested information regarding Diagnostic Trouble Codes is provided in Appendix M1. The requested information regarding limp-home modes is provided in Appendix M2 with a request for confidentiality under separate cover to the agency's Office of the Chief Counsel pursuant to 49 CFR Part 512.

Request 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. Pump maximum output/discharge pressure;
- e. Pump minimum inlet/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.

Answer

The HPFP used on 2009 and 2010 model year peer vehicles with the 6.4L diesel engine is a Continental (Siemens) Model Number 2.3+. The HPFP used on 2011 and 2012 model year peer vehicles with the 6.7L diesel engine is a Bosch Model Number CP4.2.

Cross-sectional diagrams of the subject components used in the peer vehicles are provided in Appendix K1.

The ratio of pump speed to engine speed is 1:1 for both the 6.4L and the 6.7L HPFPs.

Fuel system diagrams with the requested HPFP pressures are provided in Appendix K2.

The durability specification for the HPFP in the peer vehicles is the same as the durability specification for the diesel engine assembly in the peer vehicles, which is 10 years or 250,000 miles, whichever occurs first.

Ford notes that it was unable to locate information pertaining to material composition and specifications of HPFP drivetrain components. Ford purchases the HPFP as a "black box" assembly and suppliers typically do not provide the material composition and material specifications for internal HPFP components such as the drivetrain components (e.g., plunger, plunger base, shoe, foot, rider, roller, roller shoe, cam).

Ford is providing available failure mode and effects analyses in Appendix H - Design FMEAs and Supplier Related Documents, and Appendix N with a request for confidentiality under separate cover to the agency's Office of the Chief Counsel pursuant to 49 CFR Part 512.

Request 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.

Answer

Documents responsive to Request 16a are provided in Appendix H – Supplier Related Documents with a request for confidentiality under separate cover to the agency's Office of the Chief Counsel pursuant to 49 CFR Part 512. Available tabular summaries of field return subject components for the peer vehicles are provided in Appendix O.

Request 17

Provide the following information regarding diesel fuels sold in the United States, and test fuels used by or for Ford 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 Ford and other documents in the possession of and reviewed by Ford 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 Ford considers in its evaluations of HPFP performance/durability and state the ranges in those properties that Ford 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 Ford in testing the subject component, including an explanation of the basis for the lubricity specification;
- d. Describe how Ford 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, Ford with gasoline contaminated test fuels, including the purpose of the test, the amount of contamination, the test conditions and the test results;
- f. Provide Ford'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 Ford'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 Ford has provided to its customers.

Answer

Ford notes that some of the information requested in Request 17a has been previously submitted to the agency by the U.S. Alliance of Automobile Manufacturers (AAM). Other requested studies, surveys and documents are provided in Appendix P. Additional studies, surveys and documents are provided in Appendix Q with a request for confidentiality under separate cover to the agency's Office of the Chief Counsel pursuant to 49 CFR Part 512.

The diesel fuel properties that Ford considers regarding HPFP performance and durability are lubricity, viscosity, water content, total acid number, and oxidation stability. Statistics related to these properties, where available, are being provided in the appendices referenced above. Additional statistical measures can be calculated by the agency using the previously referenced diesel fuel surveys that have been previously submitted to the agency by the AAM, or that are provided in the appendices referenced above.

Additionally, although not a petroleum diesel fuel property, biodiesel content is another property that Ford considers with regards to HPFP performance and durability. Biodiesel typically provides favorable lubricity properties; however, the fatty-acid methyl esters (FAME) of biodiesel

can reduce the stability of the finished blend and oxidize easily, compared with petroleum diesel fuel. If biodiesel is permitted to oxidize, it produces reaction products (acids and peroxides) that can damage or degrade components.

Ford does not conduct any component testing of the HPFP, but does conduct engine system and complete vehicle testing. Ford has several diesel and biodiesel test fuel specifications, and two of these diesel fuel specifications that relate to low lubricity; XE-M4CX709-B - Worldwide Diesel Engine Durability, Poor Lubricity Low Viscosity, and XE-M4CX749-A - Worldwide Worse Case Lubricity Marginal Viscosity, are provided in Appendix R with a request for confidentiality under separate cover to the agency's Office of the Chief Counsel pursuant to 49 CFR Part 512. If the agency is interested in other Ford diesel or biodiesel test fuels, please advise. The basis for the lubricity specification contained in Ford's test fuel specifications originates from field fuel surveys, primarily on the average and maximum values.

Automobile and engine manufacturers from around the world participate in the development, approval process and publishing of the Worldwide Fuel Charter. The Charter was first established in 1998 to promote greater understanding of the fuel quality needs of motor vehicle technologies and to harmonize fuel quality worldwide in accordance with engine and vehicle needs. The diesel fuel categories contained in the Worldwide Fuel Charter recommend a Lubricity maximum limit of 400 microns as measured by the HFRR (High Frequency Reciprocating Rig) @ 60°C.

As explained in the Worldwide Fuel Charter 4th Edition dated September 2006;

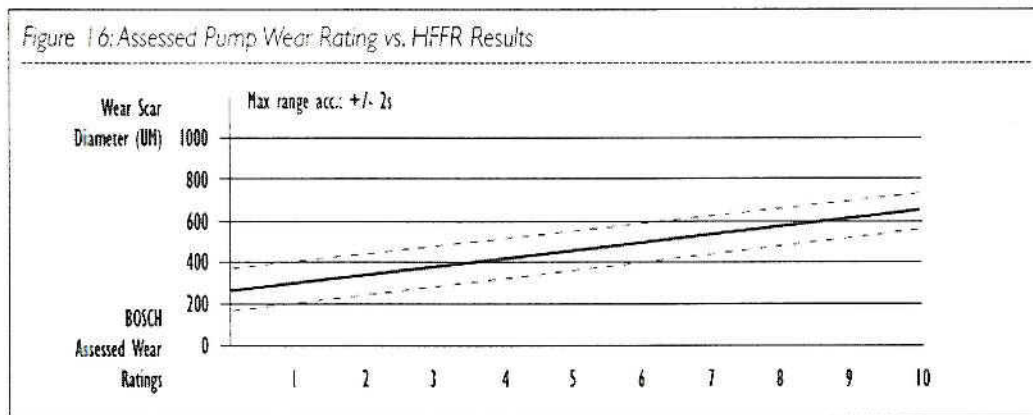
"The lubricating components of the diesel fuel are believed to be the heavier hydrocarbons and polar fuel compounds. Diesel fuel pumps, without an external lubrication system, rely on the lubricating properties of diesel fuel to ensure proper operation.

Refining processes to remove sulphur tend to simultaneously reduce diesel fuel components that provide natural lubricity. As diesel fuel sulphur levels decrease, the risk of inadequate lubricity also increases; however, poor lubricity has been observed even in diesel fuels with very high sulphur levels. Inexpensive additives can be used instead of changing the refining process to achieve the desired lubricity level.

Influence of Lubricity on Pump Wear

Inadequate lubricity can result in increased tailpipe emissions, excessive pump wear and, in some cases, catastrophic failure. Concerns over problems experienced with fuels with poor lubricity led to a significant international collaboration between oil companies, OEMs, additive companies and pump manufacturers to develop a test method and performance limit for fuel lubricity. The resultant method, the High Frequency Reciprocating Rig (HFRR) procedure, is a bench test that provides good correlation to measured pump effects.

Figure 16 shows the correlation between actual pump wear (measured by Bosch) and HFRR measured wear scar diameter. Bosch's rating scale describes 'normal wear' as less than 3.5 (which corresponds to a nominal HFRR Wear Scar Diameter of 400 mm). With a Bosch wear rating of 4, the pump will have decreased endurance, and ratings above 7 indicate potential fatal breakdown. Figure 16 (from the WorldWide Fuel Charter 4th Edition September 2006):"



Ford has ensured that the HPFP design in the peer vehicles is compatible with diesel fuels sold in the United States through engine and vehicle testing with the previously referenced diesel test fuels. As previously stated, Ford does not conduct any component testing of the HPFP.

Ford purchases and monitors annual fuel surveys taken across the United States and makes appropriate adjustments to its test fuels as warranted. Ford also takes appropriate measures to improve the robustness of its products relative to the fuels being found in the marketplace. Specifically, because of the lubricity levels seen in the annual fuel surveys, Ford requested the supplier of the HPFP used on the 6.7L engine to provide their already developed "wear package" for use with low lubricity fuels.

Ford is not aware of any testing that has been conducted by, or for, Ford on the subject component in these vehicles with gasoline contaminated test fuels. As a result, Ford is not able to provide substantiated assessments of the amounts of gasoline contamination required to produce various effects on engine performance and driveability symptoms. However, based on our engineering judgment, it is likely that the engines used in Ford vehicles would not immediately stall without warning. Assuming that the diesel fuel that was originally in the system met the specification of ASTM D975 and the gasoline that was introduced into the diesel fuel tank met ASTM D4814, the gasoline would degrade the lubricity of the diesel fuel. The lubricity of the diesel fuel still within the system before gasoline was introduced, the properties of the gasoline, and the customer drive cycle are all factors that would affect how long, and how well, the HPFP and engine would continue to operate. Ford fuel systems in the peer vehicles contain a fuel recirculation loop; as a consequence, the diesel fuel that still remained in the tank and return lines would continue to provide some dilution of the gasoline. The engine would still be expected to initially start after the misfuelling event and driveability would degrade until either the HPFP failed or until sufficient gasoline was injected into the cylinder resulting in cylinder damage sufficient to stall the engine.

Ford provides recommendations and warnings regarding diesel fuel quality to its customers both in the literature that is provided with the peer vehicles and on the vehicles themselves. Specifically, warnings and recommendations are provided in the Diesel Supplement Guide, Quick Start Up Guide, Warranty Guide, Diesel Maintenance Tips Customer Letter, and Diesel Vehicle Hang Tag. Copies of the owner literature are provided in Appendix L. Additionally, "ULTRA LOW SULFUR DIESEL FUEL ONLY" is displayed on both the instrument cluster and fuel filler cap of the peer vehicles.

Request 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 Ford 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 Ford 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 Ford 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 Ford has implemented in the peer vehicles or is considering for future production light duty diesel vehicles in the United States market.

Answer

If a technician has verified fuel system malfunction in a peer vehicle, the technician is directed to inspect certain fuel system components for evidence of misfuelling or poor fuel quality per published service procedures. If evidence of misfuelling or poor fuel quality is found, repairs are not covered under warranty. The recommended service procedures for inspecting for evidence of misfuelling or poor fuel quality are included in the job aids that are provided in Appendix F4.

Prior to the first publication of the referenced job aids in March 2011, when a technician requested approval from Ford to replace a HPFP, an inspector was dispatched to the dealership to conduct a vehicle inspection and to collect a fuel sample for analysis. Approval or denial of the technician's request to replace the HPFP would then be based on the results of the vehicle inspection and fuel sample analysis.

If evidence of poor fuel quality is found by the technician, the customer is informed that repairs will not be covered under the vehicle warranty. If the customer is not satisfied with this decision and wants to dispute the technician's findings, the customer may contact Ford's Customer Relationship Center for assistance with dispute resolution as described in the Customer Assistance section of the Owner Guide.

Ford has provided a variety of communications to its technicians pertaining to fuel quality related issues in the peer vehicles and copies of these communications are provided in Appendices F1, F3 and F4 in response to Request 10.

The repair procedures for a peer vehicle that has been misfuelled, for situations where either the engine was started or not started after being misfuelled, or for a peer vehicle that experienced fuel system failure due to metallic debris/contamination in the fuel system, are described in the job aids that are provided in Appendix F4.

Ford provides recommendations and warnings regarding appropriate diesel fuel usage in the owner literature provided with the peer vehicles. Copies of the owner literature are provided in Appendix L. Additionally, "ULTRA LOW SULFUR DIESEL FUEL ONLY" is displayed on both the instrument cluster and fuel filler cap of the peer vehicles. Ford currently has no plans for implementing additional misfuel countermeasures in the peer vehicles.

Request 19

Provide Ford'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 Ford believes may affect this analysis].

Answer

Ford understands that there is no alleged defect with respect to any of the peer vehicles¹ that are the subject of this information request. HPFPs are complex, precision pieces of equipment that are designed and tested to certain performance standards. Ford believes that the HPFPs in the peer vehicles are capable of providing long term durability and reliability when the vehicles are operated in accordance with the fuel quality specifications and maintenance instructions that are provided with the vehicle. Diesel fuel lubricity is a significant factor in the drivetrain durability and performance of the HPFPs used on the peer vehicles, which is why Ford has developed and communicated these fuel quality specifications and maintenance instructions. Contamination of the diesel fuel of any type that degrades the lubricity of the fuel beyond acceptable limits may result in damage to the HPFP. Contamination can result from a

¹ As previously noted, because the "peer vehicles" are trucks, which typically are subject to much more severe service than the vehicles that are the subject of this investigation, and are frequently used in fleet service, may be driven by numerous operators, and may not receive the same maintenance and care as a personally owned vehicle, these trucks may not be "peers" in the sense the agency typically compares "peer vehicles."

misfuelling event where the customer either intentionally or unintentionally adds a contaminant to the fuel tank, or can occur when a customer ignores fuel related warnings, such as the water in fuel warning light on the instrument cluster. This is also why Ford's systems incorporate features to help protect against poor quality fuels, such as the water in fuel separator system.

During development of the 6.7L engine, Ford further addressed the risk of low lubricity fuel by specifying that HPFPs include a "wear package" that the supplier had developed for pumps that were intended for use in markets where low lubricity fuel was known to be a concern. Additionally, the fuel system on the peer vehicles is a "return" type system that returns some of the fuel not used by the injectors to a point in the system upstream of the filters. This feature provides additional filtering of fuel that may be contaminated.

Furthermore, when comparing car vs. truck diesel powertrain reliability and performance, it is important to be aware of duty cycle and customer usage differences in addition to understanding design related differences. Factors such as more severe and varied duty cycles, rapid mileage accumulation, fleet and commercial usage, and non-traditional fuel sources can all affect powertrain reliability and performance and need to be taken into account when attempting to make comparisons between car and truck diesel powertrains.

United States vs Canada Comparison

Ford records indicate that the approximate total number of subject vehicles sold in Canada is 67,850. The approximate number of subject vehicles sold in Canada by model year and engine is shown below:

Model	Engine	2008 MY	2009 MY	2010 MY	2011 MY	2012 MY
F-250 thru F-550	6.4L Diesel	29,800	8,250	5,900	0	0
F-250 thru F-550	6.7L Diesel	0	0	0	20,950	2,950

The causal warranty repair rates for the subject component for all customer concern codes for both U.S. and Canadian vehicles by model year are shown below:

Country	2009 MY	2010 MY	2011 MY	2012 MY
United States	47 R/1000	18 R/1000	0.6 R/1000	0.0 R/1000
Canada	29 R/1000	12 R/1000	0.4 R/1000	0.0 R/1000

Service part sales for subject component in Canada are provided in Appendix J. The Canadian new vehicle warranty terms are the same as the U.S. new vehicle warranty terms except that mileage limits are expressed in kilometers instead of miles. Warranties that expire after 36,000 miles in the U.S. expire after 60,000 kilometers in Canada. Likewise, warranties that expire after 60,000 miles or 100,000 miles in the U.S. expire after 100,000 kilometers or 160,000 kilometers, respectively, in Canada.

###