

Lawrence Berkeley National Laboratory

Facilities Division Fleet Maintenance Self Assessment



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Executive Summary

The Facilities Division completed a vehicle maintenance self-assessment review in April and May of 2012. The focus of this review is to assess the performance of Fleet maintenance in accordance with DOE, DOT and LBNL policies. This assessment was performed by Gene Tucker, the Facilities Division Safety Manager, Janice Sexson, the Facilities Division Safety Coordinator, Tom Caronna, the assessment Team Leader, Gregory Nauman, and Dan Schrantz. Vehicle maintenance was reviewed for compliance against DOE orders 430.1.580.1, and the Motor Vehicle handbook. Additionally the Facilities Division policy for Operations and Maintenance Manual "Fleet-006" and the Department of Transportation (DOT) Qualification for Drivers and Road Operability were used in the assessment. The frequency of vehicle maintenance, the quality of records, other evidence of work performance, and vehicle user perception of maintenance quality are operations included in the assessment.

Extensive maintenance records for eight separate groups were reviewed and evaluated for the frequency and quality of maintenance. These groups consisted of the MV Transportation Services Shuttle Bus (contract), Fleet vehicles with GSA plates, Agency owned Global Electric Motorcars (GEMs), Transportation Services vehicles, Forklifts, Cranes, Alameda County Fire Department vehicles used at LBNL, and seven vehicles owned by the Earth Sciences Division.

The current process for compiling maintenance information is very time consuming and inefficient. Historical data and maintenance records are manually kept in hard copy files. The review involved examining the paper files kept in six separate locations under the control of six different groups of employees. However, except for the issues outlined in this report, policies are followed and records are maintained. The Fleet "Red Sheet" report utilizes previous service data to schedule next service, but it does not archive the occurrence and frequency of overdue maintenance information.

Quarterly checks are scheduled and performed by employees who are not mechanics. They use a list of six items to indicate safe operating conditions. The workers record the mileage, date and submit for archiving. The document "Maintenance of Fleet Vehicles at LBNL Fleet-006" requires the quarterly inspections be performed by the LBNL mechanic.

Twenty eight interviews were conducted to evaluate the process, specifically convenience, perceived quality of maintenance, and participation in programs outside of fleet services (i.e. Check Sheets, daily, weekly or monthly evaluations and assessments for lights, tires, wipers etc). These interviews were conducted with three managers, four supervisors, and twenty one employee users.

Some redundancies in the Bus maintenance schedule exist. Bus maintenance is scheduled at 45 to 90 day intervals, and after 4,000, 12,000, and 24,000 miles of service. This occasionally results in repeated maintenance days or weeks apart. The contract with MV Transportation should be modified to allow the most comprehensive service schedule to satisfy all requirements so that busses are not needlessly removed from service.

No evidence of a policy addressing the frequency of forklift maintenance was found. An interview with the EH&S Forklift Subject Matter Expert revealed that most forklifts are serviced every 120 days, and a limited number of high use forklifts are serviced every 90 days. With respect to 120 days maintenance (4 months) the average elapsed time between maintenance was 4.5 months and 79 run hours. There is no prescribed maintenance based on run time. The elapsed time exceeded 120 days, 43% of the time. The process for taking a forklift out of service is informal. No tag-out procedure (i.e., "Do Not Operate") is in place.

A crane that requires a Class “A” driver’s license and two diesel tanker trucks that require a Commercial driver’s license with a Hazardous Materials certification are used in place by employees who do not possess the proper license to drive these vehicles to new locations. When these vehicles need to be relocated, transportation drivers with the correct license and certification must move those vehicles. This sometimes causes a serious operational delay for critical needs such as fueling standby generators.

The Earth Sciences Division does not inform the Facilities Division of maintenance and use issues associated with their seven vehicles. These vehicles can sit without use or maintenance for extended periods of time. These vehicles are part of the Facilities Division Vehicle database for maintenance and control.

A random sample of GEM inspections indicates the average elapsed time between inspections was 3.72 months and 287 run hours. This exceeds the prescribed maintenance frequency of 90 days by 24 %, However this is operating well under mileage. Four out of five GEM users mentioned a parking brake tension issue.

Findings

- There exists no formal out of service tag or control of the keys for vehicles taken out of service ensuring unintended use of the vehicles
- Quarterly checks are performed by LBNL Tool Crib employees, not mechanics as required by the Maintenance of Fleet Vehicles at LBNL Fleet-006 Policy

Observations

The following observations were derived from interviews and document reviews:

- The Fleet “Red Sheet” report does not track historical maintenance information
- The multiple electronic and hard copy record system is scattered amongst six different groups of employees
- A crane that requires a Class “A” driver’s license must be moved by Transportation Services at their availability
- Two diesel tanker trucks that require a Commercial driver’s license with a Hazardous Materials certification are used in place by employees without the proper license to move the vehicles. The process of waiting for a transportation employee to move these vehicles in an emergency situation may become an operational issue
- The Earth Sciences Division does not report maintenance and use issues associated with their seven vehicles to Facilities
- There is no policy addressing forklift maintenance frequency
- The elapsed time for forklift maintenance exceeded 120 days 43% of the time
- Maintenance on the GEMs are overdue on average by 24 %
- Parking brake tension issues are mentioned by 4 out of 5 GEM users interviewed
- Some redundancies in the bus maintenance schedule exist that cause busses to be taken out of services days or weeks apart for the same service

Noteworthy

There were no noteworthy practices identified.

Recommended Corrective Actions

The following recommended corrective actions have been entered into the Corrective Action Tracking System (CATS) database-CATS # 9141 1-11

- Implement a single electronic record system, under one primary administrator that saves all history and is able to track and trend metrics as well as perform other types of analysis. The use of a Fleet Management consultant may be considered in the selection of the appropriate records management program
- Develop a preprinted Out of Service tag and control the keys of vehicles taken out of service ensuring unintended use of the vehicles
- Require rigging crew employees to obtain and maintain class "A" driver's license
- Require Plant Maintenance Technicians to obtain and maintain class "C" commercial drivers license and Hazardous material certification to drive the two diesel tanker trucks
- Agree on a Memorandum of Understanding (MOU) between the Facilities Division and the Earth Sciences Division for the seven vehicles assigned to Earth Sciences that defines the reporting requirements for use notifications, inspections, maintenance, and driver qualifications
- Develop and include in Fleet Maintenance Policy #006 a fleet maintenance schedule for forklifts
- Track forklift maintenance towards improving the current 43% of time overdue maintenance
- Improve the GEM maintenance timing so that the average elapsed time between inspections is closer to the quarterly maintenance requirements
- Examine the issue of parking brake tension within the GEMs to determine how to address this issue
- Modify the bus contract to eliminate unnecessary maintenance
- Discontinue the practice of using Tool Crib employees to complete monthly checks of vehicles, or change policy to allow this practice

Introduction

The goal of this self assessment is to identify improvements, necessary correction actions or noteworthy practices of the Fleet Maintenance Program.

This review examined all five ISM core values as they pertain to the management of the Fleet Maintenance program.

- **Define the Work**-Fleet Maintenance Documents were reviewed for maintenance expectations.
- **Analyze the Hazards**-The maintenance records were compared to the expectations of maintenance in conjunction to meeting Divisional, DOT, and Laboratory requirements.
- **Develop Controls**-The Fleet Red Sheet report was reviewed to determine if the report allows the Division to track and trend past due maintenance occurrences.

- **Perform the Work**-Documentation of inspections was reviewed and interviews were held with vehicle users to uncover any maintenance issues.
- **Obtain Feedback**- Feedback was gained during the interviews. Users were questioned about the process of removing a vehicle from service, giving up a needed vehicle for maintenance, and any issues with general vehicle repairs.

Focus Area Description

In August 2010, the LBNL Industrial/Transportation Safety and Maintenance Corrective Action Plan Implementation Report team performed verification and validation of two corrective actions from the Lawrence Berkeley National Laboratory Facilities Division Industrial /Transportation Safety and Maintenance Review Corrective Action Plan. The following corrective actions were found to be partially effective (these corrective actions only covered buses, whereas, the finding/issue applies to all vehicles)

- CA 7139-1 Develop and document a standard methodology for ranking priorities based on the equipment and/or location requiring work and the type of work to be performed
- This corrective actions was found to be effective
- CA 7138-1 Immediately following the brake failure incident the LBNL mechanic will begin a weekly brake inspection of all buses
- CA 7138-2 Develop a formal shuttle bus maintenance protocol that supplements the GSA maintenance interval, brakes, brake shoe wear rate, adjusts for brake pad replacement frequency and includes input for Bus Operators Daily Inspection Reports
- CA7138-3 Implement a formal process for taking buses out of service and returning them to service

Current Requirements

All of the vehicle maintenance requirements are outlined in the document Maintenance of Fleet Vehicles at LBNL (Fleet - 006), the Motor Vehicle Handbook, DOE orders 430.1.580.1.

Assessment Scope

Facilities will evaluate the focus area in accordance with Institutional and Divisional requirements. It is essential that the Facilities Division continue to ensure the processes and programs are functioning in a manner that will implement an effective program of maintenance with Fleet Vehicles that operate on and off the property.

The scope of the Fleet Maintenance Self Assessment Review includes bus, GEM vehicles, GSA leased vehicles, transportation vehicles, forklifts maintenance processes and includes:

- Examination of maintenance standards
- Examination of maintenance records
- Review of maintenance corrective actions
- Examination of process for obtaining vehicle maintenance
- Verifying the closure of identified findings and their corrective actions

- Reviewing the corrective actions and the associated documents to ensure that the documents meet the intent of the corrective action(s)
- Conduct field verification to determine whether the process is being implemented both in principle and practice
- Review newly submitted work orders with a planner/scheduler
- Twenty eight interviews including Resources Department Head, Facilities Division Bus Technicians, MV Transportation Drivers, and Craft Employees
- Observation of daily maintenance process for the new bus contract before the beginning of the daily runs

Documentation reviewed:

1. LBNL Industrial/Transportation Safety Maintenance Corrective Actions Plan Implementation Report (Sept 2010)
2. Lawrence Berkeley National Laboratory Facilities Division Industrial/Transportation Safety and Maintenance Review Corrective Action Plan (March 2009)
3. Industrial/Transportation Safety and Maintenance Review at the Lawrence Berkeley National Laboratory (Dec 2008)
4. LBNL Effectiveness Review for the Shuttle Bus Brake Failure Incident on September 3, 2008
5. MV Transportation Subcontract No. 6902624 Modification No.4
6. MV Transportation, Inc Maintenance Procedure Manual
7. DOE Order 430.1B, Contractor Requirements Document, Attachment 2, Section 5.a
8. 10 CFR 851, Appendix A Section 9
9. Corrective Action Tracking database CATS # 6871, 6872, 6873, 6875
10. Facilities Operations Maintenance Management program (July 2009)
11. Maintenance Scorecard
12. Weekly bus service meeting
13. LBNL Fleet Vehicle Maintenance Procedure (Fleet-001), 9/4/2009
14. LBNL Fleet Vehicle Maintenance Procedure (Fleet-003), 8/19/2010
15. LBNL Fleet Vehicle Maintenance Procedure (Fleet-004), 8/19/2010
16. LBNL List of Vehicles
17. LBNL Vehicle Maintenance Records

Assessment Results

The Facilities Division completed a vehicle maintenance Self-Assessment review in April and May of 2012. The focus of this review was to assess the performance of maintenance in accordance with DOE, DOT and LBNL policies.

Maintenance records for the last two years were reviewed for compliance against DOE orders 430.1, 580.1, and the Motor Vehicle Handbook. Additionally, the Division Policy for Operations and Maintenance Manual “Fleet-006” and the DOT Qualification for Drivers and Road Operability were used in this assessment.

Areas of assessment included the frequency of maintenance, the quality of records, evidence of work performance, and vehicle user perceptions of maintenance quality.

Vehicle Maintenance Practices and Procedures

Vehicle maintenance is scheduled and performed under the Facilities Division procedure “Maintenance of Fleet Vehicles at LBNL (Fleet 006)” dated October 1, 2010. The Fleet Maintenance document identifies the maintenance required for each classification of LBNL vehicles. The three main categories of vehicles are GSA, E-Plate and Global Electric Motorcars (GEM).

Fleet Red Sheet Report

Inspections and Maintenance of GSA owned vehicles are tracked and scheduled using the Fleet Red Sheet Report located in MAXIMO. This report is a scheduling tool only. It is not a database which stores historical data. The report logs last service/inspection dates and mileage, computing the next specified date or mileage to determine the next service/inspection due date. This program provides a 30 day notice of upcoming maintenance by flagging the scheduled date. If a service or inspection is not performed by the due date or mileage the vehicles is flagged “red” in the database. The last column of the report tracks when a Quarterly Check is due, but it is unclear how this is tracked since there is no Quarterly Check column for reference.

The Fleet Red Sheet Report appears to be working satisfactorily as a maintenance scheduling tool, but because it does not store historical data, it is not useful for data analysis or trending. The report is unable to track how many times any particular vehicle went “red” before servicing, or how many vehicles across the fleet are “red” before servicing for any one period. Once the overdue service/inspection is completed all previous overdue history is lost. The Fleet Manager should implement a single electronic record system, under one primary administrator that saves all history and is able to track and trend metrics as well as perform other types of analysis. The use of a Fleet Management consultant may be considered in the selection of the appropriate records management program

General Service Administration Vehicles

In addition to the Fleet Red Sheet Report for scheduling, each vehicle is assigned a maintenance folder containing its pertinent maintenance records. As a check of the accuracy of the records and adherence to maintenance procedures, twenty GSA vehicle maintenance folders were selected at random to examine data on brake inspections intervals, tire inspections intervals, and GSA maintenance intervals. The twenty vehicles represented 57 data points of inspections or maintenance performed by the vendor (Attachment A).

The average elapsed time between visual brake inspections is eleven months and 1,803 miles. This compares favorable to the one year or 3,750 miles dictated by the LBNL specifications. The elapsed time between visual brake inspections exceeded the one year goal 29% of the time. The longest elapsed time between brake inspections for a vehicle was 20 months though the mileage was still only 2,169 miles. This is well below the 3, 750 mile maximum. Only one vehicle’s brake and tire inspections exceeded the mileage limit though not the time limit. This vehicle is used for official travel to and from the Nevada Test Site on a regular basis.

The data for visual tire inspections reveals similar results. The average elapsed time between visual tire inspections was 8 ¾ months and 1,492 miles. The elapsed time exceeded one year 10% of the time. The longest elapsed time between tire inspections which exceeded one year was sixteen months, with an elapsed mileage at 2,296 miles, still below the 3,750 maximum.

GSA Maintenance vehicles have an average elapsed time between maintenance of 13 .68 months which exceeds the one year limit. The average elapsed miles were 2,550 miles, which is almost 5,000 miles under the maximum or 7,500 miles. The elapsed time exceeded one year 50% of the time. The longest elapsed time between GSA maintenance for a vehicle was 2.26 years, though the mileage was still only 4,496 miles, below the 7, 500 mile maximum. The mileage maximum was not exceeded for any vehicle in the sample. This random sample showed the GSA maintenance met the one year elapsed time schedule 50% of the time and came well under the mileage limit for all GSA vehicles.

Retrieval of Vehicles

Currently, when a vehicle is flagged “yellow” in the “Red Sheet” indicating service is due within 30 days or 100 miles, the fleet administrator sends an email notifying the operator to deliver the vehicles as soon as possible to the LBNL garage for its subsequent delivery to the vendor’s shop. It is estimated by the Fleet Manager that about 85 % of the time the operator’s response is timely and the vehicle is serviced before its due date. This means that an estimated 15% of the time, the fleet administrator must escalate efforts to retrieve the vehicle. The reported order of escalation is to send multiple emails to the operator, operator’s supervisor, and if these measures are not successful, use the spare keys to take possession of the vehicle before work hours and notify the operator of the action taken.

Forklift

Seven forklift vehicle maintenance folders were selected at random to collect data on maintenance inspections and associated service tags. The forklifts represented 84 data points of inspections or maintenance performed by the vendor and is summarized in a spreadsheet (Attachment C). No evidence of a policy addressing forklift maintenance frequency was found. An interview with the EH&S subject matter expert on forklift maintenance revealed that most forklifts are serviced every 120 days, and a limited number of high use forklifts are serviced every 90 days.

With respect to 120 days maintenance the average elapsed time between maintenance was 127.75 days and 79 run hours. There is no prescribed maintenance dependent on run time. The elapsed time exceeded 120 days 43% of the time. The longest elapsed time between maintenance was 233 days with an elapsed run time of 90 hours. This is the longest elapsed run time between maintenance for any forklift. This random sampling indicates that inspections are generally compliant with the maintenance practices described by the forklift maintenance SME. It is worth noting that the Fleet Red Sheet Report used in this assessment shows that the majority of forklifts are past due for maintenance although the actual maintenance frequency is generally compliant.

Forklift operator interviews determined that visual and functional inspections of forklifts occur daily. The daily vehicle inspections are documented. These documents are kept with the vehicle and collected for long term records management at Buildings 69 and 85. It is not clear why the documents are kept in separate locations.

Removal from Service

When the operator of a forklift experiences or observes a vehicle problem, the operator notifies the program administrator that repairs may be needed. The process of removing the vehicle from service lacks a formality that should include removing the keys and prominently tagging the vehicle with an "Out of Service" tag to prevent inadvertent operation by others before repairs or service can be performed.

Global Electric Motorcars

As a check of the accuracy of the records and adherence to maintenance procedure, fifteen (32%) Global Electric Motorcars (GEMS) maintenance folders were randomly selected to verify compliance with the 90 day maintenance inspections per the document "Maintenance of Fleet Vehicles at LBNL (Fleet-006) and associated service tags. The fifteen vehicles represented 195 data points of inspection or maintenance performed by the vendor.

With respect to 90 day inspections the average elapsed time between inspections was 107 days and 287 run hours (Attachment B). There is no prescribed maintenance dependent on run time for GEMS. The 107 days exceeds the prescribed 90 days frequency by 17 days. The elapsed time exceeded 90 days 47 % of the time. The longest elapsed time between inspections was 368 days with an elapsed run time of 1303 hours. This is also the longest elapsed run time between inspections for any GEM vehicle. This random sample indicates that inspections are not compliant with the document Maintenance of Fleet Vehicles at LBNL (Fleet 006).

Gem Operator Interviews

Interviews were held with five GEM operators. A parking brake tension problem was mentioned in four of the five interviews. GEMS are not inspected by the operators for maintenance or for safety issues before operation. Maintenance of Fleet Vehicles at LBNL (Fleet 006) requires a daily visual inspection prior to operating.

Transportation Vehicles

Vehicle maintenance folders were selected at random for three transportation vehicles. The three vehicles represented 7 data points of inspections or maintenance performed by the vendor and is summarized in a spread sheet (Attachment D).

The average elapsed time between brake inspections was 4 months and 239 miles. This compares favorably to the one year or 3,370 mile requirements. The elapsed time never exceeded one year. The longest elapsed time between brake inspections for a vehicle was .8 months, but the mileage was only 194 miles, well below the 3,750 maximum.

The data for visual tire inspections reveals the elapsed average time between tire inspections was 4.4 months and 80 miles. This compares favorably to one year or 3,350 miles, whichever comes first. The elapsed time never exceeded one year. The longest elapsed time between tire inspections was 7.8 months and the elapsed mileage was 194 miles, far below the 3,750 maximum. This sample showed that the transportation tire inspections have been performed well within the time and mileage limits.

The average elapsed time between maintenance was 13.5 months which exceeds the one year limit, but there was only one data point to indicate this. The average elapsed mileage was unattainable. The

elapsed time exceeded one year 100% of the time. The longest elapsed time between GSA maintenance for a vehicle was 13.8 months. This is not enough data to establish any conclusion.

Two Transportation Drivers interviewed revealed that daily vehicle inspections are conducted at the beginning and end of trips and are compliant with DOT 49 CFR. The inspections checklists are turned in daily to the Transportation administrative assistant to coordinate repairs on any reported deficiencies and to file the checklists.

MV Bus Services

On and offsite transportation of LBNL personnel is accomplished with the use of shuttle busses through a contract with MV Transportation Services. MV provides ten busses, using seven during normal business hours, with three spares for special runs and to replace busses out for maintenance. MV also provides four vans for special runs and bus replacement.

All bus and van equipment is inspected three times daily. A certified mechanic performs a forty-two point inspection every morning prior to the first run of the day (Attachment E). Drivers perform a forty-eight point inspection at the start and end of shift.

Busses and shuttle vans are scheduled for complete inspections every 45 days. This includes removing wheels to inspect brakes, wear on bearings, compressor, and compressed air lines, steering components etc.

Bus Maintenance Schedule													
Mileage	Service Type	Oil Filter	Battery	Steering Fluid	Brake Pads	Tire Tread	Change Fluids	Wiper Blades	Rotate Tires	Transmission Fluid	Drain Air Compressors	Tune Up	Change All Fluids
Every 4,000	A Service	X	X	X	X	X							
12,000 Miles	B Service	X					X	X	X				X
24,000 Miles	C Service	X					X	X	X	X	X		X
36,000 Miles	C & B Service	X					X	X	X	X	X		X
48,000 Miles	D Service	X					X	X	X	X	X	X	X

As part of this review, several hundred records for five randomly chosen buses and two vans were examined (Attachment F). All records were found to be complete 97 % of the time. Maintenance was performed per the contract and as scheduled. Records existed for all three inspection types.

The forty-five day “A Service” offsite inspections were performed with less than 2% exceeding forty-seven days before service. The four thousand mile inspections were performed with less than 2% exceeding eleven miles before service.

The twelve thousand mile “B Service” and twenty four thousand mile “C Service” maintenance was performed per contract. While most were performed slightly ahead of schedule, all were done within less than 1% of the specified time interval.

The forty-eight thousand mile “C Service” maintenance for all buses and vans was performed as per contract. Most were performed slightly ahead of schedule and all were done within less than 0.25% of the specified time interval. Because of the redundant inspections and maintenance requirements, no vulnerabilities could be identified. Each vehicle is inspected and serviced by the vendor a minimum of 19 times in the forty-eight thousand mile interval. Because both of the above offsite inspections run concurrently no vulnerabilities could be identified.

Some of the mechanical issues found during inspection and service are:

- Broken leaf springs-This is a mechanical concern because of the rough roads and terrain
- Tire wear-Outer edge excessive wear on the sidewalls due to lots of turns
- Brake wear-Due to vertical slope, tight turns, and vibration
- Running lights and indicator lights-Wearing out due to vibration from rough roads
- Brake retarder system-Mounted to the drive shaft has minor problems, but not affecting safety or the ability to stop. This is due to the bumpy roads and tight turns intrinsic to the LBL site

All of the above issues are minor and were been discovered during daily inspections. Upon discovery those vehicles were immediately removed from service and sent for repair.

If any bus or van develops a potential mechanical problem, the driver immediately contacts the shuttle bus manager, who will deliver a replacement vehicle and the problematic vehicle is removed from service pending evaluation and/or repair. This is done per MV Policy Appendix G to subchapter B.

MV records are very complete and of excellent quality, both electronic and paper records are kept. Vehicles are serviced on time per the contract. The maintenance appears to be of high quality.

Earth Sciences

The Earth Sciences Division utilizes two large wire Line trucks and five utility vans. While owned by Earth Sciences, the Facilities Division is for their maintenance and control. The vehicles are used as either mobile labs or experimental tools. Because of their infrequent use, these vehicles remain parked for long periods of time. Facilities needs notification prior to intended use in order to perform a maintenance safety check, any required maintenance, and to check certifications and qualifications of potential drivers. The wire line trucks require a Class “B” driver’s license, a medical certificate, an eye exam, and DOT mandated drug testing. When Earth Sciences use these vehicles they hire qualified and certified drivers. Earth Sciences are currently in the process of training a class “B” driver. The five utility vans do not appear to require any special license.

The arrangement between Facilities and Earth Sciences appears to be accomplished by an informal agreement without clear roles and responsibilities.

Cranes

The Facilities Division owns a mobile crane used for various on site functions. To drive this crane from one location to another class “A” driver’s license, a medical certificate, an eye exam, and DOT mandated drug testing is required. The vehicle is currently driven by certified transportation drivers and not by the certificated crane operators.

This vehicle is maintained and inspected as part of the “Fleet Maintenance” program. A review of Fleet records verifies that this vehicle has been properly maintained.

Diesel Tanker

The Facilities Division owns a diesel tanker used to fuel 21 standby generators on the LBNL site only. Drivers are required to carry a commercial driver’s license with a Hazardous Materials certification. This vehicle is maintained and inspected as part of the “Fleet Maintenance” program. A review of the Fleet records verifies this vehicle has been properly maintained.

Fire Department

The Alameda County Fire Department by agreement with LBNL uses four vehicles on the LBNL site. This includes three fire trucks and one Emergency Medical response truck (ambulance). These vehicles are maintained through an external process that meets Alameda County Fire Department standards. Records of maintenance are sent to the Facilities Division and become part of the Facilities Fleet records database.

Reviews of these records show that maintenance is completed per the contract by a certified mechanic. This is accomplished through an external contract between Alameda County Fire Department and a qualified vendor.

Findings

- There exists no formal out of service tag or control of the keys for vehicles taken out of service ensuring unintended use of the vehicles
- Quarterly checks are not being performed by LBNL mechanics as required by Maintenance of Fleet Vehicles at LBNL Fleet-006

Observations

The following observations were derived from interviews and document reviews:

- The Fleet “Red Sheet” report does not track historical maintenance information
- The multiple electronic and hard copy record system is scattered amongst six different groups of employees
- A crane that requires a Class “A” driver’s license must be moved by Transportation Services at their availability
- Two diesel tanker trucks that require a Commercial driver’s license with a Hazardous Materials certification are used in place by employees without the proper license to move the vehicles. The process of waiting for a transportation employee to move these vehicles in an emergency situation may become an operational issue
- There is no policy addressing forklift maintenance frequency.
- The elapsed time for forklift maintenance exceeded the required 120 day period 43% of the time
- Maintenance on the GEMs are overdue on average by 24 %

- Parking brake tension issues are identified by 4 out of 5 GEM users interviewed
- There are some redundancies in the bus maintenance schedule that cause busses to be taken out of service days or weeks apart for the same service

Noteworthy

There were no noteworthy practices identified.

Recommended Corrective Actions

- Implement a single electronic record system, under one primary administrator that saves all history and is able to track and trend metrics as well as perform other types of analysis. The use of a Fleet Management consultant may be considered in the selection of the appropriate records management program if necessary
- Develop a preprinted “Out of Service” tag and control the keys of vehicles taken out of service
- Require rigging crew employees to obtain and maintain class “A” driver’s license
- Require Plant Maintenance Technicians to obtain and maintain class “C” commercial drivers license and Hazardous material certification to drive the two diesel tanker trucks
- Agree on a Memorandum of Understanding (MOU) between the Facilities Division and the Earth Sciences Division for the seven vehicles assigned to Earth Sciences that defines the reporting requirements for use notifications, inspections, maintenance, and driver qualifications
- Develop and include in Fleet Maintenance 006 a fleet maintenance frequency for forklifts
- Track forklift maintenance towards improving the current 43% of time overdue maintenance
- Improve the GEM maintenance timing so that the average elapsed time between inspections is closer to the quarterly maintenance requirements
- Examine the issue of parking brake tension within the GEMs to determine if additional maintenance or corrective actions are necessary
- Examine redundancies in bus maintenance and modify the contract as necessary
- Discontinue the practice of using Tool Crib employees to complete monthly checks of vehicles, or change policy to allow this practice

Conclusions

The Facilities Fleet Maintenance program is greatly improved due to the efforts of the Fleet Team individuals in addressing the September 2010 Department of Energy Berkeley site office LBNL Fleet Vehicle Maintenance evaluation and corrective actions. In 2010 the vehicle records were found to be incomplete and sometimes difficult to locate, and in some cases unavailable. While this self-assessment found the records were complete, of reasonable quality, and easily obtained, some records continue to be kept in paper copies, and in files at scattered locations. The current process does not lend itself to easy tracking or trending issues. The program would greatly benefit from one over all electronic record file that includes all vehicles in the program.

All of the individual vehicle program responsible individuals were found to be knowledgeable of the requirements and implementation of their responsibilities and were focused on meeting the

maintenance goals. The overall program manager meets with his staff frequently and monitors progress and validates program requirements.

Supporting Documentation

The following documentation was reviewed as part of the self assessment.

- Final Report LBNL Industrial/Transportation Safety and Maintenance Corrective Action Plan Implementation September 2010
- LBNL Bus Service Scope of Work November 5, 2009
- Maintenance of Fleet Vehicles at LBNL(Fleet-006)
- Fleet Red Sheet Report
- MV Transportation Modification no 4 to Subcontract no 6902624
- Pre and Post Trip Vehicle Inspections
- MV daily vehicle Inspection Report
- Facilities Division MRO daily vehicle inspection report
- LBNL Industrial/Transportation Safety Maintenance Corrective Actions Plan Implementation Report (Sept 2010)
- Lawrence Berkeley National Laboratory Facilities Division Industrial/Transportation Safety and Maintenance Review Corrective Action Plan (March 2009)
- Industrial/Transportation Safety and Maintenance Review at the Lawrence Berkeley National Laboratory (Dec 2008)
- LBNL Effectiveness Review for the Shuttle Bus Break Failure Incident on September 3, 2008 (5/9/2009)
- MV Transportation Subcontract No. 6902624 Modification No.4
- MV Transportation, INC Maintenance Procedure Manual
- DOE Order 430.1B, Contractor Requirements Document, Attachment 2, Section 5.a
- Code 10 CFR 851, Appendix A Section 9
- Corrective Action Tracking database cats # 6871, 6872, 6873, 6875
- Facilities Operations Maintenance Management program (July 2009)
- Maintenance Scorecard
- 10CFR 851, Appendix A Section 9
- Weekly bus service meeting
- LBNL Fleet Vehicle Maintenance Procedure (Fleet-001), 9/4/2009
- LBNL Fleet Vehicle Maintenance Procedure (Fleet-003), 8/19/2010
- LBNL Fleet Vehicle Maintenance Procedure (Fleet-004), 8/19/2010
- LBNL List of Vehicles
- LBNL Vehicle Maintenance Records

Appendix A Lines of Inquiry

Lines of Inquiry for the Fleet Maintenance Self-Assessment include:

1. Is a method to prioritize maintenance actions established and documented?
2. Is there a process for prioritization within the MAXIMO System?
3. Does the Maintenance Scorecard include an overall management system description?
4. Does LBNL have a scheduled maintenance program for government –owned and GSA-leased vehicles that meet the needs of the site?
5. Is there a formal shuttle bus maintenance protocol that supplements the GSA maintenance interval?
6. Is there a formal process for taking buses out of service and returning them to service?
7. Is there a formal process for taking transportation vehicles, GSA leased vehicles, forklifts, and Gems out of service and returning them to service?

Appendix B Assessment Methodology

It is imperative that Facilities Division continue to monitor and self examine the critical aspect of safely transporting materials and employees. Corrective actions must be monitored to ensure implementation and effectiveness.

A. Persons conducting assessment:

This assessment will be performed by Tom Caronna, Greg Nauman, Dan Schrantz, Janice Sexson, and Gene Tucker.

B. Methodology

- C. Examination of maintenance standards
- D. Examination of maintenance records
- E. Review of maintenance corrective actions
- F. Examination of process for obtaining vehicle maintenance
- G. Verifying the closure of identified findings and their corrective actions
- H. Reviewing the corrective actions and the associated documents to ensure that the documents meet the intend of the corrective action
- I. Conduct field verification to determine whether the process is being implemented both in principle and practice
- J. Review newly submitted work orders with a planner/scheduler
- K. Interview Head, Resources Department, Facilities Division
- L. Interview Bus Technician, MV Transportation
- M. Interview Bus Drivers MV Transportation
- N. Interview Employee, Site Services Resources Department, Facilities Division
- O. Observation of daily

Attachment A. Sample Review of GSA Vehicle Maintenance

Vehicle Lic. No.	Vehicle Type	Brakes - Visual		Elapsed Time (Year)	Elapsed Mileage	Tires - Visual		Brake and Tire Spec. Maint.	Elapsed Time (Year)	Elapsed Mileage	GSA Maintenance		Spec. Maint.	Elapsed Time (Year)	Elapsed Mileage
		Date of Service	Mileage			Date of Service	Mileage				Date of Service	Mileage			
G41-5159A	2004 Ford Pickup	11/9/2010	6857			11/9/2010	6857	1 yr. / 3,750 mi.			9/16/2009	4683	1 yr. / 7,500 mi.		
		10/14/2011	8031	0.93	1174	10/14/2011	8031		0.93	1174	10/14/2011	8031		2.08	3348
G43-4013A	2004 Ford Stake Bed	6/10/2009	26326			1/6/2011	30081	1 yr. / 3,750 mi.			6/10/2009	26326	1 yr. / 7,500 mi.		
		12/7/2009	27258	0.49	932	9/13/2011	30822		0.68	741	9/13/2011	30822		2.26	4496
		9/10/2010	29408	0.76	2150										
		9/13/2011	30822	1.01	1414										
G42-0446G	2009 Chev Pickup	11/13/2009	2982			2/7/2011	5166	1 yr. / 3,750 mi.			11/13/2009	2982	1 yr. / 7,500 mi.		
		2/7/2011	5166	1.24	2184	1/12/2012	7207		0.93	2041	2/7/2011	5166		1.24	2184
		1/12/2012	7207	0.93	2041						1/12/2012	7207		0.93	2041
G41-5551A	2004 Ford Pickup	2/25/2009	9383			12/8/2010	11552	1 yr. / 3,750 mi.			12/8/2010	11552	1 yr. / 7,500 mi.		
		12/8/2010	11552	1.78	2169	11/30/2011	12787		0.98	1235	11/30/2011	12787		0.98	1235
		11/30/2011	12787	0.98	1235										
G42-2219A	2004 Chev Pickup	7/17/2009	15731			11/30/2010	17547	1 yr. / 3,750 mi.			7/17/2009	15731	1 yr. / 7,500 mi.		
		11/30/2010	17547	1.37	1816	11/15/2011	18897		0.96	1350	11/30/2010	17547		1.37	1816
		11/15/2011	18897	0.96	1350						11/15/2011	18897		0.96	1350
G41-4105D	2006 Chev Van	8/12/2009	7915			11/22/2010	10003	1 yr. / 3,750 mi.			8/12/2009	7915	1 yr. / 7,500 mi.		
		11/22/2010	10003	1.28	2088	11/1/2011	11515		0.94	1512	11/22/2010	10003		1.28	2088
		11/1/2011	11515	0.94	1512	2/8/2012	12073		0.27	558	11/1/2011	11515		0.94	1512
G41-5039A	2005 Dodge Van	8/31/2010	8641			8/31/2010	8641	1 yr. / 3,750 mi.			9/1/2010	8641	1 yr. / 7,500 mi.		
		8/11/2011	10005	0.95	1364	8/11/2011	10005		0.95	1364	8/11/2011	10005		0.94	1364

G41-5154A	2004 Ford Pickup	3/15/2010	7347			1/5/2011	10438	1 yr. / 3,750 mi.			1/5/2011	10438	1 yr. / 7,500 mi.		
		1/5/2011	10438	0.81	3091	12/21/2011	11628		0.96	1190	12/21/2011	11628		0.96	1190
		12/21/2011	11628	0.96	1190										
G41-4583B	2004 Ford Pickup	11/10/2010	7479			11/10/2010	7479	1 yr. / 3,750 mi.			11/10/2010	7479	1 yr. / 7,500 mi.		
		10/14/2011	8379	0.93	900	10/14/2011	8379		0.93	900	10/14/2011	8379		0.93	900
G41-4238D	2006 Chev Pickup	12/1/2010	10851			12/1/2010	10851	1 yr. / 3,750 mi.			9/16/2009	7776	1 yr. / 7,500 mi.		
		11/14/2011	13194	0.95	2343	11/14/2011	13194		0.95	2343	12/1/2010	10851		1.21	3075
		2/8/2012	13927	0.24	733	2/8/2012	13927		0.24	733	11/14/2011	13194		0.95	2343
G41-2798F	2007 Ford Pickup	1/15/2011	5172			5/20/2010	4439	1 yr. / 3,750 mi.			5/20/2010	4439	1 yr. / 7,500 mi.		
		5/24/2011	5678	0.35	506	1/15/2011	5172		0.66	733	5/24/2011	5678		1.01	1239
						5/24/2011	5678		0.35	506					
G41-5178H	2009 Dodge Van	12/16/2010	3167			4/7/2010	1665	1 yr. / 3,750 mi.			12/16/2010	3167	1 yr. / 7,500 mi.		
		12/13/2011	5113	0.99	1946	12/16/2010	3167		0.69	1502	12/13/2011	5113		0.99	1946
						12/13/2011	5113		0.99	1946					
G42-1226A	Van	7/8/2009	4594			9/16/2010	7135	1 yr. / 3,750 mi.			7/8/2009	4594	1 yr. / 7,500 mi.		
		9/16/2010	7135	1.19	2541	4/18/2011	8117		0.59	982	9/16/2010	7135		1.19	2541
		9/13/2011	9033	0.99	1898	9/13/2011	9033		0.41	916	9/13/2011	9033		0.99	1898
G41-74151	2003 Chev Van	3/3/2009	9411			1/15/2011	11287	1 yr. / 3,750 mi.			3/3/2009	9411	1 yr. / 7,500 mi.		
		1/15/2011	11287	1.87	1876	7/27/2011	11555		0.53	268	7/12/2010	10948		1.36	1537
		7/27/2011	11555	0.53	268						7/27/2011	11555		1.04	607
G71-0134G	2008 Ford Truck	7/8/2010	4685			7/8/2010	4685	1 yr. / 3,750 mi.			7/8/2010	4685	1 yr. / 7,500 mi.		
		7/28/2011	7913	1.05	3228	7/28/2011	7913		1.05	3228	7/28/2011	7913		1.05	3228
G62-2716K	2010 Ford SUV	12/2/2010	6912			12/2/2010	6912	1 yr. / 3,750 mi.			12/2/2010	6912	1 yr. / 7,500 mi.		
		6/7/2011	10937	0.51	4025	6/7/2011	10937		0.51	4025	6/7/2011	10937		0.51	4025
		10/20/2011	18343	0.37	7406	10/20/2011	18343		0.37	7406	10/20/2011	18343		0.37	7406
G41-	2005	1/12/2011	5087			5/5/2010	4900	1 yr. / 3,750			5/5/2010	4900	1 yr. / 7,500		

1634B	Dodge Van	10/17/2011	5448	0.76	361	1/12/2011	5087	mi.	0.69	187	5/5/2011	53164	mi.		
						10/17/2011	5448		0.76	361	10/17/2011	5448		1.45	548
G41-1667B	2005 Chev Truck	7/21/2010	25528			7/21/2010	25528	1 yr. / 3,750 mi.			7/21/2010	25528	1 yr. / 7,500 mi.		
		12/14/2010	26280	0.40	752	12/14/2010	26280		0.40	752	7/20/2011	27544		1.00	2016
		7/20/2011	27544	0.60	1264	7/20/2011	27544		0.60	1264					
G41-4138D	2006 Chev Van	11/13/2009	4358			11/13/2009	4358	1 yr. / 3,750 mi.			11/13/2009	4358	1 yr. / 7,500 mi.		
		4/23/2010	4905	0.44	547	4/23/2010	4905		0.44	547	4/29/2011	6314		1.46	6314
		4/29/2011	6314	1.02	1409	4/29/2011	6314		1.02	1409					
G41-4236D	2006 Chev Truck	9/16/2009	5036			9/16/2009	5036	1 yr. / 3,750 mi.			5/12/2009	4533	1 yr. / 7,500 mi.		
		1/21/2011	7332	1.35	2296	1/21/2011	7332		1.35	2296	9/16/2009	5036		0.35	5036
		9/16/2011	8636	0.65	1304	9/16/2011	8636		0.65	1304	9/16/2011	8636		2.00	4103
Averages				0.90	1803				0.73	1492				1.14	2550

Attachment B- Sample Review of GEM Maintenance

Vehicle Lic. No.	Vehicle Type	30 Point Inspection		Spec. Maint.	Elapsed Time	Elapsed Run Time
		Date of Service	Hours		(Year)	
E-90947	2009 GEM	1/8/2010	247	.25 year		
		1/12/2010	524	.25 year	0.01	277
		9/14/2010	1138	.25 year	0.67	614
		1/20/2011	1572	.25 year	0.35	434
		5/9/2011	1957	.25 year	0.30	385
		2/13/2012	2948	.25 year	0.77	991
E-90925	2007 GEM	1/19/2009	2895	.25 year		
		4/15/2009	3111	.25 year	0.24	216
		7/7/2009	3591	.25 year	0.23	480
		10/13/2009		.25 year	0.27	
		1/7/2010	4495	.25 year	0.24	
		4/9/2010	4748	.25 year	0.25	253
		7/20/2010	5267	.25 year	0.28	519
		9/10/2010	5509	.25 year	0.14	242
		1/6/2011	5964	.25 year	0.32	455
		5/9/2011	6343	.25 year	0.34	379
		10/13/2011	6858	.25 year	0.43	515
E-90932	2009 GEM	1/8/2010	682	.25 year		
		4/13/2010	1032	.25 year	0.26	350
		7/16/2010	1349	.25 year	0.26	317
		9/15/2010	1564	.25 year	0.17	215

Vehicle Lic. No.	Vehicle Type	30 Point Inspection		Spec. Maint.	Elapsed Time (Year)	Elapsed Run Time
		Date of Service	Hours			
		1/17/2011	1787	.25 year	0.34	223
		8/10/2011		.25 year	0.56	
		5/9/2011	1950	.25 year		
E-202504	2010 GEM	1/3/2011	202	.25 year		
		5/6/2011	553	.25 year	0.34	
		1/10/2011	929	.25 year		376
		1/11/2012	1134	.25 year		205
E-202345	2009 GEM	1/4/2010	145	.25 year		
		4/13/2010	373	.25 year	0.27	
		7/20/2010	467	.25 year	0.27	94
		9/13/2010	560	.25 year	0.15	93
		1/18/2011	908	.25 year	0.35	348
		5/10/2011	1115	.25 year	0.31	207
		10/12/2011	1314	.25 year	0.73	406
		1/11/2012	1416	.25 year	0.67	301
E-90915	2009 GEM	4/20/2009	416	.25 year		
		7/6/2009	683	.25 year	0.21	
		10/7/2009	777	.25 year	0.25	94
		1/7/2010	847	.25 year	0.25	70
		4/9/2010	918	.25 year	0.25	71
		7/1/2010	1033	.25 year	0.23	115
		9/15/2010	1114	.25 year	0.21	81
		1/13/2011	1305	.25 year	0.33	191
		5/10/2011	1416	.25 year	0.32	111

Vehicle Lic. No.	Vehicle Type	30 Point Inspection		Spec. Maint.	Elapsed Time (Year)	Elapsed Run Time
		Date of Service	Hours			
		10/12/2011	1620	.25 year	0.42	204
E-202508	2009 GEM	1/5/2010	203	.25 year		
		4/1/2010	355	.25 year	0.24	152
		6/24/2010	483	.25 year	0.23	128
		9/9/2010	596	.25 year	0.21	113
		1/18/2011	774	.25 year	0.36	178
		5/5/2011	835	.25 year	0.29	61
		9/14/2011	906	.25 year	0.36	71
		12/16/2011	911	.25 year	0.25	5
		3/13/2012	934	.25 year	0.24	23
E-90939	2009	1/5/2010	183	.25 year		
		4/1/2010	464	.25 year	0.24	281
		6/24/2010		.25 year	0.23	
		9/8/2010	990	.25 year	0.21	990
		1/19/2011	1285	.25 year	0.36	295
		5/6/2011	1459	.25 year	0.29	174
		9/12/2011		.25 year	0.35	
		12/12/2011	2004	.25 year	0.25	
		3/13/2012	2200	.25 year	0.25	196
E-202498	2010 GEM	1/13/2011	141	.25 year		
		5/10/2011	754	.25 year	0.32	613
		11/15/2011	1817	.25 year	0.52	1063
		2/13/2012	2284	.25 year	0.25	467

Vehicle Lic. No.	Vehicle Type	30 Point Inspection		Spec. Maint.	Elapsed Time (Year)	Elapsed Run Time	
		Date of Service	Hours				
E90940	2009 GEM	1/4/2010	395	.25 year			
		4/1/2010	633	.25 year	0.24	238	
		7/16/2010	908	.25 year	0.29	275	
		9/13/2010	1106	.25 year	0.16	198	
		1/6/2011	629	.25 year	0.32		
		1/7/2011	1366	.25 year	0.00	737	
		5/6/2011	1610	.25 year	0.33	244	
		9/12/2011		.25 year	0.35		
		12/13/2011	2147	.25 year	0.25		
		3/13/2012	2308	.25 year	0.25	161	
		E-202340	2009 GEM	1/8/2010	106	.25 year	
3/30/2010	249			.25 year	0.22	143	
6/25/2010	383			.25 year	0.24	134	
9/13/2010	510			.25 year	0.22	127	
5/4/2011	785			.25 year	0.64	275	
9/13/2011	934			.25 year	0.36	149	
12/12/2011	1009			.25 year	0.25	75	
3/13/2012	1088			.25 year	0.25	79	
E-90934	2009 GEM	2/3/2010	473	.25 year			
		3/31/2010	581	.25 year	0.15	108	
		6/20/2010	699	.25 year	0.22	118	
		9/9/2010	823	.25 year	0.22	124	
		1/4/2011	1072	.25 year	0.32	249	
		5/6/2011	1236	.25 year	0.33	164	
		9/13/2011		.25 year	0.36		

Vehicle Lic. No.	Vehicle Type	30 Point Inspection		Spec. Maint.	Elapsed Time (Year)	Elapsed Run Time
		Date of Service	Hours			
		12/14/2011	1756	.25 year	0.25	
		3/12/2012	1969	.25 year	0.24	213
E-90949	2009 GEM	1/6/2010	4	.25 year		
		4/2/2010	672	.25 year	0.24	668
		6/25/2010	990	.25 year	0.23	318
		9/16/2010	1238	.25 year	0.23	248
		1/20/2011	1685	.25 year	0.35	447
		5/9/2011	2095	.25 year	0.30	410
		10/12/2011	2758	.25 year	0.43	663
		1/11/2012	3121	.25 year	0.25	363
E-90924	2007 GEM	7/2/2009	1428	.25 year		
		1/19/2009	1483	.25 year		55
		4/21/2009	1802	.25 year	0.25	319
		10/6/2009	2329	.25 year	0.46	527
		2/2/2010	2861	.25 year	0.33	532
		4/10/2010	3048	.25 year	0.18	187
		6/28/2010	3274	.25 year	0.22	226
		9/9/2010	3567	.25 year	0.20	293
		9/14/2011	4870	.25 year	1.01	1303
		12/14/2011	5153	.25 year	0.25	283
		3/12/2012	5327	.25 year	0.24	174
E-90913	2009 GEM	10/13/2008	1882	.25 year		
		4/28/2009	2071	.25 year	0.54	189
		7/6/2009	2183	.25 year	0.19	112

Vehicle Lic. No.	Vehicle Type	30 Point Inspection		Spec. Maint.	Elapsed Time	Elapsed Run Time
		Date of Service	Hours		(Year)	
		10/6/2009	2375	.25 year	0.25	192
		4/20/2010		.25 year	0.54	
		1/21/2011	2561	.25 year	0.76	
		6/13/2011	2718	.25 year	0.39	157
		11/14/2011	2750	.25 year	0.42	32
		2/13/2012	2750	.25 year	0.25	0
				Average:	0.31	287

Attachment C- Sample Review of Forklift Maintenance

Vehicle Lic. No.	Vehicle Type	30 Point Inspection		Spec. Maint.	Elapsed Time (Year)	Elapsed Run Time
		Date of Service	Hours			
MH 198	2008 Hyst Forklift	3/5/2009	92			
		7/7/2009	127		0.34	35
		10/29/2009			0.31	
		11/3/2009	168		0.01	
		2/23/2010	205		0.31	37
		6/22/2010	247		0.33	42
		2/9/2011	295		0.64	48
		6/17/2011	327		0.35	32
		10/1/2011	370		0.29	43
MH 181	1993 Mits Forklift	7/7/2009	1670			
		10/29/2009	1686		0.31	16
		2/23/2010	1702		0.32	16
		6/22/2010	1720		0.33	18
		2/9/2011	1741		0.64	21
		6/17/2011	1756		0.35	15
		10/7/2011	1766		0.31	10
MH 182	1994 Mits Forklift	7/7/2009	2530			
		10/29/2009	2604		0.31	74
		2/23/2010	2662		0.32	58
		6/22/2010	2725		0.33	63
		2/9/2011	2815		0.64	90

Vehicle Lic. No.	Vehicle Type	30 Point Inspection		Spec. Maint.	Elapsed Time (Year)	Elapsed Run Time
		Date of Service	Hours			
		6/17/2011			0.35	
		10/7/2011	2902		0.31	
MH 169	1990 Yale Forklift	2/5/2010	515			
		7/1/2010	516		0.40	1
		10/27/2010	516		0.32	0
		2/7/2011	517		0.28	1
		6/14/2011	518		0.35	1
		10/11/2011	519		0.33	1
MH 192	2001 Deaw Forklift	10/23/2009	294			
		3/8/2010	302		0.37	8
		7/20/2010	325		0.37	23
		2/18/2011	348		0.58	23
		6/24/2011	366		0.35	18
		10/21/2011	380		0.33	14
MH 184	1994 Mits Forklift	6/11/2009	1506			
		10/7/2009	1523		0.32	17
		2/2/2010	1541		0.32	18
		6/1/2010	1554		0.33	13
		10/11/2010	1595		0.36	41
		10/13/2010			0.01	
		4/28/2011	1618		0.54	
		8/10/2011	1640		0.28	22
MH 161	1984 White	6/12/2009	1420			

Vehicle Lic. No.	Vehicle Type	30 Point Inspection		Spec. Maint.	Elapsed Time	Elapsed Run Time
		Date of Service	Hours		(Year)	
	Forklift					
		10/27/2009	1424		0.38	4
		2/3/2010	1426		0.27	2
		6/23/2010	1431		0.38	5
		10/27/2010	1440		0.35	9
		3/31/2011	1445		0.42	5
		7/1/2011	1450		0.25	5
		10/21/2011	1461		0.31	11
				Average:	0.35	22

Attachment D-Sample Review of Transportation Maintenance

Transportation Vehicle Maintenance

Vehicle Lic. No.	Vehicle Type	Brakes - Visual		Spec. Maint.	Elapsed Time-Year	Elapsed Mileage	Tires - Visual		Spec. Maint.	Elapsed Time-Year	Elapsed Mileage	GSA Maintenance		Spec. Maint.	Elapsed Time (Year)	Elapsed Mileage
		Date of Service	Mileage				Date of Service	Mileage				Date of Service	Mileage			
E-303423	1993 Inter Box Truck	7/5/2011	489996	1 yr. / 3,750 mi.	0.30	804	7/5/2011	489996	1 yr. / 3,750 mi.			5/13/2010		1 yr. / 7,500 mi.	1.15	0
		10/22/2011	490800				1/22/2011	490800				7/5/2011	489996			
		1/14/2012	491146				1/14/2012	491146								
E-90499	1985 Chevy Step Van	2/28/2011	8211	1 yr. / 3,750 mi.	0.65	44	2/28/2011	8211	1 yr. / 3,750 mi.	0.65	194	2/28/2011	8211	1 yr. / 7,500 mi.		0
		10/22/2011	8405				10/22/2011	8405								
		1/14/2012	8449				1/14/2012	8449				0.23	44			
E-90906	1998 Isuzu NPR HD	10/22/2011	1842	1 yr. / 3,750 mi.	0.23	1	10/22/2011	1842	1 yr. / 3,750 mi.	0.23	1			1 yr. / 7,500 mi.		0
		1/14/2012	1843				1/14/2012	1843								
		Average:		0.33	239				0.37	80				1.15		

Attachment F- Sample Review of Bus Maintenance

Vehicle #	Required inspections by Mechanic	Inspections by Mechanic performed on time	Required Inspections by drivers	Required Inspections by drivers performed on time	Required 45 Day mechanical inspections services	45 Day mechanical inspections services performed on time	Required 4000 mile services	4000 mile services performed on time
1317	228	228	456	456	6	6	5	5
1325	222	222	444	443	5	5	5	5
1329	225	225	450	450	6	6	5	5
1330	218	218	437	436	5	5	5	5