



PROJECT FOR  
INTEGRATED SOLID WASTE MANAGEMENT MASTER PLAN IN GUJRANWALA

**TIME AND MOTION SURVEY**  
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## **List of Abbreviations**

JICA	:	Japan International Cooperation Agency
CDGG	:	City District Government Gujranwala
GWMC	:	Gujranwala Waste Management Company
SWM	:	Solid Waste Management
JPT	:	JICA Project Team
UU	:	Urban Unit
UC	:	Union Council
WM	:	Waste Manager
RA	:	Research Assistant
SA	:	Survey Assistant
TS	:	Transfer Station
TT	:	Tractor Trolley





## 1. INTRODUCTION

### 1.1 Background

Solid Waste Management (hereinafter referred to as “SWM”) has become a serious problem in Punjab due to rapid urbanisation, uncontrolled population, lack of resources, institutional weaknesses and lack of civic sense towards solid waste management.

The Government of Japan received the official request for the Technical Cooperation to formulate the Master Plan to address improvement of SWM in Gujranwala. In response to the request of the Government of Islamic Republic of Pakistan, the Government of Japan decided to conduct the Project for “Integrated Solid Waste Management Master Plan” in Gujranwala, Punjab, Pakistan in cooperation with the concerned authorities of the Government of Islamic Republic of Pakistan.

In Gujranwala, no organized data, record and information were available for the waste management activities especially for the efficiency of waste collection and transportation vehicles in operation. **Table 1** shows the list of operational vehicles owned by Gujranwala Waste Management Company (hereinafter referred to as “GWMC”). Currently, ninety seven (97) vehicles are utilized for waste collection and transportation. The oldest vehicle was procured in the year 1977 and the latest one was procured in the year 2014. Mini dumpers were introduced by GWMC in the end of 2014. Most of the Arm Roll Trucks were procured in 2009 and the Tractor Trolleys were procured in 1996 by City District Government Gujranwala (hereinafter referred to as “CDGG”) then all the vehicles were transferred to GWMC in 2014.

**Table 1: Operational Vehicles in GWMC**

Items	Functional	Non-Functional	Total
Arm Roll Truck (5m <sup>3</sup> )	22	0	22
Arm Roll Truck (10m <sup>3</sup> )	3	1	4
Tractor Trolley	37	0	37
Mini Dumper	35	0	35
Total	97	1	98

Approximately 900 hand carts are used for the primary collection, and now 35 mini dumpers have also been added in the collection system. 228 containers are placed at different locations of the city Gujranwala comprises of 64 UCs. Domestic waste collected from the 64 urban union councils in Gujranwala City transported to Gondlanwala. Currently, Gondlanwala is used as a temporary disposal site for the municipal solid waste of Gujranwala city. The site is located approximately 8 km away from the centre of the city towards north-northwest. Waste disposal at this site started in March 2014. Approximate area of the dumping site is 4.7 ha (12 Acres) and average depth of land depression is 8 to 9m. **Figure 1** shows the waste collection and transportation scheme conducted by GWMC.

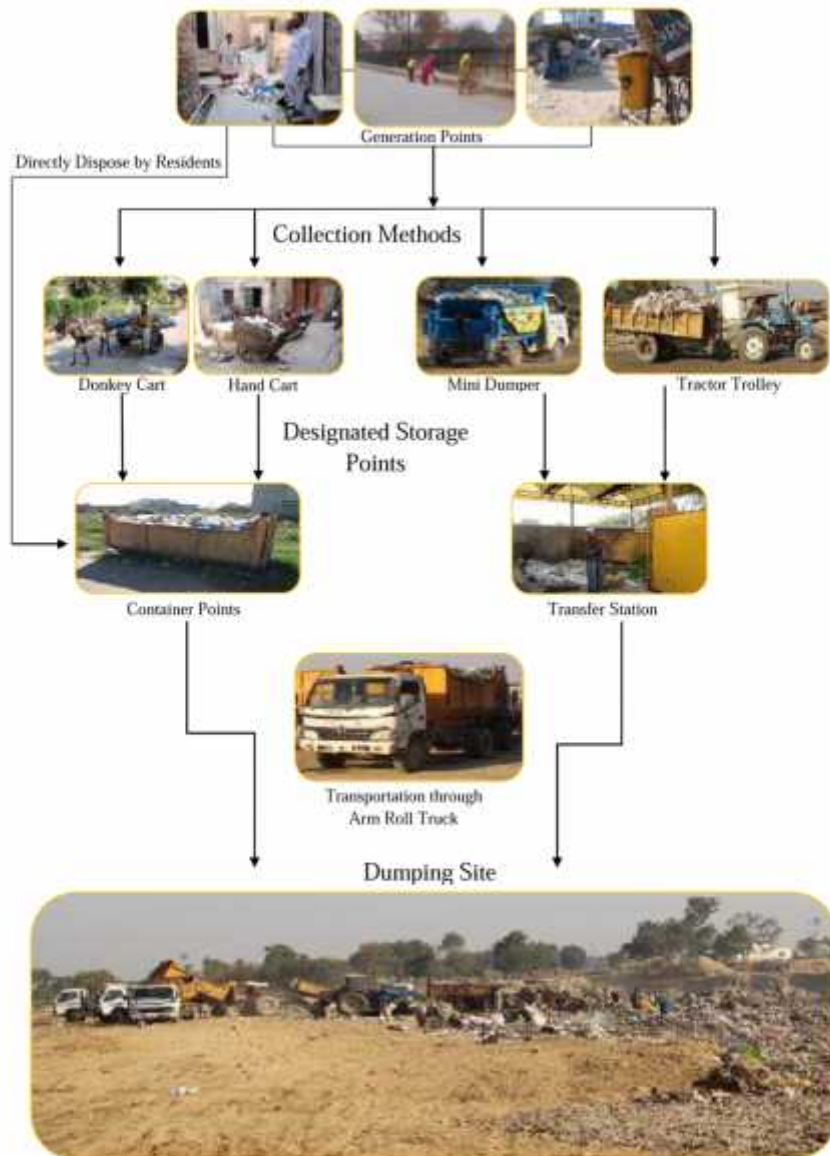


Figure 1: Waste Collection and Transportation Scheme conducted by GWMC

Time and Motion Survey is carried out in terms of necessity for grasping a basic data and information for the work efficiency of the collection and transportation vehicles by type for a reference to formulate the integrated solid waste management master plan, especially for the waste collection and transportation plan.

The survey is carried out by the JICA Project Team with collaboration of Gujranwala Waste Management Company and the Urban Unit, Punjab Government (hereinafter referred to as “UU”).

## **2. OUTLINE AND PURPOSE OF SURVEY**

Time and Motion Survey will be conducted two times for different season. First survey was conducted from 9<sup>th</sup> December to 24<sup>th</sup> December, 2014 with 8 operational vehicles. Survey was carried out for 5 days per vehicle and total 40 samples were collected. Second survey will be carried out in February, 2015 by the different vehicles.

Four (4) teams consisting of Waste Managers, Research Assistants (hereinafter referred to as “Counterparts”) and Survey Assistants carried out the Survey under the guidance of JICA Project Team. Time and Motion Survey comprise the recording of time for travelling, loading and unloading waste, tracking of the collection route& travelling distance, waste collection amount, fuel consumption and waste collection operation efficiency, etc.

JICA project team and the counterparts collected all necessary data and information for conducting the survey including the Type/Capacity/No. of Vehicles, Collection area, Waste discharge methods in collection areas, collection points. (**Annexure-1**)

### **2.1 Objective**

- i. To grasp the operation conditions of the different types of waste collection and transportation vehicles in service
- ii. To evaluate the loading, unloading, travelling and total operational time in the points of the loading, unloading and total operation time in relation with the waste collection and transportation amount, travelling distance and fuel consumption
- iii. To develop a basic data to formulate waste collection and transportation plan

## **3. SURVEY METHOD**

### **3.1 Schedule of Survey**

Following schedule for Time and Motion Survey was finalized after considering all the National Holidays and the coordination with GWMC about vehicle conditions and their exit timings.

		Survey Work Time Schedule																																	
Year		2014																												2015					
Month	November															December														January					
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2		
Day of the Week	T	W	T	F	S	S	H	M	T	F	S	S	H	M	T	F	S	S	H	M	T	F	S	S	H	M	T	F	S	S	H	M	T	F	S
Time and Motion Survey (2 times)																																			
Person in charge (Waste Manager, Researcher, Employee)																																			
Waste Manager or Researcher (Fatima, Usama, Aqsa, Hira I.)																																			
Employee																																			
Data Analysis																																			
Waste Manager or Researcher (Fatima) Employee Test																																			
Waste Manager or Researcher	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Employee	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Provisional of Vehicle (4 cars of Waste Manager)																																			

Figure 2: Schedule of Time and Motion Survey

### 3.2 Vehicle Selection

GWMC provides the waste collection services in 64 urban union councils. The basic criterion of selection of survey area was types of vehicles providing the collection and transportation services in each collection area. Selection of the vehicles was made based on the condition of income group in collection areas, details are listed in **Table 2**.

Life style, habits of residents and condition of streets and roads affect the waste discharge, collection timings and also the amount of waste were taking into consideration for selection of the target areas and the dispatched vehicles.

Table 2: Vehicle Selection Criteria & Operation Days for Time and Motion Survey

Types of Vehicle	Tractor Trolley	Arm Roll Truck	Mini Dumper
Collection Area	Middle Income Area Low Income Area	High Income Area Middle Income Area Low Income Area	Middle Income Area Low Income Area
Number of Vehicle (unit)	2	4	2
Survey Period (day)	5	5	5
Total No. of Samples (day)	40		
Data Coding & Reporting	5 days per survey		

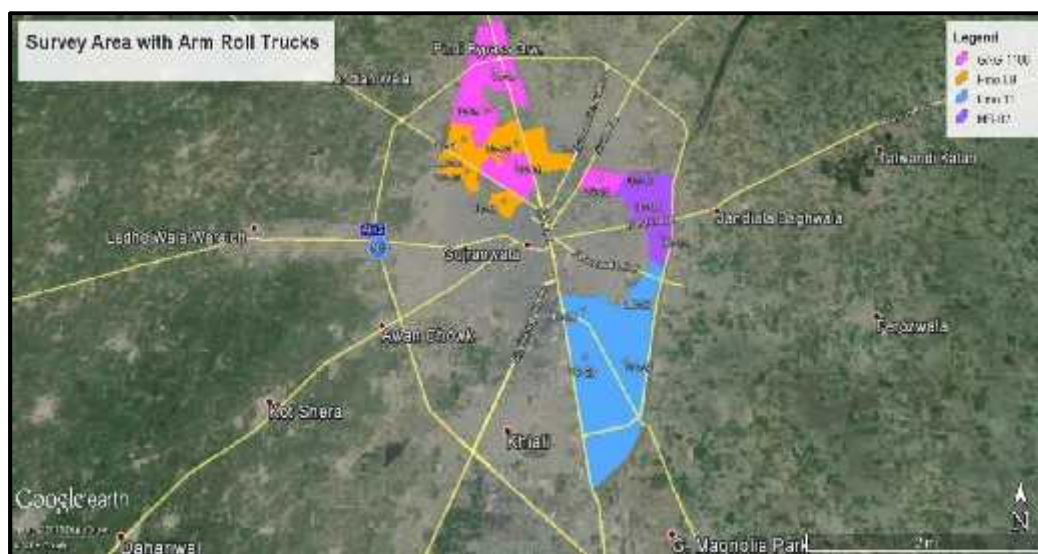
Table 3 shows the selected vehicles with their Identity No., collection area and infrastructure category.

Arm roll truck having 5 m<sup>3</sup> container loading capacity was selected because the 5 m<sup>3</sup> arm roll truck is a main vehicles in terms of the numbers of units currently in service compared with that of the arm roll truck for 10 m<sup>3</sup> container. (Also shown in **Table 1**) Other two major types of vehicles including tractor trolley and mini dumper were also selected for the objective vehicles for the survey.

**Table 3: Objective Vehicles List for Time and Motion Survey**

Sr. No.	Income Category	Vehicle No.	Type of Collection Vehicle	Driver Name	Contact No.	Collection Area/ UC
1	High	Hino 11	Arm Roll Truck (5 m <sup>3</sup> )	Afzaal	0301-6269712	UC-26,27, 28 & 29
2	Middle	Hino 9	Arm Roll Truck (5 m <sup>3</sup> )	M. Arshad	0300-7405564	UC-6, 56, 60, 61 & 62
3	Middle	GAG-1196	Arm Roll Truck (5 m <sup>3</sup> )	Rana Shahid	0345-6231662	UC-4, 8, 15 & 64
4	Low	MB-02	Arm Roll Truck (5 m <sup>3</sup> )	Qadeer Younas	0331-6438640	UC-15, 17, 18 & 19
5	Middle	Holland 2	Tractor Trolley	Tariq	0304-0628251	UC-40
6	Low	TT-9774	Tractor Trolley	Javaid	0345-6572228	UC-46, 35
7	Middle	GAJ-74	Mini Dumper	Haroon Saleem	0345-6571191	UC-39
8	Low	GAJ-60	Mini Dumper	Sarwar Mansha	0312-1795314	UC-19

Service area of each selected vehicle is shown in **Figure 3, 4 & 5**. After decision of the objective vehicles for survey, GWMC coordinated with the vehicle drivers and explained the method of the survey for obtaining their cooperation.



**Figure 3: Survey Area with Arm Roll Trucks**



**Figure 4: Survey Area with Tractor Trolleys**



**Figure 5: Survey Area with Mini Dumpers**

### 3.3 Team Configuration

The survey was carried out with 4 teams consisting of Waste Managers/Research Assistants and Survey Assistant. Configuration is shown in **Table 4**.

**Table 4: Team Configuration and Vehicle Allocation for Time and Motion Survey**

Team #	Waste Manager/Research Assistant	Survey Assistant	Type of Vehicle Chased	
			Week-1	Week-2
1	Aqsa Sadiq	Tabassum Phool	Mini Dumper	Tractor Trolley
2	Fatima Zia	Bashir Masih	Mini Dumper	Tractor Trolley
3	Hina Ishaque	Amir Javaid	Arm Roll Truck	Arm Roll Truck
4	Umama Saleh Qureshi	-	Arm Roll Truck	Arm Roll Truck

### 3.4 Necessary Equipment for the Survey

Four units of GPS device are provided by the JICA project team in the course of survey to record the route, time and coordinates of collection points.

### 3.5 Methodology

All the activities from the starting point of the collection vehicles (i.e. GWMC Workshop hereinafter referred to as “Garage” located at Sheikhpura road, also shown in **Figure 6**) to the collection points and returned to the garage were recorded by time and the routes by GPS device. (**Appendix-I& II**) The main activities carried out during the field survey are summarized as follows.

- Chasing the objective collection vehicles and record the time for each stop/departure by GPS time.
- Recording the mileage of odometer respectively for start of collection work, end of collection work, arrival at disposal site for unloading, start of 2<sup>nd</sup>/3<sup>rd</sup> collection work etc.
- Recording the track of the collection route of each objective vehicle by GPS device.
- Recording the fuel consumption of each vehicle, and
- Noted the road conditions, traffic conditions, condition of collection points, workers behaviour, etc.





**Figure 6: GWMC Workshop**

#### **4. DATA PROCESSING AND ANALYSIS OF SURVEY**

Daily waste collection and transportation activities of the following items were observed and noted on the data recording sheet for each vehicle for 5 operational days, and the data was processed to the total and/or average values as discussed in the following subsections.

- No. of Trips
- No. of Collection Points
- Operational Time
- Mileage Covered
- Fuel Consumed.

##### **4.1 Operational Time**

Three types of vehicles (Arm Roll Truck, Tractor Trolley and Mini Dumper) were observed for the survey.

Operational time was different for each vehicle depending upon the:

- In and out timing from garage
- Time consumed at filling station
- Infrastructure of the collection area
- Traffic conditions
- Collection timings
- No. of loaders
- Distance between the collection points
- Distance from the collection area/point to dumping site (Gondlanwala)
- Speed of the vehicle and condition of the weighbridge.

**Table 5** shows the minimum and maximum time spent for each vehicle in terms of Loading, Unloading and Traveling time. Operational time of Hino-09 is higher than the other arm roll trucks as it serve in 5 UCs, which increase its travelling time.

**Table 5: Maximum and Minimum Operational Time (5 operation days)**

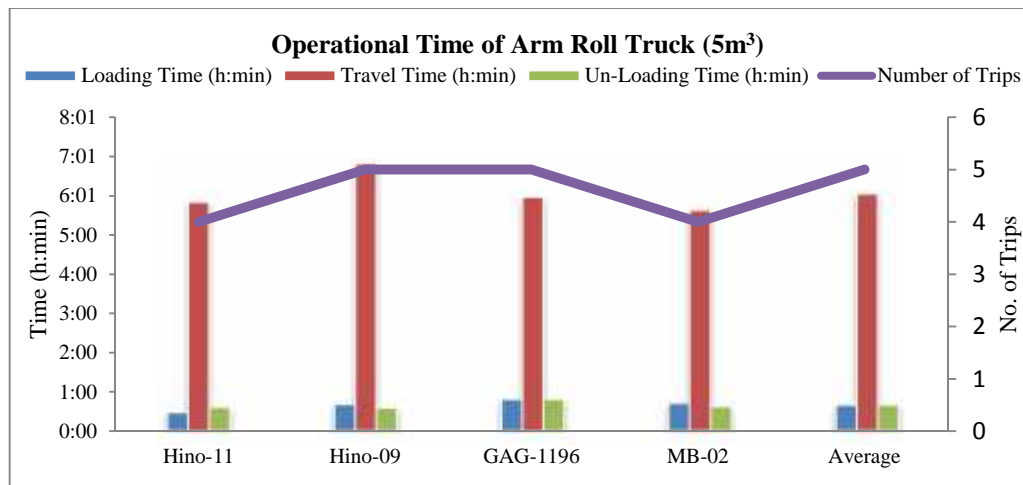
Type of Vehicle	Vehicle No.	Loading Time (h:min)		Travel Time (h:min)		Unloading Time (h:min)		Total Operational Time (h:min)	
		Min	Max	Min	Max	Min	Max	Min	Max
Arm Roll Truck	Hino-11	0:17	0:48	4:39	7:36	0:25	1:06	5:21	8:58
	Hino-09	0:34	0:59	6:02	8:29	0:30	0:47	7:06	9:39
	GAG-1196	0:31	1:13	5:16	6:58	0:31	1:30	6:44	8:18
	MB-02	0:34	0:56	5:30	5:49	0:32	0:47	6:42	7:17
Tractor Trolley	Holland-2	2:17	3:50	2:29	5:25	0:04	0:12	5:34	8:42
	Holland-1	2:19	4:09	3:47	5:45	0:11	0:27	6:24	10:06
Mini Dumper	GAJ-74	3:35	4:57	3:02	4:18	0:27	0:35	8:18	8:34
	GAJ-60	4:33	6:16	3:36	4:29	0:24	0:41	9:06	11:20

**Table 6** shows the average values of operational time distribution of each vehicle. Tables for Operational Time of each vehicle per day of survey are attached in **Appendix III**.

**Table 6** and **Graph 1** show the average operational time of Arm Roll Trucks (5m<sup>3</sup>), loading time of Hino-11 is seen to be less than the others that is 29 minutes for loading of 4 containers as compared to MB-02 who spent 43 minutes also for loading 4 containers. Unloading time of Hino-11 and MB-02 is 37-38 minutes. Similarly, Hino-09 travelled for 6:50 (h:min) for loading 5 containers and GAG-1196 travelled for 5:59 (h:min).

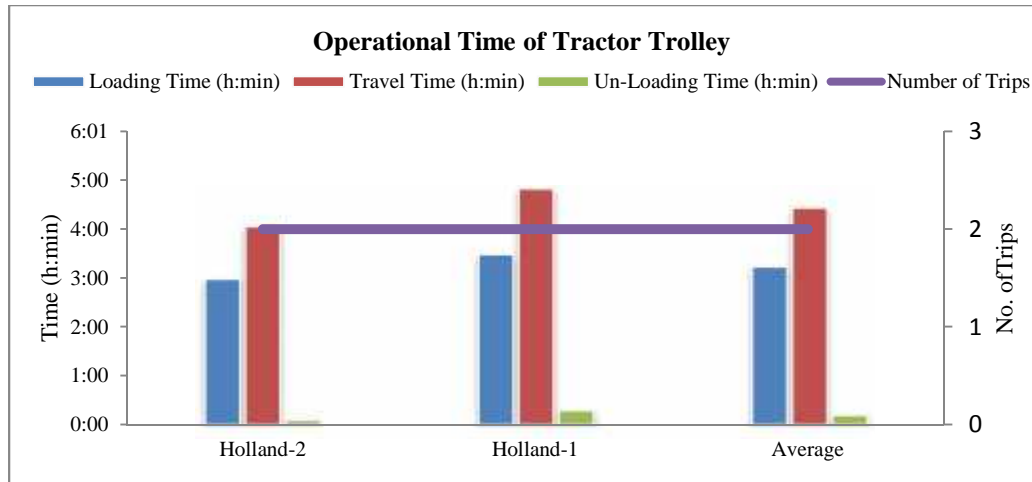
**Table 6: Average Operational Time of Each Vehicle (5 days average)**

Type of Vehicle	Collection Area	Vehicle No.	Loading Time (h:min)	Travel Time (h:min)	Un-Loading Time (h:min)	Total (h:min)
Arm-Roll Truck	UC-26, 27, 28 & 29 (High Income Area)	Hino-11	0:29	5:51	0:37	6:58
	UC-6, 17 TS, 56, 60, 61, 62 (Middle Income Area)	Hino-09	0:41	6:50	0:36	8:07
	UC-4, 8, 15, 17 TS, 52 TS, 64 (Middle Income Area)	GAG-1196	0:49	5:59	0:49	7:38
	UC-15, 17, 18 & 19 (Low Income Area)	MB-02	0:43	5:39	0:38	7:00
Average			0:40	6:04	0:40	7:25
Tractor Trolley	UC-40 (Middle Income Area)	Holland-2	2:58	4:02	0:06	7:08
	UC-46 & 35 (Low Income Area)	Holland-1	3:28	4:48	0:18	8:34
Average			3:13	4:25	0:12	7:51
Mini Dumper	UC-39 (Middle Income Area)	GAJ-74	4:20	3:34	0:31	8:25
	UC-19 (Low Income Area)	GAJ-60	5:04	4:14	0:31	9:50
Average			4:42	3:54	0:31	9:07



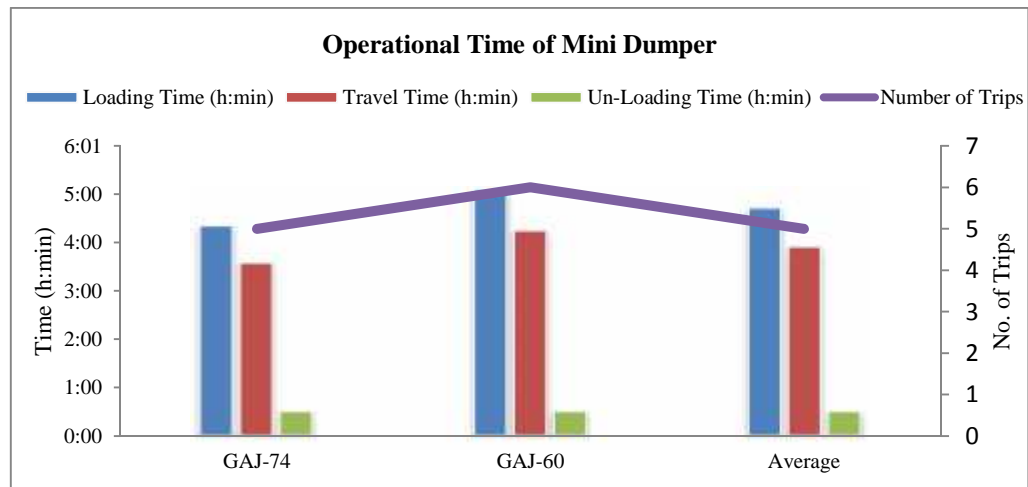
**Graph 1: Comparison of Operational Time of Arm Roll Trucks (5m<sup>3</sup>)**

Tractor Trolley 9774 was selected for survey but it only observed for 1 day, as its engine was suddenly got damaged and repaired in 6 days. Alternate Trolley Holland-1 in the same collection area was observed for the rest of the days. **Table 6** and **Graph 2** indicate the average operational time of Tractor Trolleys. Holland-1 spent 3:28 (h:min) on loading the 261 collection points from low income area and Holland-2 spent it in 2:58 (h:min) from middle income area. Travelling time and unloading time of Holland-1 is also more than Holland-2. In case of tractor trolleys, Holland-1 spent 8:34 minutes for the total operation time because the vehicle collected the waste from 2 UCs, i.e. UC-46 (Qila Deedar Singh Town) and UC-35 (Khiyali Town).



**Graph 2: Comparison of Operational Time of Tractor Trolleys**

**Table 6 and Graph 3** show the average Operational time of Mini Dumpers. Unloading time of GAJ-60 and GAJ-74 is same for 31 minutes for the waste from low income area and middle income area respectively. Operational time of GAJ-60 (mini dumper) is higher than GAJ-74 because it took 5 hrs for loading due to lack of loaders, and also made the 1<sup>st</sup> trip with partially filled dumper.



**Graph 3: Comparison of Operational Time of Mini Dumpers**

#### 4.2 Operation Status of Waste Collection and Transportation of Each Type of Vehicle

Waste collection and transportation operation status of each type of vehicle is different depending upon the following factors:

- Loading time
- Status of waste amount at collection point
- No. of loaders
- Equipment used for loading
- Condition of the vehicle
- Distance between the collection points
- Distance from the collection area/point to dumping site (Gondlanwala).

**Table 7** and **Table 8** show operation status of each objective vehicle in terms of collected and transported waste amount, milage and fuel consumption during the operating time.

**Table 7: Waste Collection Details**

Type of Vehicle	Vehicle No.	Milage (km)		Fuel Consumption (liters)		No. of Trips		Collected Waste Amount (kg)	
		Min	Max	Min	Max	Min	Max	Min	Max
Arm Roll Truck	Hino-11	123	198	38	56	3	5	6,680	14,380
	Hino-09	115.3	145.5	25	37.3	5	5	12,640	19,700
	GAJ-1196	125	150	25.4	34.7	5	5	11,120	14,180
	MB-02	135	145	22	32	4	4	8,700	12,380
Tractor Trolley	Holland-2	33.1	60.4	11.3	19.91	1	2	1,980	3,660
	Holland-1	32.7	67.7	11	17	1	2	2,800	5,680
Mini Dumper	GAJ-74	33.2	91.3	7.79	9.6	4	6	1,800	2,700
	GAJ-60	43.5	70	9	10.36	5	8	2,250	3,600

As shown in **Table 8** and **Graph 4**, the average fuel consumption per day of arm roll trucks vary in the range of 27 and 50 liters per day. Among the four arm-roll trucks surveyed, Hino-11

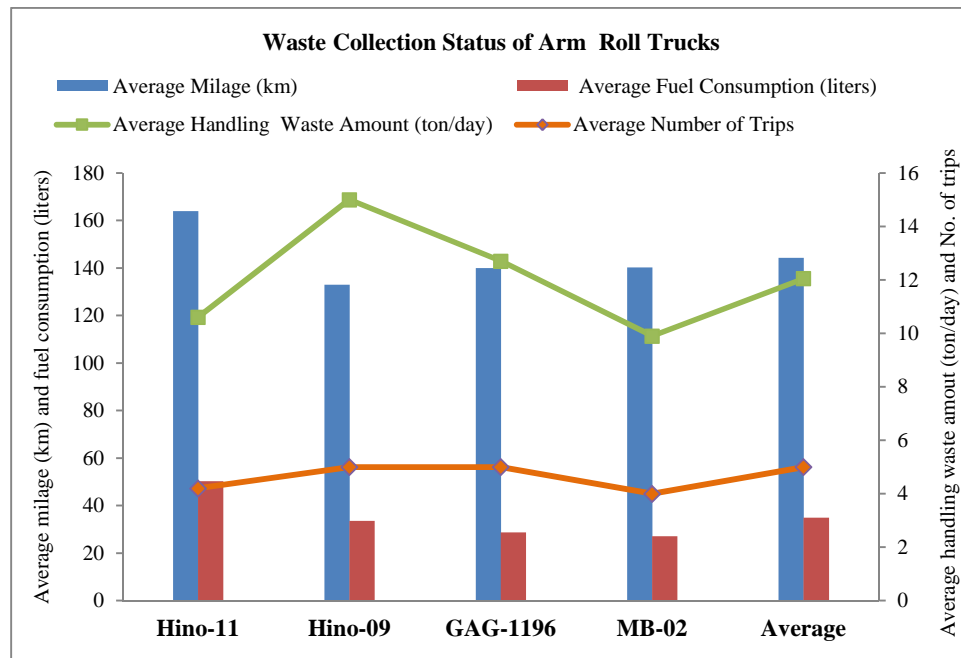
consumed most fuel amount of 50 liters per day due to basically the longest distance travelled at 150 km per day. In average, an arm roll truck (5m<sup>3</sup>) travels 144 km and consumes 35 litre of fuel for 5 trips to dump site (Gondlanwala) and transport 12.1 tons per day.

**Table 8: Average Value of Waste Collection of Each Vehicle per Day**

Type of Vehicle	Collection Area	Vehicle No.	Average Number of Trips	Average Number of Collection Points	Average Handling Waste Amount (ton/day)	Average Mileage (km)	Average Fuel Consumption (liters)
Arm Roll Truck	UC-26, 27, 28 & 29 (High Income Area)	Hino-11	4.2	4.2	10.6	164	50.2
	UC-6, 17 TS, 56, 60, 61, 62 (Middle Income Area)	Hino-09	5	5	15.0	132.94	33.52
	UC-4, 8, 15, 17 TS, 52 TS, 64 (Middle Income Area)	GAG-1196	5	5	12.7	139.94	28.70
	UC-15, 17, 18 & 19 (Low Income Area)	MB-02	4	4	9.9	140.18	27.1
Average			4.6	4.6	12.1	144.27	34.88
Tractor Trolley	UC-40 (Middle Income Area)	Holland-2	1.6	261.8	2.8	48.36	14.37
	UC-46 & 35 (Low Income Area)	Holland-1	1.8	260.8	4.2	52.68	14.4
Average			1.7	261.3	3.5	50.52	14.39
Mini Dumper	UC-39 (Middle Income Area)	GAJ-74	5	455.2	2.3	45.78	8.69
	UC-19 (Low Income Area)	GAJ-60	5.8	397.2	2.6	52.16	9.56
Average			5.4	426.2	2.4	48.97	9.13

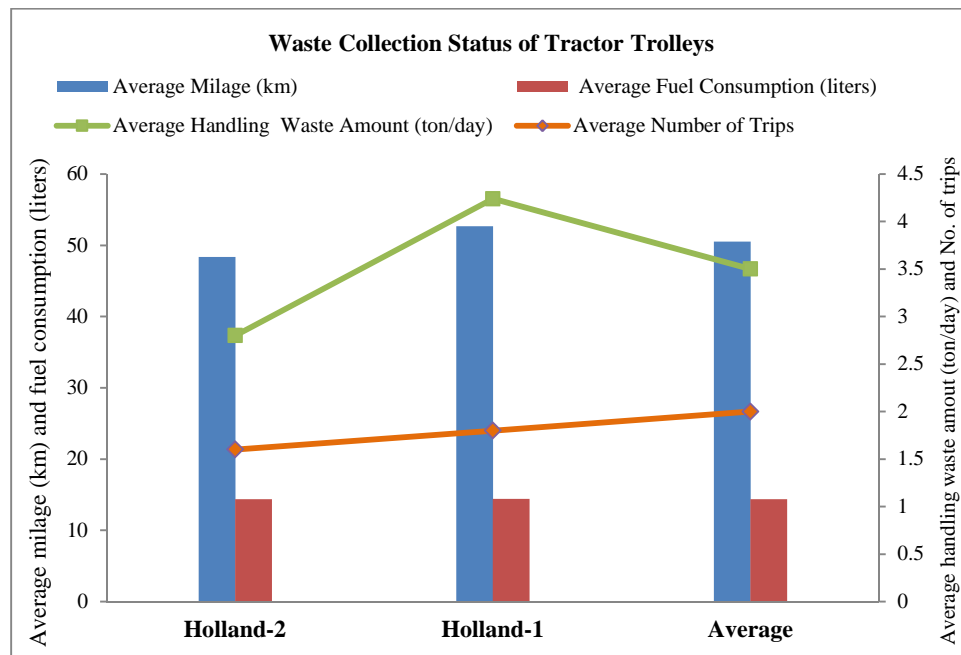
The details of operation status of each type of vehicle are attached as shown in

**Appendix III.**



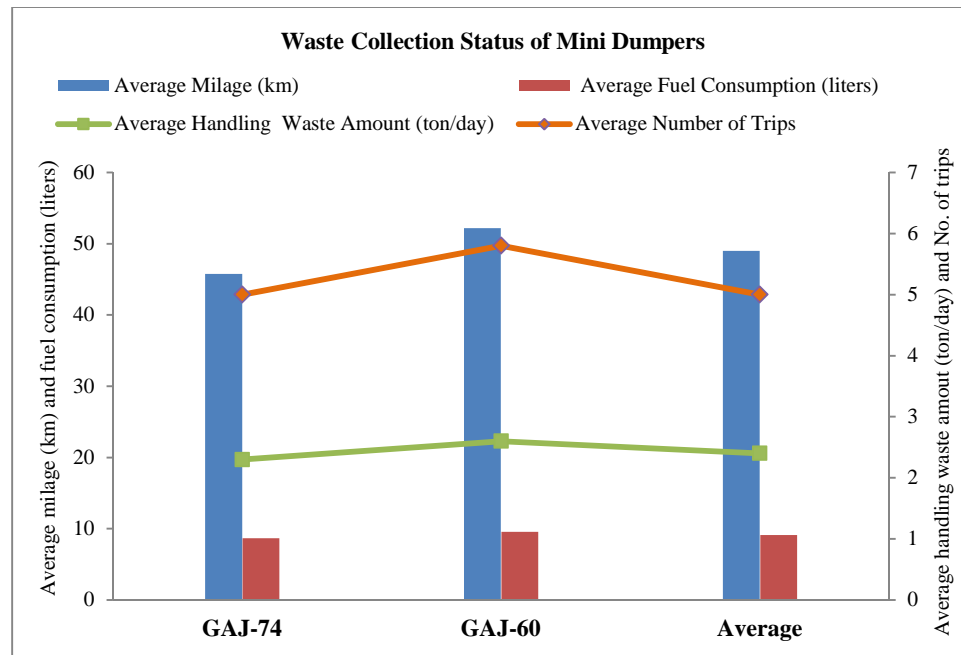
**Graph 4: Waste Collection Status of Arm Roll Trucks**

As shown in **Table 8** and **Graph 5**, tractor trolley travelled 51 km on average and consumed 15 liters of fuel by making 2 trips for collection and transported 3.5 tons of waste to the dump site (Gondlanwala).



**Graph 5: Waste Collection Status of Tractor Trolleys**

Mini dumper run 49 km with 9 liters of fuel for 5 trips to the temporary transfer station (Sabri Chowk and Qadri Darbar) and transported 2.4 tons in average. Reference shall be made to **Table 8** and **Graph 6**.



**Graph 6: Waste Collection Status of Mini Dumpers**

## 5. EVALUATION OF SURVEY RESULT

The primary purpose of mini dumper is to collect the waste from narrow streets and roads where tractor trolley and arm-roll truck are not accessible. Tractor trolley is used for both waste collection and transportation whereas arm roll truck is to transport the waste collected by hand carts and donkey carts (primary collection) to dump site.

The survey results are evaluated based on the average values computed and tabulated in **Table 9** for the key factors of waste collection and transportation activities. As mentioned above, due to the different services allotted to each type of vehicles, the values cannot be compared simply but comparison or evaluation of the performance or the efficiency of three types of vehicles are described based on **Table 9** as presented in the following subsections. The details are attached in **Appendix-III**.

### 5.1 Average Waste Handling Amount (kg)

This value indicates the average handling waste amount per day or shift for each type of vehicle utilizing for waste transportation or collection and transportation or only for waste collection operation. An Arm-roll truck is used only for transferring waste container. The arm-roll truck collects 12 tons of waste per day average and transfers it to the disposal site. The amount of the waste is 3.5 times more than that of a tractor trolley although it cannot be compared simply with the performance of tractor trolley which is used both for waste collection and waste transportation.

Mini-dumpers collect less waste amount compared with tractor trolley which collect and transport waste since mini-dumper has many collection points and waste loading amount per hour is low (517 kg/hr).



**Table 9: Summary of Waste Collection and Transportation Analysis by Vehicle Type**

No.	Evaluation Items	Vehicle Type		
		Arm Roll Truck	Tractor Trolley	Mini Dumper
1.	Average Waste Handling Amount (kg)	12,050	3,502	2,430
2.	Average Milage (km)	144	50	49
3.	Average Fuel Consumption (liter)	35	14	9
4.	Average Loading Time (minutes)	41	194	282
5.	Average Travelling Time (minutes)	365	265	235
6.	Average Unloading Time (minutes)	42	12	31
7.	Average Total Time (minutes)	446	472	548
8.	Average Milage per Unit Fuel Consumption(km/liter)	4.1	3.4	5.4
9.	Average Waste Handling Amount per Unit Distance (kg/km)	84	69	50
10.	Average Waste Handling Amount per Loading Time (kg/hr)	1,7745	1,084	517
11.	Average Waste Amount per Travelling Time (kg/hr)	1,979	793	622
12.	Average Waste Handling Amount per Total Time (kg/hr)	1,620	446	266
13.	Average Waste Handling Amount per Unit Fuel Consumption (kg/liter)	345	245	266

### 5.2 Average Milage (km)

The Arm roll truck is only used for hauling waste container to the disposal site, accordingly, the number of trips and the travelling distance increase. Daily average milage of arm roll truck is 144km, which is approximately three times more than that of the tractor trolley. Tractor trolley is serving for waste collection and transportation and most of the tractor trolleys are old and its travelling performance is low. Therefore, average travelling distance of the tractor trolley per shift is shorter. The mini dumper is allocated in the surrounding area of waste container sites which are used currently as the temporary transfer stations. The mini dumper collects many points and the loading time is long. As the result, average travelling distance per one shift on mini dumper is short.

Daily average milage of both of the vehicles, tractor trolley and mini dumper, is almost the same at 50 km respectively.

### 5.3 Average Fuel Consumption (liter)

This indicates the amount of daily fuel consumption of the vehicle. Daily or per shift fuel consumption amount of arm roll truck, tractor trolley and mini dumpers is 35 liters, 14 liters and 9 liters respectively. The efficiency of the vehicle is compared with the amount of fuel consumption per kilometer.

### 5.4 Average Loading Time (minutes)

Operation of arm roll truck is to load, Transport and unload the waste containers. Therefore, it does not take much time for waste loading and it takes only about one-fifth of the operation time

compared with that of the tractor trolley. On the other hand, mini dumper takes 4 hours and 40 minutes for loading waste, which is almost equivalent to 50 percent of total working time of the day. The efficiency of average loading time of each vehicle will be compared with the average waste loading time per waste amount.

### **5.5 Average Transportation Time (minutes)**

The travelling time of arm roll truck is long. The time is spent for frequent round-trips between the waste container sites and the disposal site. Around 6 hours per day or 80% of the total operating time is spent for the travelling time.

Average travelling time of the tractor trolley is 4 hours and 25 minutes per day. An average transportation time of the mini dumper is 4 hours per day, which is 40% of the total operating time per day. Average travelling time will be used for comparing average travelling time per waste amount.

### **5.6 Average Unloading Time (minutes)**

Unloading time of each type of vehicle varies depending on the numbers of transportation times. The arm roll trucks transport waste containers and unload waste at the disposal site about 5 times per day for spending the total unloading time of 40 minutes.

Meanwhile, tractor trolleys transport waste 2 times and spend 12 minutes for the daily operation. The total unloading time of mini-dumper is 31 minutes for more than 5 times unloading at the temporary transfer station site.

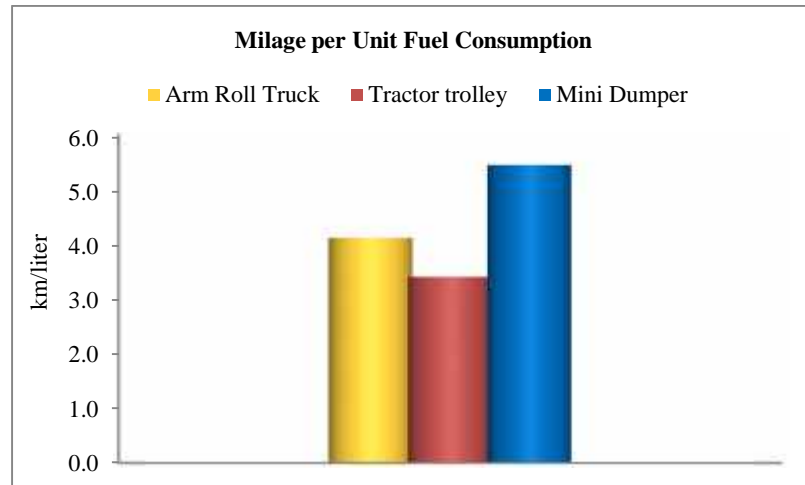
### **5.7 Average Total Operating Time (minutes)**

This indicates the total operating time of each vehicle. The longest total operating time was 9 hours by the mini dumper. An average total operating time per day of arm roll truck and tractor trolley are respectively 7 hours, 30 minutes and 8 hours.

### **5.8 Average Milage per Unit Fuel Consumption (km/liter)**

Average milage per unit fuel consumption of mini dumper is calculated a 5 km per liter which is the highest value among the three objective vehicles. The engine capacity of mini dumper is designed at 800cc, which is relatively small engine capacity compared with that of the other two vehicles and it reflects the fuel consumption efficiency of the vehicle.

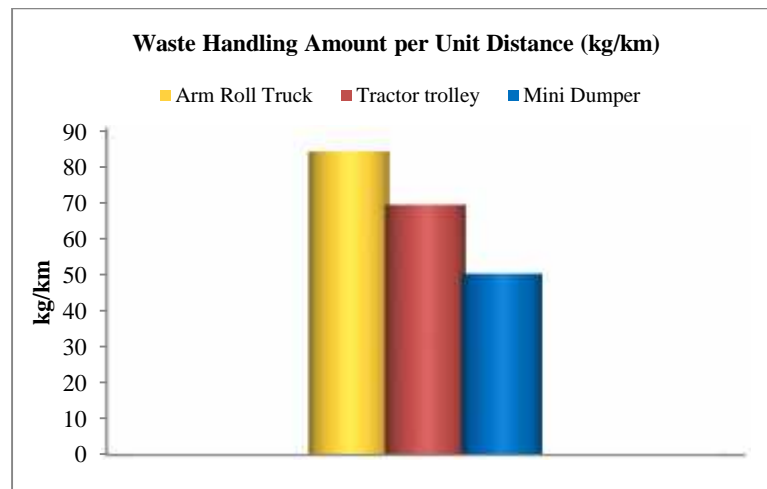
Average milage per unit fuel consumption of tractor trolley is calculated at 3.4 km per liter which is the worst value among the tree vehicles. Tractor trolley is not good at travelling long distance. In addition, the vehicle is used for more than 10 years. Therefore, it is considered that the vehicle is decrepit. Reference shall be also made to the **Graph 7**.



**Graph 7: Milage per Unit Fuel Consumption by Type of Vehicle**

**5.9 Average Waste Handling Amount per Unit Distance (kg/km)**

Due to the difference of utilization purpose of each vehicle (transfer, transfer and collection, and collection), it cannot compare simply the average waste handling amount per unit distance. However, the total waste hauling amount per milage covered by the arm roll truck is 84 kg/km, which is the highest among the three vehicles. Total waste hauling amount per milage covered by the tractor trolley is 69 kg/km, while the mini-dumper truck performed only 50 kg/km. Reference shall be made also to the **Graph 8**.



**Graph 8: Waste Handling Amount per Unit Distance by Type of Vehicle**

**5.10 Average Waste Handling Amount per Loading Time (kg/hr)**

This value also cannot be compared simply due to the difference of utilization purpose of each type of vehicle. However, the average waste handling amount per loading time of arm-roll truck is 1.8 ton per hour which is 17 times more than that of the performance of the tractor trolley. Waste handling amount per loading time of the mini-dumper is approximately 500 kg per hour which is a

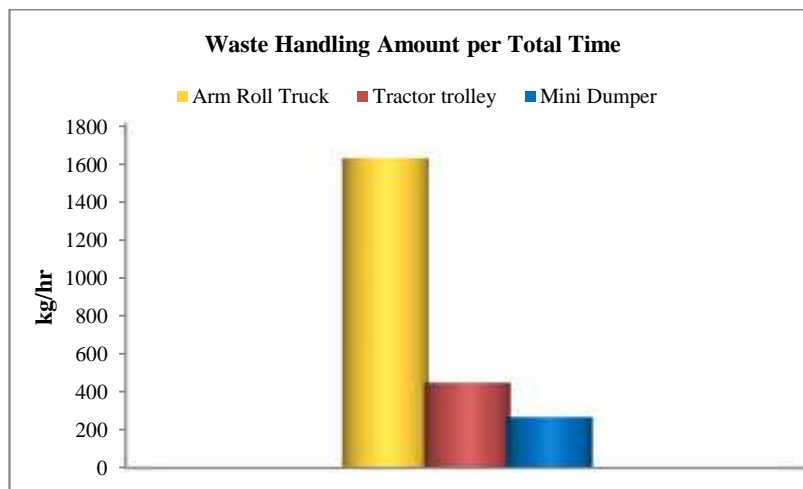
half of the value performed by the tractor trolley. This is because of the operation mode of the mini-dumper for collection of waste from many collection points including door-to-door collection.

### 5.11 Average Waste Handling Amount per Travelling Time (kg/hr)

This value also cannot be compared simply due to the difference of utilization purpose of each type of vehicle for transportation, collection and transportation or only for waste collection. However, the average waste handling amount per travelling time of the arm-roll truck performed at approximately 2 tons per hour which is the most efficient value among the three types of the vehicles. The handling amount per travelling time of arm-roll truck is approximately 2.5 times higher than that of the waste handling amount of the tractor trolley. The result of mini-dumper is the lowest at 620 kg per hour due to the collection from many collection points including door-to-door collection.

### 5.12 Average Waste Handling Amount per Total Time (kg/hr)

This value also cannot be compared simply due to the difference of the utilization purpose or service of each type of vehicle. An average waste handling amount per total operating time of arm roll truck is approximately 1.6 tons/hr, which is the highest value among the three types of the vehicles. The mini dumper performed approximately 270 kg/hr, which is 60 % of the value performed by of the tractor trolley. From the result of average waste handling amount per total operating time of arm roll truck and mini dumper, it indicates that the capacity of 6 units of mini dumper is equivalent to the capacity of one unit of arm roll truck. Reference shall be made also to **Graph 9**.



**Graph 9: Waste Handling Amount per Total Time by Type of Vehicle**

The key factors regarding loading, unloading and travelling times which consist of the total time are explained in detail in **Table 10**.

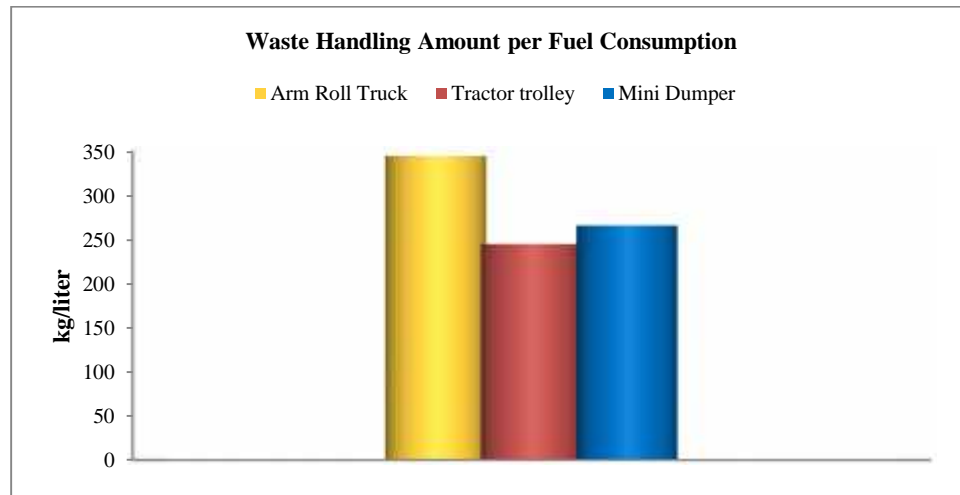
**Table 10: Facts about Operational Time during Survey**

Objective	Arm Roll Truck	Tractor Trolley	Mini Dumper
<b>Loading Time</b>	40 minutes (9% of total time)	3:13 (h:min) (41% of total time)	4:42 (h:min) (52% of total time)
	a) Driver had to wait for filling of container due to late transportation of primary collected waste. b) Partial filling and littering of waste outside the container. c) Improper location of container and traffic problem. d) Loaded the container from Temporary transfer station and skipped the allotted containers.	a) Lack of designated crew staff for loading. b) Delay due to late sweeping by sanitary staff on roads and streets. c) Traffic congestion at School and Office timing. d) Routes in access to container were also served by mini dumper. e) In UC-19 & 46, Hand carts were also unloaded in mini dumper and tractor trolley.	
<b>Unloading Time</b>	40 minutes (9% of total time)	12 minutes (3% of total time)	31 minutes (5% of total time)
	a) Absence of record keeper at 7:30 AM b) Delay in alignment of remaining waste of previous day at Gondlanwala. c) Delay due to dumping of other vehicles at designated points	a) Bucket unloaded the waste from trolley (Holland-1) due to the problem in hauling jack.	a) Delay due to dumping of other mini dumpers at transfer station.
<b>Travel Time</b>	6:04 (h:min) (82% of total time)	4:25 (h:min) (56% of total time)	3:54 (h:min) (43% of total time)
	a) Container was not filled/partially filled at the arrival of arm roll truck and driver had to travel to find some other allotted points for loading filled/partially filled container. b) Allotted containers are not from adjacent UCs and far from each other. c) Fan belt of Hino-11 was broken out.	a) Travelled at a speed of 5-6km/hr b) 20 years old machinery, engine struck out of TT-9774, Gear Plate and Hauling Jack of TT-Holland-1 was out of order, Belt of cylinder broke out and tyre was also punctured of Holland-2.	a) Mostly drivers made 1 <sup>st</sup> trip with partially filled dumper. b) Travelled at slow speed to avoid the littering of waste.

### 5.13 Average Waste Handling Amount per Fuel Consumption (kg/liter)

The average waste handling amount per fuel consumption or per unit fuel amount of the arm roll truck, tractor trolley and mini dumper are calculated respectively 345 kg, 245 kg and 266 kg per liter. This means that arm-roll truck collects and transport 1.4 times amount of waste per liter compared with that of the tractor trolley in the area where a mini dumper does not collect waste. In case of waste collection and waste transportation by the combination of mini dumper and arm roll truck, mini dumper needs to have  $345/266=1.3$  liter of fuel for collecting 345 kg of waste which is the waste amount transported by arm roll truck. In this case, 345kg of waste is collected and transported by mini dumper and arm roll truck with  $1+1.3=2.3$  liter of fuel.

Thus, this combination of two types of vehicle has the capability of waste collecting and transporting 150kg of waste (345kg/2.3liter) per liter. Compared the value with that of the result of tractor trolley, which was 245 kg/liter, the number of average waste handling amount per fuel consumption of these two vehicles is approximately 60% of the value performed by the tractor trolley. Reference shall be made also to **Graph 10**.



**Graph 10: Comparison of Waste Collection and Transportation Vehicles against Fuel Consumption**

## **6. CONCLUSIONS AND RECOMMENDATIONS**

### **6.1 Conclusions**

The followings summarize the main items from the output of the time and motion survey conducted in December 2014.

1. An Arm Roll Truck ( $5\text{m}^3$ ) travels 144 km with 35 liters of fuel four (4) trips to transport 12 tons per day on average.
2. Tractor Trolley travels 51 km with 14 liters of fuel for 2 trips to transport 3.5 tons per day on average
3. Mini Dumper travel 49 km with 9 liters of fuel for 5 trips to transport 2.4 tons of waste to the temporary transfer station (Sabri Chowk and Qadri Darbar) per day on average
4. Trend of loading time with respect to the total operational time of each type of vehicle is ;  
Mini Dumper (52%) > Tractor Trolley (41%)> Arm Roll Truck (9%)
5. Trend of travel time with respect to the total operational time of each type of vehicle is:;  
Arm Roll Truck (82%) > Tractor Trolley (56%) > Mini Dumper (43%)
6. Trend of unloading time with respect to total operational time of each type of vehicle is;  
Arm Roll Truck (9%) > Mini Dumper (5%)> Tractor Trolley (3%)
7. Ratio of average waste collection/transportation amount (ton/day) is;  
Arm Roll Truck (3)> Tractor Trolley (0.9)> Mini Dumper (0.6)
8. Mileage or fuel consumption per liter(km/liter) is;  
Mini Dumper (5.4)> Arm Roll Truck (4.1)> Tractor Trolley (3.4)
9. Waste handling amount per unit distance (kg/km) is;  
Arm Roll Truck (84)> Tractor Trolley (68)> Mini Dumper (50)
10. Waste handling amount per total operation time (kg/hr) is;  
Arm Roll Truck (1,620)>Tractor Trolley (446)>Mini Dumper (266)
11. Waste handling amount per mileage or unit fuel consumption (kg/lit) is;  
Arm Roll Truck (345) >Mini Dumper (266) > Tractor Trolley (245)
12. Carrying capacity per hour of Arm roll truck is controlled by the carrying capacity of Mini dumper. In order to meet the carrying capacity of Arm-roll truck, 6 Mini dumpers shall be dispatched to one Arm-roll truck.
13. Carrying capacity per fuel consumption of Mini dumper (266 kg/liter) + Arm-roll truck (345kg/liter) is calculated equivalent to 150 kg/liter, which is lower than that of the Tractor Trolley (245 kg/liter) because of dispatching two vehicles to complete waste collection and transportation.

## **6.2 Recommendations**

From the results of T&M motion survey, the matters to be recommended with respect to improvement of the operation of waste collection and transportation vehicles are summarized below.

1. Fuel consumption of tractor trolley is as low as 3.5 km/litter and the travelling performance is low. In addition, most of the tractor trolley is aging, so that the maintenance costs are increased. Tractor trolley shall be replaced with other appropriate type of vehicles sooner as possible since the tractor trolley is not an appropriate type of vehicle for waste collection and transportation operation. .
2. Loading efficiency of mini dumper is low as 517 kg/litter caused the numbers of collection points including door to door operation. The loading efficiency must be improved by increasing the number of workers to two persons and asking cooperation of the residents for the method of waste discharging from the households.
3. The efficiency of the combination work by mini dumper and arm roll truck for collection and transportation work is lower than that of the performance of tractor trolley in terms of fuel consumption. Since the distance to the disposal site is less than 10 km from the centre of the city and it does not spend time and fuel so much so this kind of waste transfer operation shall be limited to the minimal to save the cost.

In addition to the recommendations above, the following matters observed and learned during the survey are also recommended for improvement of the operation.

4. The parking lot for each vehicle at GWMC garage should be fixed because the early comer drivers have to wait for the late comers and it results delay to start waste collection service.
5. Repair and maintenance equipment for puncture, etc. should also be made available at GWMC garage, as most of the drivers don't check the vehicles at the start of operation, which causes the problems during the work.
6. Waste collection points and routes for each vehicle should be defined for routine work as the driver has to call and ask sometimes about the next collection points and it causes the wastage of time.
7. Route of Mini Dumper should be different from that of donkey cart and hand cart to avoid duplication of the service area and the service area can be maximized. .
8. Adjacent container points should be allocated to each Arm Roll Truck to avoid extra travelling distance for loading and transporting the waste.
9. UC supervisor should supervise the container points as Arm Roll Truck skip their designated container points and load the container from the temporary transfer station to make their allotted 4-5 trips per shift.



Annexure-I

**1. Definitions Related to Time and Motion Survey**

➤ Loading Time

- a) In case of Arm Roll Truck; the duration when an arm roll truck visits the collection site/point, places an empty container on the ground, and put the container w/garbage on the truck.
- b) In case of Tractor Trolley/Mini Dumper; the duration when a tractor trolley/mini dumper visits the collection site, loader collects the waste heap in streets/roads and dump into vehicle.

➤ Unloading Time

- a) In case of Arm Roll Truck/Tractor Trolley; Time duration for dumping the waste on Dump site (Gondlanwala).
- b) In case of Mini Dumper; Time duration for dumping the waste on Temporary Transfer Stations (Sabri Chowk and Qadri Darbar point).

➤ Travelling Time

Travelling time comprises of the time duration

- a) from garage to first collection site/point and so on to the other
- b) from collection site to disposal site/transfer station
- c) from disposal site/transfer station to the garage at the end

## 2. Basic Data for Time and Motion Survey

Basic Data for Time and Motion Survey						
UC/Collection Area	Income Category			Type of Waste Collection and Transportation Vehicle		
	High	Middle	Low	Mini Tipper	Tractor Trolley	Arm Roll
1/Shams Abad			✓		✓	✓
2/New Civil Line		✓			✓	✓
3/ Noor Bawa		✓			✓	✓
4/Model Town	✓				✓	✓
5/Amir Park	✓			✓		✓
6/Akram Colony		✓		✓		✓
7/Gulshan Iqbal Park Road, Shaheen Abad			✓	✓		✓
8/Climax Abad		✓			✓	✓
9/Ehtasham Colony	✓			✓		✓
10/KachiFattoMand			✓	✓		✓
11/Paki FattoMand		✓		✓		✓
12/ChakJagna		✓		✓		✓
13/Gulzar Colony		✓		✓		✓
14/Noor Pura		✓		✓		✓
15/Delta Road		✓			✓	✓
16/Satellite Town	✓			✓	✓	✓
17/Madina Colony		✓		✓		✓
18/Fareed Town			✓		✓	✓
19/Ali Town			✓	✓		✓
20/FaqeerPura		✓			✓	✓
21/Wahdat Colony		✓		✓		✓
22/Bilal Pura		✓			✓	✓
23/Shahzad Shaheed Colony		✓		✓		✓
24/MujahidPura		✓		✓		✓
25/Arfat Colony		✓			✓	✓
26/Kot Habib-Ullah	✓				✓	✓
27/Peoples Colony	✓				✓	✓
28/ALLAH Buksh		✓		✓		✓
29/Rana Colony		✓			✓	✓
30/Hashami Colony			✓	✓		✓
31/TheriSansi			✓	✓		✓
32/KhailiShahpur		✓		✓		✓
33/Gulzar Colony		✓			✓	✓
34/Nighar Cinema			✓		✓	✓
35/KachaKhaili Road			✓	✓		✓
36/NosheraSansi			✓	✓		✓
37/QilaSundar Singh			✓		✓	✓
38/Cheragh Nagar			✓	✓		✓
39/ChahTailiany		✓		✓		✓
40/Data Gunj Bakhsh		✓			✓	✓
41/Chah Malian Wala		✓		✓		✓
42/BakhtaWala		✓		✓	✓	✓
43/Mubarak Shah		✓			✓	✓

44/Gulshan Abad		✓			✓	
45/BaghBanpura		✓			✓	✓
46/Khalid Colony		✓			✓	✓
47/RamzanPura			✓		✓	✓
48/Shah Rukh Colony		✓		✓		✓
49/KotliRustam	✓			✓		✓
50/QazafiPura	✓			✓		✓
51/RehmanPura	✓			✓		✓
52/Sultan Pura		✓		✓		✓
53/Muslim Town	✓				✓	✓
54/Guru Nanak Pura		✓			✓	✓
55/LakarWala Pull		✓		✓		✓
56/GobindGarh		✓			✓	✓
57/DubbanPura		✓			✓	✓
58/Garjakh		✓			✓	✓
59/NawabChowk	✓			✓		✓
60/Islam Pura		✓		✓		✓
61/Bara Latif Shah		✓		✓		✓
62/Afzal Pura			✓	✓		✓
63/Gulshan Mohammad Town			✓	✓		✓
64/Zahid Colony		✓		✓		✓



Sheet # A1								
Date :		9/12/2014		Plate no. of Vehicle :			GAJ-74	
Name of Surveyor :		Aqsa Sadiq		Type of Collection Vehicle:			Mini Dumper	
Name of Employee:		Tabassum Phool		Name of Data Recorder:			Aqsa Sadiq	
Collection Area/ UC No. :		39		Nominal Vehicle Capacity:			1 m <sup>3</sup>	
No. of Collection Crew:		3 (2 helpers,1 driver)		Weather:			Sunny	
Point No.	Time		Coordinates	Description of Point (Address,road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight. Loading, unloading, traffic condition etc.)	
	Arrival Time	Departure Time			At Arrival	At Departure		
Garage	6:35	6:47	N 32° 08' 37.6" E 074° 11' 12.8 "	GWMC Workshop	14102.4	14102.4	Engine Startup and vehicle inspection	
2	6:50	6:53	N 32° 08' 36.2" E 074° 11' 34.2 "	Filling station GT Road	14104	14104	Fuel Filling	
3	7:04	7:49	N 32° 08' 36.0" E 074° 11' 33.1 "	Sagheer chowk/Tanki wala chowk	14107.4	14108.7	Road sweeping & waste collection (58 points )	
4	8:01	8:05	N 32° 09' 21.9" E 074° 10' 02.5 "	Qadri Darbar Transfer Station	14114.2	14114.4	Unloading of waste	
5	8:19	9:02	N 32° 08' 48.4" E 074° 10' 02.7 "	Noshera Road Point 3 Opposite side	14120.3	14122.5	Waste Collection after Road Sweeping (92 points )	
6	9:18	9:24	N 32° 09' 18.5" E 074° 10' 02.6 "	Qadri Darbar Transfer Station	14128.7	14128.8	Unloading of waste	
7	9:38	9:43	N 32° 08' 37.3" E 074° 09' 42.6 "	Noshera Road Point 3	14134.2	14134.2	Stopped	
8	9:53	10:22	N 32° 08' 33.6" E 074° 10' 28.5 "	Jinnah Road near Noshera sansi pulli/Chowk	14136.5	14137	Waste Collection from road	
9	10:39	10:43	N 32° 09' 21.9" E 074° 10' 02.5 "	Qadri Darbar Transfer Station	14144.1	14144.3	Unloading of waste	
10	10:56	11:06	N 32° 08' 36.9" E 074° 09' 42.4 "	Noshera Road	14149.6	14149.6	Waste Collection from road (silt) 1 point	
11	11:12	11:35	N 32° 08' 48.4" E 074° 10' 42.4 "	Jinnah Road remaining	14151.5	14151.9	Waste Collection (40 points )	
12	11:51	11:59	N 32° 09' 21.5" E 074° 10' 02.5 "	Qadri Darbar Transfer Station	14158.5	14158.8	Unloading of waste	
13	12:19	12:33	N 32° 09' 21.9" E 074° 10' 02.5 "	Tower wala Bazaaz	14166.1	14166.3	Waste Collection (20 points )	
14	12:34	1:00	N 32° 08' 43.9" E 074° 10' 25.6 "	St # 3 Chah talian wala	14166.3	14166.8	Waste Collection (38 street heaps and 100 houses )	
15	1:15	1:21	N 32° 08' 44.8" E 074° 10' 20.6 "	Qadri Darbar Transfer Station	14173.3	14173.4	Unloading of waste	
16	1:44	2:09	N 32° 08' 43.7" E 074° 10' 20.8 "	Tower wala Bazar	14180.8	14180.8	Clearance of a plot	
17	2:27	2:32	N 32° 09' 21.6" E 074° 10' 02.4 "	Qadri Darbar Transfer Station	14188.2	14188.3	Unloading of waste	
18	2:46	2:52	N 32° 08' 36.4" E 074° 11' 34.1 "	Rachna filling station GT Road	14192.1	14192.1	Fuel Filling	
19	2:56	3:01	N 32° 08' 38.2" E 074° 11' 12.7 "	GWMC Workshop	14193.7	14193.7	Parking of Vehicles	

Sheet # A2								
<b>Date :</b>		10/12/2014		<b>Plate no. of Vehicle :</b>		GAJ-74		
<b>Name of Surveyor :</b>		Aqsa Sadiq		<b>Type of Collection Vehicle:</b>		Mini Dumper		
<b>Name of Employee:</b>		Tabassum Phool		<b>Name of Data Recorder:</b>		Aqsa Sadiq		
<b>Collection Area/ UC No. :</b>		39		<b>Nominal Vehicle Capacity:</b>		1 m <sup>3</sup>		
<b>No. of Collection Crew:</b>		3 (2 helpers,1 driver)		<b>Weather:</b>		Sunny		
Point No.	Time		Coordinates		Description of Point (Address,road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight. Loading, unloading, traffic condition etc.)
	Arrival Time	Departure Time				At Arrival	At Departure	
A2-1,2	6:26	7:14	N 32° 08' 38.0"	E 074° 11' 12.9 "	GWMC Workshop	14215.3	14215.3	Engine Startup and vehicle inspection
A2-3,4	7:19	7:25	N 32° 08' 36.2"	E 074° 11' 34.0 "	Filling station GT Road	14217	14217	Fuel filling
A2-5,6	7:36	8:25	N 32° 08' 59.3" E 074° 10' 20.9 "	N 32° 08' 53.1" E 074° 10' 10.9 "	Sagheer chowk/Tanki wala chowk	14220.5	14221.7	Road waste collection (96 points)
A2-7,8	8:34	8:40	N 32° 09' 18.8"	E 074° 10' 02.5 "	Qadri Darbar Transfer Station	14223.4	Same	Unloading of waste and vehicle inspection
A2-9,10	8:47	9:21	N 32° 08' 53.2" E 074° 10' 11.0 "	N 32° 09' 02.4" E 074° 10' 24.7 "	Noshera Road at point 3	14225.4	14225.9	Waste Collection (76 points)
A2-11,12	9:27	9:37	N 32° 09' 01.9" E 074° 10' 25.1 "	N 32° 08' 37.4" E 074° 10' 28.1 "	Jinnah Road near Mian sansi pulli/Chowk	14226.9	14227	Waste Collection and people gathering on road(16 points)
A2-13,14	9:45	9:50	N 32° 09' 21.0"	E 074° 10' 02.3 "	Qadri Darbar Transfer Station	14229.1	Same	Unloading of waste & Vehicle Inspection
A2-15,16	9:59	10:47	N 32° 08' 38.1" E 074° 10' 27.9 "	N 32° 08' 38.1" E 074° 10' 27.9 "	Jinnah Road remaining portion	14231.3	14232.1	Traffic Congestion,Worker's time wastage & waste collection (83 points)
A2-17,18	10:50	11:08	N 32° 08' 43.7" E 074° 10' 26.4"	N 32° 08' 43.8" E 074° 10' 22.5"	Tower wala Bazaar	14232.7	14232.8	Waste Collection (20 points)
A2-19,20	11:16	11:23	N 32° 09' 20.0"	E 074° 10' 02.5 "	Qadri Darbar Transfer Station	14234.8	Same	Unloading of waste & Vehicle Inspection
A2-21,22	11:31	11:49	N 32° 08' 43.8" E 074° 10' 23.6"	N 32° 08' 38.0" E 074° 10' 20.3"	Tower wala Bazaar	14236.9	14237	Waste Collection (13 points)
A2-23,24	11:53	12:08	N 32° 08' 37.9" E 074° 10' 20.2 "	N 32° 08' 37.9" E 074° 10' 26.5"	Theatre wala Bazaar	14237.2	14237.5	Waste Collection (18 points)
A2-25,26	12:10	1:01	N 32° 08' 44.1" E 074° 10' 20.6 "	N 32° 08' 58.4" E 074° 10' 20.6 "	St # 3 Chah talian wala	14237.9	14238.3	Waste Collection (80 houses and 46 street heaps)
A2-27,28	1:08	1:17	N 32° 09' 18.5" E 074° 10' 02.6 "	N 32° 09' 21.2" E 074° 10' 02.5 "	Qadri Darbar Transfer Station	14239.9	14239.9	Unloading of waste ,gossip receiving of crew staff & Vehicle Inspection
A2-29,30	1:25	2:19	N 32° 08' 56.7" E 074° 10' 16.8 "	N 32° 08' 42.0" E 074° 10' 16.8"	St # 6 Moh. Chah Tallian wala	14241.5	14242.1	Waste Collection (29 points)
A2-31,32	2:29	2:37	N 32° 09' 18.8"	E 074° 10' 02.6 "	Qadri Darbar Transfer Station	14244.6	Same	Unloading of waste & Vehicle Inspection
A2-33,34	2:50	2:50	N 32° 08' 36.5"	E 074° 11' 34.1 "	Filling station GT Road	14248.6	Same	Fuel Filling
A2-35,36	3:00	3:00	N 32° 08' 38.4"	E 074° 11' 12.9 "	GWMC Workshop	14250	Same	Delay due to Christmas party at GWMC Workshop,Parking of Vehicles

Sheet # A3								
<b>Date :</b>		11/12/2014		<b>Plate no. of Vehicle :</b>			GAJ-74	
<b>Name of Surveyor :</b>		Aqsa Sadiq		<b>Type of Collection Vehicle:</b>			Mini Dumper	
<b>Name of Employee:</b>		Tabassum Phool		<b>Name of Data Recorder:</b>			Aqsa Sadiq	
<b>Collection Area/ UC No. :</b>		39		<b>Nominal Vehicle Capacity:</b>			1 m <sup>3</sup>	
<b>No. of Collection Crew:</b>		3 (2 helpers,1 driver)		<b>Weather:</b>			Sunny	
Point No.	Time		Coordinates		Description of Point (Address,road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight. Loading, unloading, traffic condition etc.)
	Arrival Time	Departure Time				At Arrival	At Departure	
A3-1,2	6:25	6:37	N 32° 08' 38.2"	E 074° 11' 12.7 "	GWMC Workshop	14273	Same	Engine Startup, vehicle inspection and cleaning
A3-3,4	6:42	6:46	N 32° 08' 36.2"	E 074° 11' 33.4 "	Filling station GT Road	14275.1	Same	Fuel filling and gossip with Assistant Manager
A3-5,6	6:57	8:14	N 32° 08' 59.2" E 074° 10' 20.8 "	N 32° 08' 53.1" E 074° 10' 10.7 "	Noshera Road near Sagheer chowk	14278.4	14279.5	Wait for crew on collection point.Start of work at 7:00 AM,waste collection starts 7:15,delay due to non sweeping of road in time (94 points)
A3-7,8	8:20	8:26	N 32° 09' 17.7"	E 074° 10' 02.5 "	Qadri Darbar Transfer Station	14281.1	Same	Unloading of waste + Vehicle inspection
A3-9,10	8:32	9:06	N 32° 08' 53.0" E 074° 10' 10.6 "	N 32° 09' 02.4" E 074° 10' 24.3 "	Noshera Road at point 3	14283.2	14283.7	Waste Collection (59 points)
A3-11,12	9:08	9:44	N 32° 08' 33.7" E 074° 10' 28.4 "	N 32° 08' 47.8" E 074° 10' 26.9 "	Jinnah Road near Mian sansi pulli/Chowk	14284.7	14285.2	Waste Collection (58 points)
A3-13,14	9:50	9:57	N 32° 09' 17.7"	E 074° 10' 02.7 "	Qadri Darbar Transfer Station	14286.9	Same	Unloading of waste & Gossip with trip counter
A3-15,16	10:04	10:27	N 32° 08' 48.9" E 074° 10' 26.7 "	N 32° 09' 01.5" E 074° 10' 25.0 "	Jinnah Road remaining portion	14288.8	14289.2	Traffic Congestion,Waste collection (35 points)
A3-17,18	10:30	10:36	N 32° 08' 43.7" E 074° 10' 26.7"	N 32° 08' 43.6" E 074° 10' 20.5"	Tower wala Bazaar	14289.9	14290	Waste Collection (5 points) ,No sweeping in Bazar so less waste collection points.
A3-19,20	10:42	10:51	N 32° 08' 38.4" E 074° 10' 20.2"	N 32° 08' 37.8" E 074° 10' 25.1"	Gujranwala Theatre wala bazaar	14290.3	14290.4	Waste Collection, Alternate route due to road blockage by construction material
A3-21	10:53	10:57	N 32° 08' 44.0"	E 074° 10' 24.3"	Tower wala Bazaar	14290.7	Same	Waste Collection from 2 shops
A3-22,23	11:07	11:12	N 32° 09' 18.0"	E 074° 10' 02.6 "	Qadri Darbar Transfer Station	14292.8	Same	Unloading of waste + delay in arrival to transfer station due to meetig with a friend driver
A3-24,25	11:27	0:13	N 32° 08' 43.8" E 074° 10' 20.5 "	N 32° 08' 58.7" E 074° 10' 20.7 "	St # 3 Chah talian wala	14295	14295.5	Waste Collection (79 houses and 29 street heaps)
A3-26,27	0:21	0:26	N 32° 09' 21.3" E 074° 10' 02.5 "	N 32° 09' 21.3" E 074° 10' 02.5 "	Qadri Darbar Transfer Station	14297.1	Same	Traffic congestion in the way, Unloading of waste & Vehicle Inspection.
A3-28,29	0:33	1:50	N 32° 08' 56.9" E 074° 10' 16.9 "	N 32° 08' 45.2" E 074° 10' 16.9 "	St # 6 Moh. Chah Tallian wala	14298.8	14299	Tea break and receiving of a crew member
A3-30,31	2:05	2:12	N 32° 09' 20.5"	E 074° 10' 02.6 "	Qadri Darbar Transfer Station	14301.9	Same	Unloading of waste ,gossips & Vehicle Inspection
A3-32,33	2:29	2:35	N 32° 08' 36.5"	E 074° 11' 34.0"	Rachna filling station GT Road	14305.8	Same	Traffic congestion on way & Fuel Filling
A3-34,35	2:40	2:43	N 32° 08' 37.9"	E 074° 11' 12.4 "	GWMC Workshop	14307.4	Same	Parking and inspection of Vehicle

Sheet # A4								
Date :		12/12/2014		Plate no. of Vehicle :			GAJ-74	
Name of Surveyor :		Aqsa Sadiq		Type of Collection Vehicle:			Mini Dumper	
Name of Employee:		Tabassum Phool		Name of Data Recorder:			Aqsa Sadiq	
Collection Area/ UC No. :		39		Nominal Vehicle Capacity:			1 m <sup>3</sup>	
No. of Collection Crew:		3 (2 helpers,1 driver)		Weather:			Sunny	
Point No.	Time		Coordinates		Description of Point (Address,road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight. Loading, unloading, traffic condition etc.)
	Arrival Time	Departure Time				At Arrival	At Departure	
A4-1,2	6:27	6:40	N 32° 08' 38.2"	E 074° 11' 12.6 "	GWMC Workshop	14329	Same	Tyre puncture detected,Tyre changed & Engine Startup
A4-3,4	6:45	6:48	N 32° 08' 36.2"	E 074° 11' 34.4 "	Rachna filling station GT Road	14330.6	Same	Fuel filling
A4-5,6	6:58	8:30	N 32° 09' 01.8" E 074° 10' 24.7 "	N 32° 09' 02.3" E 074° 10' 24.5 "	Noshera Road near Sagheer chowk	14334.1	14335.5	1 Helper reached and waste collection started.Second helper reached at 7:17 am. No sweeping on opposite road.Dumper waited for sweeping, waste collection from 141 points
A4-7,8	8:34	8:40	N 32° 09' 18.3"	E 074° 10' 02.5 "	Qadri Darbar Transfer Station	14336.9	Same	Unloading of waste & Vehicle Inspection
A4-9,10	8:45	9:07	N 32° 08' 57.7" E 074° 10' 17.5 "	N 32° 08' 50.2" E 074° 10' 06.2 "	Noshera Road near jamia masjid Muhammadi	14338.6	Same	Waste Collection (46 points)
A4-11,12	9:10	9:18	N 32° 08' 53.8" E 074° 10' 11.8 "	N 32° 08' 55.1" E 074° 10' 13.5 "	Noshera Road opposite to ehsan hospital	14339.8	14339.9	Waste Collection (13 points)
A4-13,14	9:22	10:18	N 32° 08' 33.8" E 074° 10' 28.6 "	N 32° 08' 59.7" E 074° 10' 25.4 "	Jinnah Road near Mian sansi pulli/Chowk	14341.2	14342.1	Waste Collection (86 points)
A4-15,16	10:23	10:31	N 32° 09' 19.4"	E 074° 10' 02.6"	Qadri Darbar Transfer Station	14343.6	Same	Unloading of waste & Vehicle Inspection
A4-17,18	10:39	10:50	N 32° 08' 59.1" E 074° 10' 25.5"	N 32° 09' 01.8" E 074° 10' 25.1"	Jinnah Road near Mian sansi pulli/Chowk	14345	14345.2	Waste Collection (11 points),1 helper left
A4-19,20	10:53	10:59	N 32° 08' 43.9" E 074° 10' 26.0 "	N 32° 08' 43.7" E 074° 10' 19.6 "	Tower wala Bazaar	14345.7	14346	2nd helper came at 10:52 am,Waste Collection (11 heaps)
A4-21,22	11:01	11:23	N 32° 08' 44.1" E 074° 10' 20.6"	N 32° 08' 54.1" E 074° 10' 20.5"	St # 3 Chah talian wala	14346.1	14346.3	Waste Collection (63 Houses and 29 street heaps)
A4-23,24	11:32	11:36	N 32° 09' 18.4"	E 074° 10' 02.7"	Qadri Darbar Transfer Station	14348	Same	Unloading of waste & Vehicle Inspection
A4-25,26	11:51	12:07	N 32° 08' 54.7" E 074° 10' 20.6 "	N 32° 08' 58.6" E 074° 10' 20.6 "	St # 3 Chah talian wala	14350.6	14350.8	Waste Collection (17 Houses and 10 street heaps),2nd helper left
A4-27,28	12:11	12:59	N 32° 08' 56.7" E 074° 10' 16.8 "	N 32° 08' 48.3" E 074° 10' 16.9 "	St # 6 Moh. Chah Tallian wala	14350.9	14351.2	Waste Collection (52 Houses,31 street heaps)
A4-29,30	1:10	1:16	N 32° 09' 20.9"	E 074° 10' 02.6 "	Qadri Darbar Transfer Station	14354.1	Same	Unloading of waste & Vehicle Inspection
A4-31,32	1:24	1:53	N 32° 08' 47.8" E 074° 10' 16.8"	N 32° 08' 43.9" E 074° 10' 16.9 "	St # 6 Moh. Chah Tallian wala	14356	14356.2	Waste Collection (23 Houses and 15 street heaps)
A4-33,34	1:56	2:10	N 32° 08' 37.7" E 074° 10' 20.2"	N 32° 08' 40.1" E 074° 10' 27.7"	Grw theatre wala bazaar	14356.5	14356.6	Waste Collection (13 street heaps)
A4-35,36	2:17	2:21	N 32° 09' 18.5"	E 074° 10' 02.6 "	Qadri Darbar Transfer Station	14358.9	Same	Unloading of waste & Vehicle Inspection
A4-37,38	2:33	2:37	N 32° 08' 36.3"	E 074° 11' 34.3 "	Filling station GT Road	14362.8	Same	Fuel Filling
A4-39,40	2:42	2:47	N 32° 08' 37.9"	E 074° 11' 12.7"	GWMC Workshop	14364.3	Same	Parking of Vehicle & Vehicle Inspection



Sheet # A5								
Date :		13/12/2014		Plate no. of Vehicle :		GAJ-74		
Name of Surveyor :		Aqsa Sadiq		Type of Collection Vehicle:		Mini Dumper		
Name of Employee:				Name of Data Recorder:		Aqsa Sadiq		
Collection Area/ UC No. :		39		Nominal Vehicle Capacity:		1 m <sup>3</sup>		
No. of Collection Crew:		3 (2 helpers,1 driver)		Weather:		Cloudy		
Point No.	Time		Coordinates		Description of Point (Address,road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight, Loading, unloading, traffic condition etc.)
	Arrival Time	Departure Time				At Arrival	At Departure	
A5-1,2	6:29	6:30	N 32° 08' 38.3" E 074° 11' 12.7 "		Workshop	14385.9	Same	Vehicle Inspection & Engine Startup
A5-3,4	6:35	6:37	N 32° 08' 36.3" E 074° 11' 33.9 "		Filling station GT Road	14387.5	Same	Fuel filling
A5-5,6	6:50	8:25	N 32° 08' 59.3" E 074° 10' 20.8 "	N 32° 08' 51.4" E 074° 10' 09.0 "	Noshera Road near Sagheer chowk	14391.1	14392.5	Waste Collection from road.2nd helper arrived at 7:14.Sweeping isnt complete crew has to wait for sweeping so they can collect waste (98 points)
A5-7,8	8:33	8:40	N 32° 09' 21.2" E 074° 10' 02.4 "		Qadri Darbar Transfer Station	14394.5	Same	Unloading of waste & Vehicle Inspection
A5-9,10	8:47	9:38	N 32° 08' 49.1" E 074° 10' 03.9"	N 32° 08' 59.1" E 074° 10' 19.6"	Noshera Road, st #2 opposite to fodder market	14396.8	14397.2	Waste Collection (57 points) and tea break
A5-11,12	9:45	10:29	N 32° 08' 39.4" E 074° 10' 27.8 "	N 32° 09' 01.6" E 074° 10' 25.1 "	Jinnah Road near Mian sansi pulli/Chowk	14398	14398.9	Waste Collection (66 points) and instruction from supervisor
A5-13,14	10:36	10:42	N 32° 09' 20.2" E 074° 10' 02.5 "		Qadri Darbar Transfer Station	14400	Same	Unloading of waste & Vehicle Inspection
A5-15,16	10:59	11:28	N 32° 08' 38.0" E 074° 10' 19.4"	N 32° 08' 37.9" E 074° 10' 27.8"	Grw theatre wala bazaar	14402.7	14403	Waste Collection (28 points),Sweeping not started in tower wala bazaar
A5-17,18	11:30	12:23	N 32° 08' 43.8" E 074° 10' 20.5"	N 32° 08' 57.3" E 074° 10' 20.6"	St # 3 Chah tailian wala	14403.5	14404	Waste Collection (89 Houses,48 heaps)
A5-19,20	12:29	12:37	N 32° 09' 21.3" E 074° 10' 02.5"		Qadri Darbar Transfer Station	14405.7	Same	Unloading of waste & Vehicle Inspection
A5-21,22	12:45	12:55	N 32° 08' 43.9" E 074° 10' 26.8 "	N 32° 08' 43.8" E 074° 10' 20.7 "	Tower wala bazaar/Hazrat Ameer hamza bazaar	14407.7	14407.8	Waste Collection (19 points)
A5-23,24	1:07	1:16	N 32° 08' 56.6" E 074° 10' 20.5 "	N 32° 08' 58.6" E 074° 10' 20.5 "	St # 3 Chah tailian wala	14408.3	Same	Route changed due to street blockage by construction material.Waste Collection (4 Houses,8 Street heaps)
A5-25,26	1:17	2:06	N 32° 08' 56.5" E 074° 10' 16.8 "	N 32° 08' 43.9" E 074° 10' 16.9 "	St # 6 Moh. Chah Tailian wala	14408.4	14408.9	Waste Collection (87 Houses and 23 street heaps), dropped helpers
A5-27,28	2:20	2:26	N 32° 09' 19.9" E 074° 10' 02.5"		Qadri Darbar Transfer Station	14411.6	Same	Unloading of waste & Vehicle Inspection
A5-29,30	2:46	2:49	N 32° 08' 36.5" E 074° 11' 34.1 "		Filling station GT Road	14417.5	Same	Fuel Filling,Alternate route due to traffic
A5-31,32	2:53	2:56	N 32° 08' 38.4" E 074° 11'13.2"		Workshop	14419.1	Same	Parking & Inspection of Vehicle

Sheet # A6								
<b>Date :</b>		15/12/14		<b>Plate no. of Vehicle :</b>		Holland -2		
<b>Name of Surveyor :</b>		Aqsa Sadiq		<b>Type of Collection Vehicle:</b>		Tractor Trolley		
<b>Name of Employee:</b>		Tabassum Phool		<b>Name of Data Recorder:</b>		Aqsa Sadiq		
<b>Collection Area/ UC No. :</b>		40		<b>Nominal Vehicle Capacity:</b>		3.2 m <sup>3</sup>		
<b>No. of Collection Crew:</b>		2 (1 helper,1 driver)		<b>Weather:</b>		Cloudy		
Point No.	Time		Coordinates		Description of Point (Address,road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight. Loading, unloading, traffic condition etc.)
	Arrival Time	Departure Time				At Arrival	At Departure	
A6-1	7:11	7:15	N 32° 8'38.93"	E 74°11'13.02"	GWMC Workshop	14441.2	Same	Vehicle Inspection & Engine Startup
A6-2	7:23	7:26	N 32° 8'57.83"	E 74°11'28.46"	Puncture Shop	14442.1	Same	Tyre tube inspection and adjustment of air pressure
A6-3,4	7:28	7:38	N 32° 8'36.10" E 74°11'33.11"	N 32° 8'35.49" E 74°11'33.09"	Filling station	14442.8	Same	Fuel filling
A6-5,6	7:53	8:17	N 32° 9'0.90" E 74°10'25.57"	N 32° 9'0.87" E 74°10'25.63"	Gala sagheer park wala	14446.2	Same	Waste collection from one heap
A6-7,8	8:19	8:25	N 32° 8'59.63" E 74°10'25.47"	N 32° 8'59.99" E 74°10'25.47"	Eid gah Ibrahim,Jinnah road	14446.3	Same	Waste collection from one heap
A6-9,10	8:25	8:37	N 32° 8'59.14" E 74°10'25.59"	N 32° 8'54.05" E 74°10'26.14"	Jinnah Road	14446.3	14446.4	Waste Collection (1 House and 19 street heaps)
A6-11,12	8:38	8:43	N 32° 8'53.94" E 74°10'26.20"	N 32° 8'53.69" E 74°10'26.26"	Jinnah Road,Street # 4,Mohalla Muhammad Nagar	14446.4	Same	Large heap.Second worker arrived at 8:41
A6-13,14	8:44	9:08	N 32° 8'53.16" E 74°10'26.31"	N 32° 8'32.96" E 74°10'28.81"	Jinnah Road	14446.4	14447.1	Waste Collection (87 Road heaps)
A6-15,16	9:09	9:10	N 32° 8'33.33" E 74°10'29.53"	N 32° 8'34.34" E 74°10'30.43"	Noshera Sansi chowk.Mubarak shah road Mehtar pan shop	14447.1	14447.2	Gali Haji Ismail Butt wali (6 street heaps)
A6-17,18	9:11	9:14	N 32° 8'34.12" E 74°10'30.14"	N 32° 8'34.22" E 74°10'30.05"	Fodder market of mubarak shah	14447.2	Same	Waste collection from 3 points of fodder market
A6-19,20	9:21	9:39	N 32° 9'0.97" E 74°10'26.10"	N 32° 9'0.91" E 74°10'34.92"	Gala tanki /sagheerpark wala	14448.2	14448.5	Waste Collection (40 points)
A6-21,22	10:23	10:27	N 32°12'23.93" E 74° 7'57.70"	N 32°12'26.98" E 74° 8'3.01"	Dumping site	14459.5	14459.9	Unloading of waste
A6-23,24	11:06	11:09	N 32° 9'0.99" E 74°10'25.89"	N 32° 9'0.99" E 74°10'25.78"	Sageer park wala gala	14470.7	Same	Loader receiving and waste collection from point 2nd time
A6-25	11:10	11:11	N 32° 9'1.25"	E 74°10'30.78"	Near college	14470.7	Same	Waste collection (1 point)
A6-26	11:12	11:13	N 32° 9'1.17"	E 74°10'34.32"	On corner of college	14470.9	Same	Waste collection (1 point)
A6-27,28	11:14	12:53	N 32° 9'1.41" E 74°10'35.47"	N 32° 8'56.69" E 74°10'32.28"	Gala master mushtaq wala Mohalla data gang baksh	14471	14473	Waste Collection (59 points and 11 shops)
A6-29,30	1:50	1:53	N 32°12'24.63" E 74° 7'57.74"	N 32°12'27.06" E 74° 8'3.06"	Dumping site	14484.2	14484.4	Dropped helpers.Traffic jam near Alrai Hospital
A6-31	2:09	2:10	N 32°11'38.24"	E 74° 8'10.33"	Near Gujjar Chowk, Gondlanwala	14484.7	Same	Helped Hino Arm Roll Truck
A6-32,33	2:44	2:51	N 32° 8'36.67" E 74°11'33.69"	N 32° 8'36.78" E 74°11'33.59"	Filling station	14495.9	Same	Traffic jam due to rail gate closure at sheranwala bagh
A6-34,35	2:56	2:59	N 32° 8'38.69" E 74°11'11.40"	N 32° 8'38.69" E 74°11'11.55"	GWMC Workshop	14497.5	Same	Parking

Sheet # A7									
<b>Date :</b>		16/12/14			<b>Plate no. of Vehicle :</b>			Holland -2	
<b>Name of Surveyor :</b>		Aqsa Sadiq			<b>Type of Collection Vehicle:</b>			Tractor Trolley	
<b>Name of Employee:</b>		Tabassum Phool			<b>Name of Data Recorder:</b>			Aqsa Sadiq	
<b>Collection Area/ UC No. :</b>		40			<b>Nominal Vehicle Capacity:</b>			3.2 m <sup>3</sup>	
<b>No. of Collection Crew:</b>		3 (2 helpers,1 driver)			<b>Weather:</b>			Cloudy	
Point No.	Time		Coordinates			Description of Point (Address,road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight, Loading, unloading, traffic condition etc.)
	Arrival Time	Departure Time					At Arrival	At Departure	
A7-1,2	7:09	7:11	N 32° 8'37.91" E 74°11'11.74"	N 32° 8'37.91" E 74°11'11.76"	Workshop	14540.6	Same	Vehicle inspection & engine startup	
A7-3,4	7:15	7:16	N 32° 8'57.51" E 74°11'28.55"	N 32° 8'57.61" E 74°11'28.62"	Air pressure checking of tyre	14541.5	Same	Tyre tube inspection and adjustment of air pressure	
A7-5,6	7:20	7:23	N 32° 8'35.53" E 74°11'33.37"	N 32° 8'35.36" E 74°11'33.36"	Filling Station	14542.2	Same	Fuel filling	
A7-7,8	7:37	7:57	N 32° 9'1.12" E 74°10'25.43"	N 32° 9'1.02" E 74°10'25.62"	Sagheer Park wala gala	14545.6	Same	Wait for helper who came at 7:47. 1 heap was removed	
A7-9,10	7:58	8:30	N 32° 9'0.36" E 74°10'25.55"	N 32° 8'33.32" E 74°10'28.60"	Jinnah Road	14545.7	14546.6	Wait for helper who came at 8 o'clock and started work at 08:05. 98 heaps were lifted.	
A7-11,12	8:31	9:46	N 32° 8'32.84" E 74°10'29.02"	N 32° 8'32.84" E 74°10'51.09"	Mubarak Shah Road	14546.6	14547.5	Waste collection from 110 heaps	
A7-13,14	10:50	10:54	N 32°12'23.94" E 74° 7'57.76"	N 32°12'26.87 E 74° 8'3.57"	Gondlanwala dump site	14560.2	14560.4	Unloading of waste	
A7-15,16	11:45	12:04	N 32° 9'0.91" E 74°10'26.67"	N 32° 9'1.36" E 74°10'34.91"	Gala Sagheer Park wala	14571.4	14571.7	waste collection from 14 heaps	
A7-17,18	12:06	12:53	N 32° 9'1.59" E 74°10'35.39"	N 32° 8'56.10" E 74°10'31.72"	Gala Alhaj master mushtaq wala	14571.7	14572.4	waste collection from 44 points, 11 shops and houses	
A7-19,20	1:07	1:14	N 32° 8'55.76" E 74°10'51.50"	N 32° 8'58.26" E 74°10'53.52"	Mubarak Shah Road back to point A7-12	14575	14575.1	Waste collection from 12 heaps. Traffic congestion on road due to TT	
A7-21,22	1:16	1:34	N 32° 8'56.89" E 74°10'52.96"	N 32° 8'57.10" E 74°10'41.64"	Gulistan colony bazar	14575.2	14575.5	waste collection from 52 heaps	
A7-23	1:40	1:53	N 32° 8'57.52" E 74°10'41.98"			plot in Gulistan colony bazar at point A7-22	14575.5	Same	Smoking and gossip of loaders. Waste collection from one point and loaded hand cart waste on TT
A7-24,25	1:54	2:03	N 32° 8'57.53" E 74°10'42.03"	N 32° 8'57.66" E 74°10'43.36"	Factory in Gulistan colony	14575.6	Same	waste of steel factory	
A7-26,27	2:51	2:54	N 32°12'24.35" E 74° 7'57.72"	N 32°12'25.89" E 74° 8'1.04"	Gondlanwala dump site	14587.8	14588	Unloading of waste	
A7-28,29	3:30	3:44	N 32° 8'36.19" E 74°11'33.04"	N 32° 8'36.11" E 74°11'33.04"	Filling Station	14599.4	Same	Gossip with supervisor for 2minutes and fuel filling	
A7-30,31	3:50	3:51	N 32° 8'38.76" E 74°11'11.62"	N 32° 8'38.86" E 74°11'11.39"	Garage	14601	Same	Parking of Vehicle	

Sheet # A8								
<b>Date :</b>		16/12/14		<b>Plate no. of Vehicle :</b>			Holland -2	
<b>Name of Surveyor :</b>		Aqsa Sadiq		<b>Type of Collection Vehicle:</b>			Tractor Trolley	
<b>Name of Employee:</b>		Tabassum Phool		<b>Name of Data Recorder:</b>			Aqsa Sadiq	
<b>Collection Area/ UC No. :</b>		40		<b>Nominal Vehicle Capacity:</b>			3.2 m <sup>3</sup>	
<b>No. of Collection Crew:</b>		3 (2 helpers,1 driver)		<b>Weather:</b>			Cloudy	
Point No.	Time		Coordinates		Description of Point (Address,road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight. Loading, unloading, traffic condition etc.)
	Arrival Time	Departure Time				At Arrival	At Departure	
A8-1,2	7:40	7:43	N 32° 8'38.55" E 74°11'11.79"	N 32° 8'38.38" E 74°11'10.95"	GWMC Workshop	14624	Same	Vehicle inspection & engine startup
A8-3,4	7:48	7:50	N 32° 8'57.15" E 74°11'28.56"	N 32° 8'57.54" E 74°11'28.60"	Tyre puncture shop	14625	Same	Tyre tube inspection and adjustment of air pressure
A8-5,6	7:52	7:54	N 32° 8'36.16" E 74°11'33.37"	N 32° 8'36.21" E 74°11'33.40"	Filling Station	14625.7	Same	Fuel filling
A8-7,8	8:10	8:58	N 32° 9'1.72" E 74°10'25.29"	N 32° 8'33.51" E 74°10'28.60"	Jinnah Road	14629.1	14630	Reached in UC one loader arrived in time and second was late, reluctant toward work because he was feeling cold. 83 heaps.
A8-9,10	8:59	10:25	N 32° 8'32.89" E 74°10'29.02"	N 32° 8'55.44" E 74°10'51.18"	Mubarak Shah Road	14630	14631	spent 6 minutes in fodder market. No sweeping except outside Khalifa Aslam park. Took 45 minutes on lifting of a heap at point A8-10
A8-11,12	10:30	10:32	N 32° 8'39.42" E 74°10'34.80"	N 32° 8'39.40" E 74°10'34.79"	Tyre puncture shop, Mubarak Shah Road	14631.7	Same	58 heaps
A8-13,14	11:14	11:23	N 32°12'23.97" E 74° 7'57.64"	N 32°12'25.72" E 74° 8'1.57"	Gondlanwala Disposal Site	14643.7	14643.8	Unloading, TT stuck in waste during unloading bucket moved it out.
A8-15,16	12:00	12:16	N 32° 9'0.97" E 74°10'25.58"	N 32° 9'1.27" E 74°10'34.89"	Sagheer Park wala gala	14654.7	14655	wait of helpers who arrived 3minutes late started lifting from A8-15. 23 heaps
A8-17,18	12:17	12:53	N 32° 9'1.26" E 74°10'35.14"	N 32° 8'56.31" E 74°10'31.75"	Alhaj master Mushtaq wala gala	14655	14655.6	10 Houses and shops, 37 street heaps
A8-19,20	1:01	1:04	N 32° 8'57.47" E 74°10'41.61"	N 32° 8'57.51" E 74°10'43.04"	A plot on Gulistan colony.	14656.1	Same	Consumption of time on an eatable shop. Lifting of one heap
A8-21,22	1:06	1:52	N 32° 8'55.77" E 74°10'43.55"	N 32° 8'55.24" E 74°10'51.14"	Gulistan colony bazar	14656.2	14656.4	quarrell with a factory worker on disposal of their factory waste into the TT. 4 sacks of factory waste were loaded in TT. No sweeping waste was observed.
A8-23,24	2:33	2:36	N 32°12'23.93" E 74° 7'57.69"	N 32°12'25.98" E 74° 8'1.09"	Gondlanwala Disposal Site	14669.1	14669.3	Unloading.
A8-25,26	3:14	3:24	N 32° 8'36.08" E 74°11'33.04"	N 32° 8'36.06" E 74°11'33.09"	Filling Station	14681.7	Same	Fuel filling
A8-27,28	3:30	3:32	N 32° 8'38.56" E 74°11'11.98"	N 32° 8'38.61" E 74°11'11.85"	GWMC Workshop	14682.3	Same	Parking

Sheet # A9							
Date :	16/12/14			Plate no. of Vehicle :	Holland -2		
Name of Surveyor :	Aqsa Sadiq			Type of Collection Vehicle:	Tractor Trolley		
Name of Employee:	Tabassum Phool			Name of Data Recorder:	Aqsa Sadiq		
Collection Area/ UC No. :	40			Nominal Vehicle Capacity:	3.2 m <sup>3</sup>		
No. of Collection Crew:	3 (2 helpers,1 driver)			Weather:	Cloudy		
Point No.	Time		Coordinates	Description of Point (Address,road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight. Loading, unloading, traffic condition etc.)
	Arrival Time	Departure Time			At Arrival	At Departure	
A9-1,2	7:35	7:42	N 32° 8'38.51" E 74°11'12.01"	GWMC Workshop	14705	Same	Vehicle inspection, engine start up and air pressure adjustment from GWMC mobile workshop
A9-3,4	7:50	7:53	N 32° 8'36.22" E 74°11'33.41"	Filling Station	14706.5	Same	Fuel filling
A9-5,6	8:14	8:16	N 32° 9'1.03" E 74°10'25.59"	Sagheer park wala gala	14710	Same	Reached at point # 1 at 08:10 AM, waited for loaders who reached at 08:13 and started lifting heap # 1.
A9-7,8	8:17	8:19	N 32° 9'0.91" E 74°10'25.76"	Sagheer park wala gala	14710	Same	4 Heaps on entrance of gala
A9-9,10	8:25	8:31	N 32° 9'1.72" E 74°10'25.40" E N 32° 8'54.09" E 74°10'26.23"	Jinnah Road	14710.1	14710.3	22 street heaps and 1 house
A9-11,12	8:32	8:36	N 32° 8'53.95" E 74°10'26.25"	Jinnah Road	14710.3	Same	One large heap of road
A9-13	8:36	8:53	N 32° 8'33.00" E 74°10'28.64"	Point A9-12 to Mian Sansi pulley on Jinnah Road	14711	Same	52 Heaps, 2 Shops, 1 House
A9-14,15	8:55	9:17	N 32° 8'48.27" E 74°10'43.57" E N 32° 8'58.10" E 74°10'53.46"	Mubarak Shah Road near Mian Sansi Pulley	14711	14711.6	No sweeping up to Khalifa Aslam park. 52 heaps and tea break.
A9-16	9:33	9:58	N 32° 8'56.78" E 74°10'52.86" E N 32° 8'57.47" E 74°10'42.09"	Mubarak Shah Road near main graveyard	14711.6	14712.1	38 Heaps. 2nd helper left at 9:50
A9-17,18	10:00	10:18	N 32° 9'0.95" E 74°10'35.34" E N 32° 8'56.57" E 74°10'31.97"	Gulistan colony bazar	14712.2	14712.5	No sweeping in bazar, 47 heaps
A9-19,20	10:24	11:23	N 32° 9'1.12" E 74°10'34.68" E N 32° 9'0.93" E 74°10'25.93"	Gala Alhaj Master Mushtaq Wala	14712.8	14713.4	2nd helper came back at 10:26AM but started work at 11:00AM. 45 heaps, 16 houses and shops.
A9-21,22	11:26	11:46	N 32°12'23.98" E 74° 7'57.63" E N 32°12'25.91" E 74° 8'1.44"	Gala Sagheer Park Wala	14713.9	14714.1	Spent 12 minutes on lifting of a big heap near college , 20 heaps in total
A9-23,24	12:24	12:28	N 32° 8'36.05" E 74°11'33.09"	Disposal Site	14725	14725.2	Unloading of waste, Silencer of vehicle broke in the way from already welded point
A9-25,26	1:11	1:14	N 32° 8'36.55" E 74°11'33.39"	Filling Station	14736.5	Same	Fuel filling
A9-27	1:20	1:23	N 32° 8'38.29" E 74°11'13.00"	Garage	14738.1	Same	Traffic congestion near bus stands

Sheet # A10								
Date :		20/12/14		Plate no. of Vehicle :		Holland -2		
Name of Surveyor :		Aqsa Sadiq		Type of Collection Vehicle:		Tractor Trolley		
Name of Employee:				Name of Data Recorder:		Aqsa Sadiq		
Collection Area/ UC No. :		40		Nominal Vehicle Capacity:		3.2 m <sup>3</sup>		
No. of Collection Crew:		2 (1 helper, 1 driver)		Weather:		Foggy		
Point No.	Time		Coordinates		Description of Point (Address, road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight, Loading, unloading, traffic condition etc.)
	Arrival Time	Departure Time				At Arrival	At Departure	
A10-1,2	7:31	7:35	N 32° 8'38.84"	E 74° 11'11.72"	Workshop	14782	Same	Vehicle inspection & engine startup
A10-3,4	7:40	7:44	N 32° 8'57.47"	E 74° 11'28.65"	Air pressure of tyre	14782.9	Same	Opposite to police station/sabzi mandi
A10-5,6	7:47	7:49	N 32° 8'36.32"	E 74° 11'33.67"	Filling station	14783.6	Same	Fuel filling
A10-7,8	8:05	8:12	N 32° 9'0.82"	E 74° 10'25.55"	Sagheer park wala gala	14787.1	Same	Waste Collection (4 heaps)
A10-9,10	8:13	8:21	N 32° 9'1.64" 74° 10'25.36"	E N 32° 8'53.89" 74° 10'26.19"	Jinnah Road	14787.1	14787.3	Waste Collection (18 heaps )
A10-11	8:22	8:28	N 32° 8'53.87"	E 74° 10'26.31"	St # 4, Mohalla Nagar	14787.3	Same	Waste Collection (1 heap)
A10-12	8:28	8:44	N 32° 8'33.12"	E 74° 10'28.76"	Jinnah Road	14787.3	14788	Second helper arrived at 8:42 am. (Waste collection 49 points & 1 house )
A10-13	8:45	8:50	N 32° 8'32.91"	E 74° 10'29.10"	Mubarakshah .Mian Sansi	14788	14788.1	Waste Collection (7 points)
A10-14	8:50	9:03	N 32° 8'34.54"	E 74° 10'30.32"	Mubarakshah road	14788.1	Same	Gossips, hand warming & fodder collection
A10-15	9:03	9:05	N 32° 8'37.18"	E 74° 10'32.76"	Mubarakshah road	14788.2	Same	No sweeping on road, water filling in bottle
A10-16,17	9:06	9:26	N 32° 8'38.32" 74° 10'33.75"	E N 32° 8'57.49" 74° 10'53.12"	Mubarakshah road	14788.2	14789.1	Waste Collection near graveyard (61 points & 1 house)
A10-18,19	9:28	9:40	N 32° 8'56.98" 74° 10'52.75"	E N 32° 8'57.52" 74° 10'42.31"	Gulshan Colony	14789.1	14789.4	Waste Collection (27 points)
A10-20,21	9:45	10:14	N 32° 9'0.16" 74° 10'39.08"	E N 32° 9'0.36" 74° 10'38.96"	Data ganj bakhsh town near bazaar	14789.6	Same	Waste Collection (1 small & 1 big heap on street corner on advice of supervisor. Cigarette break big heap started at 9:55, 5 months old C&D)
A10-22,23	10:22	11:13	N 32° 9'4.29" 74° 10'37.25"	E N 32° 8'56.49" E74° 10'32.02"	Gala Master Mushtaq wala	14789.9	Same	Waste Collection (32 points & 45 Houses)
A10-24,26	11:16	11:28	N 32° 9'1.13" 74° 10'34.85"	E N 32° 9'0.99" 74° 10'26.32"	Sagheer park wala gala	14791.2	14791.4	Waste Collection (15 points)
A10-27,28	12:04	12:08	N 32° 12'24.21"	E 74° 7'57.84"	Gondalwala dumping site	14802.1	14802.2	Unloading of waste
A10-29,30	12:54	1:01	N 32° 12'24.02"	E 74° 7'57.74"	Filling station	14813.8	Same	Traffic at gondalwala road due to railway gate closure. Fuel filling
A10-31,32	1:08	1:09	N 32° 8'38.66"	E 74° 11'12.06"	GWMC Workshop	14815.7	Same	Parking

Sheet # U1							
Date	9/12/2014		Plate no. of Vehicle		GAG 1196		
Name of Surveyor	Umama Saleh Qureshi		Type of Collection Vehicle		Arm Roll truck		
Name of Employee	Self		Name of Data Recorder		Umama Saleh Qureshi		
Collection Area/ UC No.	UC # 4, 8, 15, 17, 64		Nominal Vehicle Capacity		5m3		
No. of Collection Crew	1 Driver		Weather		Sunny		
Point No.	Arrival Time	Departure Time	Coordinates	Description of Point (Address, road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight. Loading, unloading, traffic condition etc.)
					At Arrival	At Departure	
Garage U1-1	6:45	7:18	32° 8'38.67"N 74° 11'11.99"E	Work Shop	736.3	Same	Engine Startup and vehicle inspection
U1-2	7:22	7:28	32° 8'35.55"N 74° 11'34.11"E	Filling Station	738	Same	Fuel filling
U1-3	7:36	7:44	N 32 10 22.5 E 074 10 57.9	General Bus Stand, UC # 4	742.2	Same	1st container loading
U1-4	8:03	8:08	N 32 12 24.6 E 074 07 58.8	Gondlawala	752.9	Same	1st Trip / Unloading of waste and vehicle inspection
U1-5	8:36	8:43	N 32 10 17.1 E 74 12 17.3	Delta Road in ground UC # 15	769	Same	2nd container loading
U1-6	9:10	9:19	N 32 12 24.6 E 074 07 58.8	Gondlawala	783	Same	2nd Trip / Unloading of waste and vehicle inspection
U1-7	9:58	9:59	N 32 11 07.4 E 74 10 34.3	Kashmir road Rang wali kothi UC # 64	795	Same	Half Filled
U1-8	10:13	10:23	N 32 10 12.5 E 074 11 59.6	Graveyard, Church Road UC # 17	801	Same	Half Filled
U1-9	10:37	10:44	N 32 11 07.5 E 074 10 34.4	Kashmir road Rang wali kothi UC # 64	807	Same	3rd container loading
U1-10	11:01	11:08	N 32 12 25.3 E 074 07 59.9	Gondlawala	816	Same	3rd Trip / Unloading of waste and vehicle inspection
U1-11	11:36	11:53	N 32 10 12.1 E 074 12 00.0	Graveyard, Church Road UC # 17	832	Same	4th Container loading. No proper Place for Container
U1-12	12:30	12:40	N 32 12 25.2 E 074 07 59.5	Gondlawala	845	Same	4th Trip / Unloading of waste and vehicle inspection
U1-14	1:03	1:03	N 32 11 08.5 E 074 10 35.0	Kashmir road Rang wali kothi UC # 64	854	Same	Container was not filled
U1-15	1:14	1:24	N 32 11 34.0 E 074 11 01.0	Gao Shala near Millar Road UC # 8	859	Same	5th container loading
U1-17	1:51	1:59	N 32 12 25.1 E 074 07 59.6	Gondlawala	869	Same	5th Trip / Unloading of waste and vehicle inspection
U1-19	2:36	2:50	N 32 08 36.0 E 074 11 33.6	Filling Station	884	Same	Fuel filling
U1-20	2:55	Same	N 32 08 38.3 E 074 11 12.6	GWMC, Garage	886	Same	Vehicle Parking and Over Inspection

Sheet # U2							
Date	10/12/2014		Plate no. of Vehicle	GAG 1196			
Name of Surveyor	Umama Saleh Qureshi		Type of Collection Vehicle	Arm Roll truck			
Name of Employee	Self		Name of Data Recorder	Umama Saleh Qureshi			
Collection Area/ UC No.	UC # 4, 15, 52, 64		Nominal Vehicle Capacity	5m3			
No. of Collection Crew	1 Driver		Weather	Sunny			
Point No.	Arrival Time	Departure Time	Coordinates	Description of Point (Address, road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight. Loading, unloading, traffic condition etc.)
					At Arrival	At Departure	
Garage U2-1	6:53	7:02	32° 8'38.16"N 74°11'10.84"E	Work Shop	58907	Same	Engine Startup and vehicle inspection
U2-2	7:00		32° 8'38.09"N 74°11'10.81"E	Work Shop	58907	Same	
U2-4	7:04	7:07	32° 8'49.95"N 74°11'23.52"E	Shekhupura Road	58907.3	Same	Tyre tube air pressure adjustment
U2-5	7:10	7:17	32° 8'35.59"N 74°11'33.58"E	Filling Station	58908	Same	Tank Filling
U2-7	7:26	7:32	32°10'22.54"N 74°10'57.92"E	General Bus Stand, UC # 4	58912.5	Same	1st container loading
U2-9	7:50	8:42	32°12'25.11"N 74° 7'59.52"E	Gondlawala	58923	Same	1st Trip / unloading of container and vehicle inspection
U2-11	9:07	9:13	32°10'16.99"N 74°12'17.30"E	Delta Road in ground UC # 15	58939	Same	2nd container loading, Bad Road Condition even not a Proper Road
U2-13	9:39	9:54	32°12'24.34"N 74° 7'58.13"E	Gondlawala	58953	Same	2nd Trip / unloading of container and vehicle inspection
U2-15	10:15	10:22	32°12'54.68"N 74°10'21.08"E	Breakfast	58959	Same	Breakfast
U2-16	10:35	11:08	32°11'7.24"N 74°10'34.09"E	Kashmir road Rang wali kothi UC # 64	58965	Same	3rd container loading
U2-18	11:27	11:35	32°12'24.42"N 74° 7'57.97"E	Gondlawala	58974.8	Same	3rd Trip / unloading of container and vehicle inspection
U2-20	12:20	12:33	32°10'22.83"N 74°10'57.72"E	General Bus Stand, UC # 4	58993	Same	4th container loading, Proper Place for Container
U2-22	12:53	13:01	32°12'24.65"N 74° 7'58.23"E	Gondlawala	59004	Same	4th Trip / unloading of container and vehicle inspection
U2-24	1:23	1:38	32° 9'22.48"N 74°10'2.64"E	Qadri Darbar Transfer Station UC # 52	59014	Same	5th container loading, Temporary Transfer Station
U-26	1:59	2:06	32°12'24.43"N 74° 7'57.99"E	Gondlawala	59024.5	Same	5th Trip / unloading of container and vehicle inspection
U2-28	2:34	2:41	32° 8'36.10"N 74°11'33.44"E	Filling Station	59040	Same	Tank Filling
U2-30	2:48	2:52	32° 8'38.22"N 74°11'11.54"E	Work Shop	59042	Same	Parking and inspection of the Vehicle



Sheet # U3							
<b>Date</b>		11/12/2014		<b>Plate no. of Vehicle</b>		GAG 1196	
<b>Name of Surveyor</b>		Umama Saleh Qureshi		<b>Type of Collection Vehicle</b>		Arm Roll truck	
<b>Name of Employee</b>		Self		<b>Name of Data Recorder</b>		Umama Saleh Qureshi	
<b>Collection Area/ UC No.</b>		UC # 4, 15, 52, 64		<b>Nominal Vehicle Capacity</b>		5m3	
<b>No. of Collection Crew</b>		1 Driver		<b>Weather</b>		Sunny	
Point No.	Arrival Time	Departure Time	Coordinates	Description of Point (Address, road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight. Loading, unloading, traffic condition etc.)
					At Arrival	At Departure	
Garage U3-1	6:52	6:52	32° 8'37.99"N 74° 11'11.85"E	Work Shop	65	Same	Vehicle inspection and engine startup.
U3-2	6:53	7:01	32° 8'37.92"N 74° 11'11.89"E	Work Shop	65	Same	
U3-3	7:03	7:05	32° 8'38.20"N 74° 11'13.37"E	Work Shop	65	Same	
U3-4	7:10	7:18	32° 8'35.78"N 74° 11'33.60"E	Filling Station	67	Same	Tank Filling
U3-6	7:30	7:37	32° 10'22.71"N 74° 10'57.66"E	General Bus Stand, UC # 4	71	Same	1st container loading
U3-8	7:59	8:09	32° 12'24.34"N 74° 7'57.95"E	Gondlawala	81	Same	1st Trip / waste unloading and vehicle inspection.
U3-10	8:41	8:45	32° 10'16.69"N 74° 12'17.43"E	Delta Road in ground UC # 15	98	Same	2nd container loading, Bad Road Condition
U3-12	9:13	9:18	32° 12'24.38"N 74° 7'58.09"E	Gondlawala	112	Same	2nd Trip / waste unloading and vehicle inspection.
U3-14	9:29	9:39	32° 12'54.50"N 74° 10'22.27"E	Breakfast	117	Same	Breakfast
U3-15	9:55	10:57	32° 11'7.29"N 74° 10'34.13"E	Kashmir road Rang wali kothi UC # 64	124	Same	3rd container loading
U3-17	11:22	11:26	32° 12'24.40"N 74° 7'58.15"E	Gondlawala	133	Same	3rd Trip / waste unloading and vehicle inspection.
U3-19	11:49	12:11	32° 9'21.64"N 74° 10'2.49"E	Qadri Darbar Transfer Station UC # 52	143.7	Same	4th container loading
U3-21	12:34	12:41	32° 12'24.60"N 74° 7'58.80"E	Gondlawala	153.5	Same	4th Trip / waste unloading and vehicle inspection.
U3-23	1:04	1:22	32° 9'22.45"N 74° 10'2.52"E	Qadri Darbar Transfer Station UC # 52	163	Same	5th container loading
U3-25	1:48	1:53	32° 12'24.36"N 74° 7'58.18"E	Gondlawala	173.5	Same	5th Trip/ waste unloading and vehicle inspection.
U3-27	2:22	2:30	32° 8'36.12"N 74° 11'33.37"E	Filling Station	189.4	Same	Fuel Filling
U3-29	2:35	2:36	32° 8'38.68"N 74° 11'12.74"E	Work Shop	190.9	Same	Parking of the Vehicle

Sheet # U4							
<b>Date</b>		12/12/2014		<b>Plate no. of Vehicle</b>		GAG 1196	
<b>Name of Surveyor</b>		Umama Saleh Qureshi		<b>Type of Collection Vehicle</b>		Arm Roll truck	
<b>Name of Employee</b>		Self		<b>Name of Data Recorder</b>		Umama Saleh Qureshi	
<b>Collection Area/ UC No.</b>		UC # 4, 15, 17, 64		<b>Nominal Vehicle Capacity</b>		5m3	
<b>No. of Collection Crew</b>		1 Driver		<b>Weather</b>		Sunny	
Point No.	Arrival Time	Departure Time	Coordinates	Description of Point (Address,road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight. Loading, unloading, traffic condition etc.)
					At Arrival	At Departure	
Garage U4-1	7:00	7:12	32° 8'39.02"N 74°11'11.39"E	Work Shop	210	210	Engine Startup and vehicle inspection
U4-3	7:16	7:22	32° 8'35.63"N 74°11'33.88"E	Filling Station	211.5	211.5	Tank Filling
U4-5	7:32	7:39	32°10'22.83"N 74°10'57.09"E	General Bus Stand, UC # 4	216	216	1st container loading, Proper Place for Container
U4-7	7:57	8:09	32°12'24.57"N 74° 7'58.72"E	Gondlawala	226.5	226.5	Bucket was not available at site.
U4-8	8:09	8:15	32°12'24.38"N 74° 7'58.06"E	Gondlawala	226.5	226.5	1st Trip/ Unloading of waste and vehicle inspection
U4-10	8:41	8:48	32°10'12.96"N 74°11'59.30"E	Graveyard, Church Road UC # 17	242	242	2nd container loading, No Proper And Suitable Place for Container
U4-12	9:14	9:20	32°12'24.29"N 74° 7'58.04"E	Gondlawala	256	256	2nd Trip / Unloading of waste and vehicle inspection
U4-14	9:30	9:43	32°12'54.16"N 74°10'21.08"E	Breakfast	261.7	261.7	Breakfast
U4-16	10:03	10:08	32°10'16.86"N 74°12'17.43"E	Delta Road in ground UC # 15	272	272	3rd container loading, No Proper Roas, Place in a ground
U4-18	10:38	10:45	32°12'24.31"N 74° 7'58.09"E	Gondlawala	286.3	286.3	3rd Trip / Unloading of waste and vehicle inspection
U4-20	11:09	11:15	32°11'6.56"N 74°10'33.77"E	Kashmir road Rang wali kothi UC # 64	298	298	4th container loading, Very Bad Condition of the Road
U4-22	11:38	11:46	32°12'24.35"N 74° 7'58.22"E	Gondlawala	307.5	307.5	4th Trip / Unloading of waste and vehicle inspection
U4-24	12:21	12:27	32°11'6.97"N 74° 9'58.94"E	Rori Bazar, Rasool pura near main drain UC # 64	320	320	5th container loading, Not Even a Road
U4-26	12:59	1:17	32°12'24.43"N 74° 7'58.15"E	Gondlawala	332.4	332.4	5th Trip / Unloading of waste and vehicle inspection
U4-28	1:43	1:53	32° 8'35.82"N 74°11'33.39"E	Filling Station	348	348	Tank Filling
U4-30	1:57	2:00	32° 8'38.58"N 74°11'11.94"E	Work Shop	350	350	Parking the Vehicle

Sheet # U5							
<b>Date</b>		13-12-14		<b>Plate no. of Vehicle</b>		GAG 1196	
<b>Name of Surveyor</b>		Umama Saleh Qureshi		<b>Type of Collection Vehicle</b>		Arm Roll truck	
<b>Name of Employee</b>		Self		<b>Name of Data Recorder</b>		Umama Saleh Qureshi	
<b>Collection Area/ UC No.</b>		UC # 4, 15, 17, 64		<b>Nominal Vehicle Capacity</b>		5m3	
<b>No. of Collection Crew</b>		1 Driver		<b>Weather</b>		Sunny	
Point No.	Arrival Time	Departure Time	Coordinates	Description of Point (Address, road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight. Loading, unloading, traffic condition etc.)
					At Arrival	At Departure	
Garage U5-1	6:48		32° 8'38.92"N 74°11'12.01"E	Work Shop	59372	Same	Engine Startup and vehicle inspection
U5-2	6:55	7:20	32° 8'38.83"N 74°11'11.97"E	Work Shop	59372	Same	
U5-4	7:24	7:30	32° 8'35.82"N 74°11'33.49"E	Filling Station	373.9	Same	Tank Filling
U5-6	7:38	7:47	32°10'22.69"N 74°10'57.40"E	General Bus Stand, UC # 4	378	Same	1st container loading, Proper Place for Container
U5-8	8:06	8:13	32°12'24.33"N 74° 7'58.08"E	Gondlawala	389	Same	1st Trip / Unloading of waste and vehicle inspection
U5-10	8:41	8:47	32°10'16.68"N 74°12'17.39"E	Delta Road in ground UC # 15	405	Same	2nd container loading Place in a Open Ground
U5-12	9:15	9:21	32°12'24.32"N 74° 7'58.06"E	Gondlawala	419	Same	2nd Trip / Unloading of waste and vehicle inspection
U5-14	9:32	9:44	32°12'54.33"N 74°10'21.10"E	Breakfast	424	Same	Breakfast
U5-16	10:02	10:14	32°10'12.66"N 74°11'59.50"E	Graveyard, Church Road UC # 17	435	Same	Container was not fill
U5-18	10:25	10:34	32°10'22.62"N 74°10'57.77"E	General Bus Stand, UC # 4	438	Same	3rd container loading, Proper Place for Container
U5-20	10:54	11:00	32°12'24.42"N 74° 7'58.09"E	Gondlawala	449	Same	3rd Trip / Unloading of waste and vehicle inspection
U5-22	11:25	11:27	32°11'7.32"N 74°10'34.33"E	Kashmir road Rang wali kothi UC # 64	461	Same	Very Bad Condition & Container was Not filled
U5-24	11:46	12:05	32°10'0.55"N 74°12'46.62"E	Sabri chowk Tranfer Station UC # 17	468	Same	4th container loading, A Temporary Transfer Station
U5-27	12:46	12:51	32°12'24.29"N 74° 7'58.16"E	Gondlawala	484	Same	4th Trip / Unloading of waste and vehicle inspection
U5-29	1:13	1:19	32°11'7.34"N 74°10'34.38"E	Kashmir road Rang wali kothi UC # 64	495.9	Same	5th container loading, Bad Condition
U5-31	1:39	1:46	32°12'24.28"N 74° 7'57.90"E	Gondlawala	505	Same	5th Trip / Unloading of waste and vehicle inspection
U5-33	2:11	2:34	32°10'21.21"N 74°11'5.49"E	General Bus Stand, UC # 4	517.5	Same	Private Work Shop For Some Work of Vehicle
U5-35	2:45	2:59	32° 8'35.80"N 74°11'33.30"E	Filling Station	521	Same	Tank Filling
U5-37	3:04	3:06	32° 8'38.47"N 74°11'12.51"E	Work Shop	522	Same	Parking

Sheet # U6							
Date	15-12-14		Plate no. of Vehicle		Hino 9		
Name of Surveyor	Umama Saleh Qureshi		Type of Collection Vehicle		Arm Roll truck		
Name of Employee	Self		Name of Data Recorder		Umama Saleh Qureshi		
Collection Area/ UC No.	UC # 6, 56, 60, 61		Nominal Vehicle Capacity		5m3		
No. of Collection Crew	1 Driver		Weather		Intermittent clouds		
Point No.	Arrival Time	Departure Time	Coordinates	Description of Point (Address,road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight. Loading, unloading, traffic condition etc.)
					At Arrival	At Departure	
Garage U6-1	7:13	7:20	32° 8'37.94"N 74°11'10.90"E	Work Shop	59553.5	Same	Engine Startup and vehicle inspection
U6-3	7:24	7:30	32° 8'35.80"N 74°11'33.98"E	Filling Station	59555	Same	Tank Filling
U6-5	7:37	7:45	32°10'14.31"N 74°10'4.99"E	Talib Park, UC # 60	59562.4	Same	1st container loading, Very Narrow Street.
U6-7	8:13	8:18	32°12'24.31"N 74° 7'58.12"E	Gondlawala	59569.5	Same	1st Trip / Unloading of waste and vehicle inspection
U6-9	8:39	8:41	32°10'53.03"N 74°10'37.59"E	ShareefPura Chappar UC # 6	59577.8	Same	Waste was spread out & container was empty
U6-11	8:50	8:57	32°10'36.47"N 74° 9'54.71"E	Patha Mandi,Gondla Road UC # 61	59580	Same	2nd container loading, Container Placed on Road
U6-13	9:13	9:20	32°12'24.18"N 74° 7'58.26"E	Gondlawala	59586	Same	2nd Trip / Unloading of waste and vehicle inspection
U6-15	9:39	9:49	32°10'21.18"N 74°10'21.68"E	Gondalawala Road near Dhully Chowk UC # 56	59593.4	Same	3rd container loading, Road Condition is good and Container is place near Footpath
U6-17	10:08	10:20	32°12'24.27"N 74° 7'58.08"E	Gondlawala	59600	Same	3rd Trip / Unloading of waste and vehicle inspection
U6-19	10:44	1:59	32° 8'38.30"N 74°11'13.50"E	Work Shop	59616.8	Same	Brake Fail, Repairing on Work Shop
U6-21	2:17	2:23	32°10'53.03"N 74°10'37.40"E	ShareefPura Chappar UC # 6	59622	Same	Narrow Road, and waste was spread in open Ground
U6-23	2:27	2:30	32°10'33.75"N 74°10'24.47"E	Jinah Road UC # 6	59623	Same	4th container loading,Waste was on fire, putting some water
U6-25	2:49	2:54	32°12'24.70"N 74° 7'58.47"E	Gondlawala	59630	Same	4th Trip / Unloading of waste and vehicle inspection
U6-27	3:17	3:18	32°10'53.92"N 74°10'54.38"E	Lone Palace UC # 6	59642	Same	Container Was not Filled
U6-29	3:26	3:33	32°10'14.56"N 74°10'5.06"E	Talib Park, UC # 60	59644	Same	5th container loading,Very Narrow Street
U6-31	3:58	4:04	32°12'24.31"N 74° 7'58.32"E	Gondlawala	59651.3	Same	5th Trip / Unloading of waste and vehicle inspection
U6-33	4:36	4:43	32° 8'35.78"N 74°11'33.24"E	Filling Station	59667	Same	Tank Filling
U6-35	4:50	4:52	32° 8'38.46"N 74°11'12.73"E	Work Shop	59668.8	Same	Parking of vehicle.

Sheet # U7							
Date	16-12-2014		Plate no. of Vehicle	Hino 9			
Name of Surveyor	Umama Saleh Qureshi		Type of Collection Vehicle	Arm Roll truck			
Name of Employee	Self		Name of Data Recorder	Umama Saleh Qureshi			
Collection Area/ UC No.	UC # 4,6, 17, 60, 62		Nominal Vehicle Capacity	5m3			
No. of Collection Crew	1 Driver		Weather	Foggy weather			
Point No.	Arrival Time	Departure Time	Coordinates	Description of Point (Address, road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight. Loading, unloading, traffic condition etc.)
					At Arrival	At Departure	
Garage U7-1	7:05	7:09	32° 8'38.68"N 74°11'12.33"E	Work Shop	688	Same	Engine Startup and vehicle inspection
U7-3	7:13	7:16	32° 8'33.67"N 74°11'33.54"E	Filling Station	690	Same	Tank Filling
U7-5	7:26	7:32	32°10'53.58"N 74°10'54.75"E	Lone Palace, UC # 6	695	Same	1st container loading,
U7-7	8:00	8:08	32°12'24.48"N 74° 7'58.38"E	Gondlawala	704.6	Same	1st Trip / Unloading of waste and vehicle inspection
U7-9	8:23	8:31	32°12'54.75"N 74°10'21.15"E	Breakfast	710	Same	Breakfast
U7-11	8:48	8:54	32°10'29.45"N 74°10'28.44"E	Girls College Model Town UC # 6	718.3	Same	2nd container loading
U7-13	9:19	9:25	32°12'24.52"N 74° 7'58.46"E	Gondlawala	729.9	Same	2nd Trip / Unloading of waste and vehicle inspection
U7-15	9:59	10:03	32°10'14.25"N 74°10'5.20"E	Talib Park UC # 60	743.9	Same	3rd container loading
U7-17	10:31	10:39	32°12'24.59"N 74° 7'58.23"E	Gondlawala	755	Same	3rd Trip / Unloading of waste and vehicle inspection
U7-19	11:06	11:07	32°10'22.13"N 74°11'2.46"E	General Bus Stand UC # 4	768.5	Same	Container Was not Filled
U7-21	11:19	11:24	32°10'31.67"N 74° 9'39.87"E	Bagh Wala, near Allah hu Masjid, UC # 62	771	Same	Container Was not Filled
U7-23	11:47	12:24	32°10'1.09"N 74°12'46.45"E	Sabri Chowk Transfer Station UC # 17	779	Same	4th container loading
U7-25	1:00	1:07	32°12'24.65"N 74° 7'58.17"E	Gondlawala	795	Same	4th Trip / Unloading of waste and vehicle inspection
U7-27	1:41	1:47	32°10'14.14"N 74°10'5.04"E	Talib Park UC # 60	808.5	Same	5th container loading
U7-29	2:09	2:13	32°12'24.64"N 74° 7'58.41"E	Gondlawala	816	Same	5th Trip / Unloading of waste and vehicle inspection
U7-31	2:43	2:51	32° 8'36.07"N 74°11'33.38"E	Filling Station	832	Same	Tank Filling
U7-33	2:56	2:58	32° 8'38.75"N 74°11'12.51"E	Work Shop	833.5	Same	Parking of vehicle.

Sheet # U8							
Date		17-12-2014		Plate no. of Vehicle		Hino 9	
Name of Surveyor		Umama Saleh Qureshi		Type of Collection Vehicle		Arm Roll truck	
Name of Employee		Self		Name of Data Recorder		Umama Saleh Qureshi	
Collection Area/ UC No.		UC # 6, 17, 56, 60, 61, 62		Nominal Vehicle Capacity		5m3	
No. of Collection Crew		1 Driver		Weather		Foggy weather	
Point No.	Arrival Time	Departure Time	Coordinates	Description of Point (Address, road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight. Loading, unloading, traffic condition etc.)
					At Arrival	At Departure	
Garage U8-1	7:00	7:02	32° 8'38.41"N 74°11'12.15"E	Work Shop	853	Same	Engine Startup and vehicle inspection
U8-3	7:07	7:11	32° 8'35.82"N 74°11'33.62"E	Filling Station	854.5	Same	Tank Filling
U8-5	7:24	7:25	32°10'45.51"N 74°10'19.62"E	Deen Daran wala point graveyard UC # 61	861.4	Same	Container was not filled.
U8-7	7:29	7:29	32°10'21.68"N 74°10'21.32"E	Dhullay Chowk UC # 56	862.7	Same	Container was not filled.
U8-9	7:39	7:44	32°10'25.76"N 74° 9'44.46"E	Bagh wala UC # 62	865	Same	1st container loading
U8-11	8:05	8:10	32°12'24.51"N 74° 7'58.37"E	Gondlawala	871	Same	1st Trip / Unloading of waste and vehicle inspection
U8-13	8:30	8:38	32°12'54.32"N 74°10'21.10"E	Breakfast	877	Same	Breakfast
U8-15	8:55	9:07	32°10'53.84"N 74°10'37.30"E	Shareef pura chappar UC # 6	883.9	Same	Container was not filled.
U8-17	9:16	9:28	32°10'14.70"N 74°10'4.92"E	Talib park UC # 60	885.8	Same	Container was not filled.
U8-19	9:36	9:41	32°10'53.70"N 74°10'54.15"E	Lone Palace UC # 6	887.9	Same	2nd container loading
U8-21	10:04	10:22	32°12'24.40"N 74° 7'58.14"E	Gondlawala	897	Same	2nd Trip / Unloading of waste and vehicle inspection
U8-23	10:48	10:53	32°10'53.11"N 74°10'37.26"E	zahid Colony, Shareef Pura UC # 6	909.8	Same	3rd container loading
U8-25	11:14	11:23	32°12'24.50"N 74° 7'58.06"E	Gondlawala	919.7	Same	3rd Trip / Unloading of waste and vehicle inspection
U8-27	12:03	12:07	32°10'14.11"N 74°10'4.89"E	Talib park UC # 60	933.5	Same	4th container loading
U8-29	12:45	12:54	32°12'24.49"N 74° 7'58.21"E	Gondlawala	945.7	Same	4th Trip / Unloading of waste and vehicle inspection
U8-31	1:31	1:51	32° 9'59.90"N 74°12'47.02"E	Sabri Chowk Transfer Station UC # 17	958.5	Same	5th container loading
U8-33	2:35	2:41	32°12'24.39"N 74° 7'58.09"E	Gondlawala	974.8	Same	5th Trip / Unloading of waste and vehicle inspection
U8-35	3:07	3:19	32° 8'35.95"N 74°11'33.23"E	Filling Station	987.3	Same	Tank Filling
U8-37	15:26	3:29	32° 8'38.39"N 74°11'13.80"E	Work Shop	988.8	Same	Parking of vehicle.

Sheet # U9							
Date	18-12-2014		Plate no. of Vehicle	Hino 9			
Name of Surveyor	Umama Saleh Qureshi		Type of Collection Vehicle	Arm Roll truck			
Name of Employee	Self		Name of Data Recorder	Umama Saleh Qureshi			
Collection Area/ UC No.	UC # 6, 17, 60		Nominal Vehicle Capacity	5m3			
No. of Collection Crew	1 Driver		Weather	Cloudy weather			
Point No.	Arrival Time	Departure Time	Coordinates	Description of Point (Address,road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight. Loading, unloading, traffic condition etc.)
					At Arrival	At Departure	
Garage U9-1	6:56	6:59	32° 8'38.59"N 74°11'12.74"E	Work Shop	7	Same	Engine Startup and vehicle inspection
U9-3	7:02	7:04	32° 8'35.78"N 74°11'33.63"E	Filling Station	8	Same	Tank Filling
U9-5	7:19	7:23	32°10'14.42"N 74°10'5.11"E	Talib Park UC # 60	14	Same	1st container Loading
U9-7	7:44	7:51	32°12'24.31"N 74° 7'58.09"E	Gondlawala	21.4	Same	1st Trip / Unloading of waste and vehicle inspection
U9-9	8:22	8:28	32°10'29.56"N 74°10'28.60"E	Girls College Model Town UC # 6	35	Same	2nd container Loading
U9-11	8:54	8:58	32°12'24.32"N 74° 7'58.16"E	Gondlawala	46.5	Same	2nd Trip / Unloading of waste and vehicle inspection
U9-13	9:16	9:25	32°12'54.52"N 74°10'21.00"E	Breakfast	52	Same	Breakfast
U9-15	9:49	9:57	32°10'14.66"N 74°10'5.07"E	Talib Park UC # 60	60.7	Same	3rd container Loading
U9-17	10:23	10:28	32°12'24.33"N 74° 7'58.13"E	Gondlawala	72.2	Same	3rd Trip / Unloading of waste and vehicle inspection
U9-19	11:05	11:09	32°10'0.17"N 74°12'46.85"E	Sabri Chowk Transfer Station UC # 17	89	Same	Container was not filled
U9-21	11:23	11:34	32°10'15.51"N 74°12'47.25"E	Near By Sabri Chowk UC # 17	89.9	Same	4th container Loading
U9-23	12:13	12:22	32°12'24.33"N 74° 7'57.72"E	Gondlawala	105.9	Same	4th Trip / Unloading of waste and vehicle inspection
U9-25	12:45	12:50	32°10'53.11"N 74°10'37.26"E	Zahid Colony,Shareef Pura UC # 6	118	Same	5th container Loading
U9-27	1:12	1:17	32°12'24.41"N 74° 7'58.47"E	Gondlawala	128	Same	5th Trip / Unloading of waste and vehicle inspection
U9-29	1:44	1:52	32° 8'35.69"N 74°11'33.43"E	Filling Station	143.7	Same	Tank Filling
U9-31	1:57	2:02	32° 8'38.40"N 74°11'12.93"E	Work Shop	145.3	Same	Parking of vehicle.

Sheet # U10							
Date	22-12-2014		Plate no. of Vehicle		Hino 9		
Name of Surveyor	Umama Saleh Qureshi		Type of Collection Vehicle		Arm Roll truck		
Name of Employee	Self		Name of Data Recorder		Umama Saleh Qureshi		
Collection Area/ UC No.	UC # 6, 17, 56, 60, 61, 62		Nominal Vehicle Capacity		5m3		
No. of Collection Crew	1 Driver		Weather		Cloudy weather		
Point No.	Arrival Time	Departure Time	Coordinates	Description of Point (Address, road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight, Loading, unloading, traffic condition etc.)
					At Arrival	At Departure	
Garage U10-1	7:14	7:19	32° 8'39.0"N 74°11'11.6"E	Work Shop	80	Same	Engine Startup and vehicle inspection
U10-3	7:23	7:28	32° 8'36.0"N 74°11'33.7"E	Filling Station	80.6	Same	Tank Filling
U10-5	7:42	7:47	32° 10'14.2"N 74°10'05.0"E	Talib Park UC # 60	85.8	Same	1st container loading
U10-7	8:08	8:15	32° 12'24.3"N 74°07'58.4"E	Gondlawala	92.7	Same	1st Trip / Unloading of waste and vehicle inspection
U10-9	8:39	8:40	32° 10'53.0"N 74°10'37.4"E	Zahid Colony, Shareef Pura UC # 6	104	Same	Container was not filled
U10-11	8:44	8:47	32° 10'45.7"N 74°10'19.9"E	Deen Daar wala point UC # 61	104.9	Same	Container was not filled
U10-13	8:51	8:53	32° 10'29.8"N 74°10'28.6"E	Girls College Model Town, UC # 6	105.9	Same	Container was not filled
U10-15	8:53	8:56	32° 10'21.5"N 74°10'21.7"E	Dhullay Chowk, Gondlawala Road UC # 56	106.9	Same	Container was not filled
U10-17	9:06	9:07	32° 10'25.8"N 74°09'44.6"E	Bhag wala UC # 62	109.2	Same	Container was not filled
U10-19	9:13	9:19	32° 10'36.7"N 74°09'54.6"E	Gondlawala Road, near Fodder market UC # 61	110.2	Same	2nd container loading
U10-21	9:33	9:39	32° 12'24.4"N 74°07'58.3"E	Godlawala	116	Same	2nd Trip / Unloading of waste and vehicle inspection
U10-23	9:47	10:04	32° 12'54.6"N 74°10'21.0"E	Breakfast	121.4	Same	Breakfast
U10-25	10:29	10:30	32° 10'00.9"N 74°12'46.4"E	Sabri Chowk Transfer Station, UC # 17	132.5	Same	arrival at TS
U10-27	10:36	10:50	32° 10'07.4"N 74°12'46.6"E	Near By Sabri Chowk UC # 17	132.7	Same	3rd container loading
U10-29	11:32	11:39	32° 12'24.0"N 74°07'58.7"E	Gondlawala	148	Same	3rd Trip / Unloading of waste and vehicle inspection
U10-31	12:16	12:19	32° 10'14.5"N 74°10'05.0"E	Talib Park UC # 60	161.5	Same	4th container loading
U10-33	12:50	12:59	32° 12'24.5"N 74°07'58.5"E	Gondlawala	172	Same	4th Trip / Unloading of waste and vehicle inspection
U10-35	1:23	1:34	32° 10'53.0"N 74°10'37.3"E	Zahid Colony, Shareef Pura UC # 6	183.7	Same	5th container loading
U10-37	1:55	2:01	32° 12'24.4"N 74°07'58.3"E	Gondlawala	193.3	Same	5th Trip / Unloading of waste and vehicle inspection
U10-39	2:27	2:35	32° 8'35.8"N 74°11'33.4"E	Filling Station	208.3	Same	Tank Filling
U10-41	2:41	2:43	32° 8'38.8"N 74°11'11.8"E	Work Shop	209.8	Same	Parking of vehicle.



Sheet # H1							
Date	09 December, 2014		Plate no. of Vehicle		MB-2		
Name of Surveyor	Hina Ishaque		Type of Collection Vehicle		Arm Roll Truck		
Name of Employee	Aamir Javaid		Name of Data Recorder		Hina Ishaque		
Collection Area/ UC No.	17, 18		Nominal Vehicle Capacity		5m <sup>3</sup>		
No. of Collection Crew	No one		Weather		Sunny		
Point No.	Arrival Time	Departure Time	Coordinates	Description of Point (Address, road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight, loading, unloading, traffic condition etc.)
					At Arrival	At Departure	
H1-1	7:09	7:12	N: 32° 08' 38. 9" E: 074° 11' 11. 3"	Garage	14607	14607	Engine start up and inspection of vehicle
H1-2	7:16	7:21	N: 32° 08' 35. 4" E: 074° 11' 33. 9"	Shell Patrol Pump	14609	14609	Tank filling, 32 L
H1-3	7:32	7:57	N: 32° 09' 36. 1" E: 074° 13' 04. 5"	Chichar wala Pull near Mandi Zahid Pervaiz	14614	14614	First loading of container, Traffic flow is good. Container was empty and heaps of waste were present around the container, 2 sanitary workers were deployed there to dump waste in container.
H1-4	8:28	8:36	N: 32° 12' 24. 1" E: 074° 07' 57. 8"	Gondlanwala Dumping Site	14630	14630	1st unloading of container at Gondalanwala Dump site, Waste is 1920 kg and traffic flow is smooth because I am travelling from Sialkot bypass.
H1-5	9:08	9:15	N: 32° 09' 46. 1" E: 074° 12' 52. 1"	Fareed Town, Shah wala Graveyard	14648	14648	2nd loading of container.
H1-6	9:48	9:59	N: 32° 12' 23. 7" E: 074° 07' 57. 9"	Gondlanwala Dumping Site	14664	14664	2nd unloading. Driver did breakfast, so he stopped near Chichar wali canal he did break from 10:06 to 10:25. 3160 kg waste is unloaded at dump site.
H1-7	11:14	11:22	N: 32° 10' 19. 6" E: 074° 12' 35. 0"	Tariq Abad Ground	14687	14687	3rd loading of container, Due to school off time traffic is blocked in the street and street is small narrow so driver changed his route and moved through Delta road.
H1-8	11:56	12:02	N: 32° 12' 24. 1" E: 074° 07' 57. 7"	Gondlanwala Dumping Site	14702	14702	3rd unloading of container. Weight of waste is 2320 kg
H1-9	12:38	12:45	N: 32° 09' 36. 4" E: 074° 13' 04. 6"	Chichar wala Pull near Mandi Zahid Pervaiz	14721	14721	4th loading of container, No traffic problem
H1-10	1:21	1:28	N: 32° 12' 24. 1" E: 074° 07' 57. 8"	Gondlanwala Dumping Site	14736	14736	4th Unloading, weight of waste is 2440 kg
H1-11	2:02	2:07	N: 32° 08' 38. 7" E: 074° 11' 11. 7"	Workshop	14752	14752	Stop the vehicle and dis inspection of vehicle.

Sheet # H2							
Date	10 December, 2014		Plate no. of Vehicle		MB-2		
Name of Surveyor	Hina Ishaque		Type of Collection Vehicle		Arm Roll Truck		
Name of Employee	Aamir Javaid		Name of Data Recorder		Hina Ishaque		
Collection Area/ UC No.	17, 18		Nominal Vehicle Capacity		5m <sup>3</sup>		
No. of Collection Crew	No One		Weather		Sunny		
Point No.	Arrival Time	Departure Time	Coordinates	Description of Point (Address, road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight. Loading, unloading, traffic condition etc.)
					At Arrival	At Departure	
H2-1	7:11	7:20	N 32° 08' 39. 1" E 074° 11' 11. 8"	Garage	791	Same	Engine start up and inspection of vehicle
H2-2	7:22	7:26	N 32° 08' 50. 0" E 074° 11' 23. 6"	Sheikhupura Road	791.8	Same	Tyre checking
H2-3	7:29	7:33	N 32° 08' 35. 3" E 074° 11' 33. 6"	Shell Petrol Pump	792.9	Same	Tank filling, 22 L
H2-4, 5	7:46	8:01	N 32° 09' 36. 1" E 074° 13' 04. 6"	Chichar wala Pull near Mandi Zahid Pervaiz	798	Same	1st lifting of container, waste heaps around the container was lifted by the sanitary worker so it took time.
H2-6, 7	8:32	8:42	N 32° 12' 24. 1" E 074° 07' 58. 3"	Gondlanwala Dumping Site	814	Same	1st unloading of container. (1780 kg)
H2-8, 9	9:12	9:18	N 32° 09' 42. 8" E 074° 12' 41. 0"	Chichar wali purani chungi	831	Same	2nd lifting of container
H2-10, 11	9:50	10:09	N 32° 12' 24. 0" E 074° 07' 58. 4"	Gondlanwala Dumping Site	847.5	Same	2nd unloading. (3040kg),
H2-12, 13	11:08	11:16	N 32° 10' 02. 5" E 074° 12' 56. 8"	Fareed Road, Disposa Point	868.4	Same	3rd lifting of container.
H2-14, 15	11:41	11:52	N 32° 12' 24. 0" E 074° 07' 58. 1"	Gondlanwala Dumping Site	883.5	Same	3rd unloading of container. Weight of waste is 2020 kg
H2-16, 17	12:23	12:41	N 32° 09' 49. 0" E 074° 13' 11. 7"	Chaudhery Zaka Wala Gala	901.9	Same	Car was parked near the container so 10 mins wastage. during lifting container lid was loose so no lifting and moved to next point
H2-18, 19	12:47	12:52	N 32° 09' 36. 24" E 074° 13' 04. 55"	Chichar wala Pull near Mandi Zahid Pervaiz	903	Same	4th lifting of container
H2-20, 21	1:24	1:31	N 32° 12' 24. 21" E 74° 7' 58. 29"	Gondlanwala Dumping Site	917	Same	4th Unloading, weight of waste is 2240 kg
H2-22, 23	2:07	2:11	N 32° 8' 35. 80" E 74° 11' 33. 40"	Shell Patrol Pump	933.7	Same	Petrol filling 24L
H2-24, 25	2:17	2:21	N 32° 8' 38. 30" E 74° 11' 12. 84"	Workshop	935.9	Same	Stop the vehicle and dis inspection of vehicle.

Sheet # H3							
Date		11 December, 2014		Plate no. of Vehicle		MB-2	
Name of Surveyor		Hina Ishaque		Type of Collection Vehicle		Arm Roll Truck	
Name of Employee		Aamir Javaid		Name of Data Recorder		Hina Ishaque	
Collection Area/ UC No.		17, 18		Nominal Vehicle Capacity		5m <sup>3</sup>	
No. of Collection Crew		No One		Weather		Sunny	
Point No.	Arrival Time	Departure Time	Coordinates	Description of Point (Address, road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight. Loading, unloading, traffic condition etc.)
					At Arrival	At Departure	
H3-1,2	7:10	7:21	N 32° 8'38.81" E 74°11'11.41"	Garage	79638	Same	Engine tart up time, inspection of vehicle
H3-3,4	7:26	7:32	N 32° 8'36.15" E 74°11'33.12"	Shell Patrol Pump	79639	Same	Tank filling 2L
H3-5,6	7:46	8:09	N 32° 9'35.86" E 74°13'4.37"	Chichar wala Pull near Mandi Zahid Pervaiz	79646	Same	1st loading of container, Tea break from 7:54 to 8:02
H3-7,8	8: 37AM	8:43	32°12'24.00"N 74° 7'57.78"E	Gondlanwala Dumping Site	79660	Same	1st unloading of container at Gondlanwala , Traffic flow is good, Weight of waste is 2680 kg
H3-9,10	9:14	9:36	32° 9'47.00"N 74°12'51.91"E	Fareed Town, Qabristan Road	79677	Same	2nd lifting of container, container was not filled, sanitary workers filled the cntainer and we waited there.
H3-11,12	10:06	10:13	32°12'24.07"N 74° 7'58.21"E	Gondlanwala Dumping Site	79692	Same	2nd unloading at Gondlanwala, weight is 2160 kg
H3-13,14	11:05	11:10	32° 9'49.15"N 74°13'11.33"E	Chaudhery Zaka Wala Gala	79706	Same	3rd lifting of container
H3-15,16	11:35	23:45	32°12'23.97"N 74° 7'58.34"E	Gondlanwala Dumping Site	79723	Same	3rd unloading of container, weight of waste is 2000 kg
H3-17,18	12:42	12:48	32°10'20.09"N 74°12'35.74"E	Tariq Abad Ground	79739	Same	4th lifting,
H3-19,20	1:29	1:38	32°10'4.44"N 74°12'11.45"E	Gondlanwala Dumping Site	79756	Same	4th unloading of container, Traffic congestion due to school off time. Weight of waste is 1860 kg
H3-21,22	2:09	2:16	32° 8'35.70"N 74°11'33.35"E	Shell Patrol Pump	79771	Same	Tank filling 25L
H3-23,24	2:22	2:27	32° 8'38.17"N 74°11'13.31"E	Workshop	79773	Same	Stop the vehicle and dis inspection of vehicle.

Sheet # H4							
Date		12 December, 2014		Plate no. of Vehicle		MB-2	
Name of Surveyor		Hina Ishaque		Type of Collection Vehicle		Arm Roll Truck	
Name of Employee		Aamir Javaid		Name of Data Recorder		Hina Ishaque	
Collection Area/ UC No.		17, 18		Nominal Vehicle Capacity		5m <sup>3</sup>	
No. of Collection Crew		No One		Weather		Sunny	
Point No.	Arrival Time	Departure Time	Coordinates	Description of Point (Address, road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight. Loading, unloading, traffic condition etc.)
					At Arrival	At Departure	
H4-1,2	7:20	7:24	N 32° 8'38.81" E 74° 11'11.41"	Garage	79773	Same	Engine tart up time, inspection of vehicle
H4-3,4	7:30	7:33	N 32° 8'36.15" E 74° 11'33.12"	Shell Patrol Pump	79774	Same	Tank filling 3L
H4-5,6	7:44	8:09	N 32° 9'35.86" E 74° 13'4.37"	Chichar wala Pull near Mandi Zahid Pervaiz	79779	Same	1st loading of container, Tea break from 7:56 to 8:04
H4-7,8	8: 36 AM	8:45	32°12'24.00"N 74° 7'57.78"E	Gondlanwala Dumping Site	79795	Same	1st unloading of container at Gondlanwala , Heavy traffic flow at by pass road due to school timing, Weight of waste is 3200 kg
H4-9,10	9:13	9:20	32° 9'47.00"N 74°12'51.91"E	Fareed Road, Aashiq Butt General Store	79810	Same	2nd lifting of container, Traffic congestion at sialkot bypass road
H4-11,12	9:46	9:59	32°12'24.07"N 74° 7'58.21"E	Gondlanwala Dumping Site	79826	Same	2nd unloading at Gondlanwala, weight is 2680 kg
H4-13,14	10:27	10:43	32° 9'49.15"N 74°13'11.33"E	Chichar wali canal		Same	Breakfast break
H4-15,16	10:53	10:58	32°12'23.97"N 74° 7'58.34"E	Delta road	79849	Same	3rd lifting of container
H4-17,18	11:52	12:06	32°10'20.09"N 74°12'35.74"E	Gondlanwala Dumping Site	79864	Same	3rd unloading of container, weight of waste is 3060 kg, Traffic was blocked at Gondlanwala dumping site for 10 minutes and then on pini bypass for 7 minutes
H4-19,20	12:39	12:41	32°10'4.44"N 74°12'11.45"E	Delta road	79875	Same	Unlift the empty container because this container lid was loose, and it was filled late. Traffic congestion at Sialkot bypass.
H4-21,22	12:53	12:59	32° 8'35.70"N 74°11'33.35"E	Chaudhery Zaka wala Gala	79879	Same	4th lifting
H4-23,24	1:28	1:35	32° 8'38.17"N 74°11'13.31"E	Gondlanwala Dumping Site	79889	Same	4th unloading of container, Traffic congestion due to school off time. Weight of waste is 3440 kg
H4-25, 26	2:00	2:07	32° 8'35.70"N 74°11'33.35"E	Shell Patrol Pump	79907	Same	Tank filling 29L
H4-27,28	2:12	2:17	32° 8'38.17"N 74°11'13.31"E	Workshop	79909	Same	Stop the vehicle and dis inspection of vehicle.

Sheet # H5							
Date		13 December, 2014		Plate no. of Vehicle		MB-2	
Name of Surveyor		Hina Ishaque		Type of Collection Vehicle		Arm Roll Truck	
Name of Employee		Aamir Javaid		Name of Data Recorder		Hina Ishaque	
Collection Area/ UC No.		17, 18		Nominal Vehicle Capacity		5m <sup>3</sup>	
No. of Collection Crew		No One		Weather		Sunny	
Point No.	Arrival Time	Departure Time	Coordinates	Description of Point (Address, road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight. Loading, unloading, traffic condition etc.)
					At Arrival	At Departure	
H5-1,2	7:10	7:17	N 32° 08' 38.6" E 074° 11' 11. 8"	Workshop	79909	Same	Engine start up and inspection of vehicle
H5-3,4	7:19	7:22	N 32° 08' 50.2" E 074° 11' 25.3"	sheikhpura road tyre checking	79909.6	Same	Tyre check
H5-5,6	7:25	7:27	N 32° 08' 35.4" E 074° 11' 33.6"	Shell Petrol Pump	79910.2	Same	Tank filling (1.5 litre)
H5-7,8	7:39	7:57	N 32° 09' 36.0" E 074° 13' 04.6"	Chichar wala Pull near Mandi Zahid Pervaiz	79915	Same	1st lifting of container.
H5-9,10	8:24	8:32	N 32° 12' 24.1" E 074° 07' 58.2"	Gondlanwala Dumping Site	79930	Same	1st unloading. (3180 kg)
H5-11,12	9:01	9:07	N 32° 09' 46.8" E 074° 12' 51. 8"	Fareed town qabristan road	79949	Same	2nd lifting of container.
H5-13,14	9:34	9:47	N 32° 12' 24.1" E 074° 07' 58.4"	Gondlanwala Dumping Site	79965	Same	2nd unloading of container. Traffice blockage for 8 minutes at Sialkot bypass.(2600 kg)
H5-15,16	10:11	10:29	N 32° 10' 34.00" E 74° 13' 28.60"	Breakfast, Chichar wali canal	79980	Same	Breakfast
H5-17,18	10:34	10:35	N 32° 9' 49.02" E 74° 13' 11.78"	Chaudhery Zaka Wala Gala	79982	Same	Container didn't lift because wasn't filled
H5-19,20	10:39	10:44	N 32° 9' 36.17" E 74° 13' 4.52"	Chichar wala Pull near Mandi Zahid Pervaiz	79983.7	Same	3rd lifting of container
H5-21,22	11:13	11:24	N 32° 12' 24.34" E 74° 7' 58.47"	Gondlanwala Dumping Site	79998.6	Same	3rd unloading of container(1540 kg).Traffic blocked near BISE GRW. (4 mins.)
H5-23,24	12:10	12:12	N 32° 10' 19.65" E 74° 12' 35.14"	Tariqabad ground	80017.4	Same	Traffic congestion at sialkot flyover.No lifting of container as it wasn't filled.
H5-25,26	12:25	12:32	N 32° 9' 49.03" E 74° 13' 11.50"	Chaudhery Zaka Wala Gala	80021	Same	4th lifting of container
H5-27,28	12:58	1:02	N 32° 12' 24.09" E 74° 7' 58.33"	Gondlanwala Dumping Site	80034.4	Same	4th Unloading, weight of waste is 2140 kg
H5-29,30	1:32	1:41	N 32° 8' 35.66" E 74° 11' 33.97"	Shell Petrol Pump	80047.8	Same	Tank filling (29 litre)
H5-31,32	1:49	1:52	N 32° 08' 38.0" E 074° 11' 11.7"	Workshop	80049	Same	Parking and vehicle inspection

Sheet # H6							
Date	15 December, 2014		Plate no. of Vehicle	Hino-11			
Name of Surveyor	Hina Ishaque		Type of Collection Vehicle	Arm Roll Truck			
Name of Employee	Aamir Javaid		Name of Data Recorder	Hina Ishaque			
Collection Area/ UC No.	26, 27		Nominal Vehicle Capacity	5m <sup>3</sup>			
No. of Collection Crew	No One		Weather	Intermittent Clouds			
Point No.	Arrival Time	Departure Time	Coordinates	Description of Point (Address, road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight, Loading, unloading, traffic condition etc.)
					At Arrival	At Departure	
H6-1,2	7:41	7:46	32° 8'38.67"N 74°11'11.71"E	Workshop	210955	Same	Engine start up and inspection of vehicle, another vehicle is parked in front of Hino-11 so driver wait for that driver to come and moved that vehicle.
H6-3,4	7:48	7:52	32° 8'49.99"N 74°11'23.44"E	Sheikhpura Road	210955.3	Same	Tyre check
H6-5,6	7:55	8:04	32° 8'36.10"N 74°11'33.15"E	Shell Petrol Pump	210957	Same	Tank filling (64 litre)
H6-7,8	8:10	8:39	32° 7'39.52"N 74°12'27.18"E	Bihari Colony	210960.5	Same	1st lifting of container. No Traffic problem
H6-9,10	9:12	9:18	32°12'24.13"N 74° 7'58.36"E	Gondlanwala Dumping Site	210979.5	Same	1st unloading. Weight of waste is 2480 kg)
H6-11,12	9:43	9:48	32° 8'24.17"N 74°12'28.49"E	Worker's Welfare School, People's Colony	21097.8	Same	2nd lifting of container.
H6-13,14	10:16	10:24	32°12'23.82"N 74° 7'57.84"E	Gondlanwala Dumping Site	211015.4	Same	2nd unloading of container. Traffic flow is smooth. Weight of waste is 2600 kg
H6-15,16	10:46	10:54	32°12'20.68"N 74° 7'54.05"E	Worker's Welfare School, People's Colony	211033.7	Same	3rd lifting of container, No Traffic problem as roads are wide.
H6-17,18	11:20	11:26	32°12'24.19"N 74° 7'58.23"E	Gondlanwala Dumping Site	211051.3	Same	3rd unloading of container, Weight of waste is 1900 kg
H6-19,20	11:55	12:00	32° 8'24.28"N 74°12'28.23"E	Worker's Welfare School, People's Colony	211076.9	Same	Unload empty container that have loose lid and lift empty container that has proper lid.
H6-21,22	12:04	12:06	32° 7'39.84"N 74°12'27.09"E	Bihari Colony	211078.2	Same	4th lifting of container
H6-23,24	12:13	12:18	32° 7'5.40"N 74°12'19.77"E	Breakfast		Same	Breakfast
H6-25	12:22	1:47	32° 5'51.80"N 74°12'1.72"E	Problem in Vehicle, near Rathor Hospital, G.T. Road, GRW.	211091.4	Same	Fan Belt of Hino-11 is broken, so it stopped at main G.T. Road, GRW. Then driver called GWMC mobile Workshop, that mobile workshop reached after 45 minutes of calling. Mechanic adjusted the new fan belt just in 10 minutes. So vehicle remained there for 1 hour.
H6-26,27	2:11	2:19	32°12'24.17"N 74°7'58.42"E	Gondlanwala Dumping Site	211110.4	Same	4th Unloading, weight of waste is 1820 kg
H6-28,29	2:26	2:39	32°11'39.63"N 74° 8'7.44"E	Alipur Chatta Road		Same	Tea Break
H6-30,31	3:06	3:10	32° 7'39.59"N 74°12'27.15"E	Bihari Colony	211123	Same	5th lifting of container, Traffic is smooth
H6-32, 33	3:22	3:27	32° 6'58.50"N 74°11'49.72"E	G.T. Road	Same	Same	Waiting for someone
H6-34, 35	3:54	4:00	32°12'24.02"N 74° 7'57.66"E	Gondlanwala Dumping Site	211138	Same	5th unloading, weight of waste is 2820kg
H6-36, 37	4:24	4:30	32° 8'36.50"N 74°11'33.56"E	Shell Petrol Pump	211149.4	Same	Tank filling (53 litre)
H6-38,39	4:34	4:39	32° 8'38.67"N 74°11'12.19"E	Workshop	211151	Same	Parking and vehicle inspection

Sheet # H7							
Date		16 December, 2014		Plate no. of Vehicle		Hino-11	
Name of Surveyor		Hina Ishaque		Type of Collection Vehicle		Arm Roll Truck	
Name of Employee		Aamir Javaid		Name of Data Recorder		Hina Ishaque	
Collection Area/ UC No.		26, 27		Nominal Vehicle Capacity		5m <sup>3</sup>	
No. of Collection Crew		No One		Weather		Fog	
Point No.	Arrival Time	Departure Time	Coordinates	Description of Point (Address, road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight, Loading, unloading, traffic condition etc.)
					At Arrival	At Departure	
H7-1,2	7:28	7:34	32° 8'38.54"N 74°11'12.26"E	Workshop	211159	Same	Engine start up and inspection of vehicle.
H7-3, 4	7:39	7:42	32° 8'36.05"N 74°11'33.12"E	Shell Petrol Pump	211160.6	Same	Tank filling (11 litre)
H7-5, 6	7:54	8:00	32° 8'55.22"N 74°12'47.29"E	Faqirpura Chowk	211163.9	Same	1st lifting of container. Traffic flow is slow due to fog.
H7-7,8	8:40	8:47	32°12'24.31"N 74° 7'58.48"E	Gondlanwala Dumping Site	211182.9	Same	1st unloading. Weight of waste is 3600kg
H7-9, 10	9:18	9:22	32° 8'55.08"N 74°12'47.41"E	Faqirpura Chowk	211184.1	Same	Unload empty container and lift also empty container
H7-11,12	9:26	9:30	32° 8'24.44"N 74°12'28.41"E	Worker's Welfare School, People's Colony	211201.9	Same	2nd lifting of container. Traffic is slow at Bypass Road due to fog.
H7-13,14	10:00	10:09	32°12'24.00"N 74° 7'57.79"E	Gondlanwala Dumping Site	211221.4	Same	2nd unloading of container. Traffic flow is smooth. Weight of waste is 2660 kg
H7-15, 16	10:37	10:41	32° 8'23.86"N 74°12'28.32"E	Worker's Welfare School, People's Colony	211239.9	Same	3rd lifting of container, Traffic congestion at Sialkot bypass Road.
H7-17, 18	11:08	11:17	32°12'24.40"N 74° 7'58.47"E	Gondlanwala Dumping Site	211261.9	Same	3rd unloading of container, Weight of waste is 1380 kg, Traffic blocked at Pindi bypass road.
H7-19, 20	12:04	12:06	32° 8'24.41"N 74°12'28.37"E	Worker's Welfare School, People's Colony		Same	Container was not filled, Supervisor said driver to lift container of Biahary Colony. Smooth traffic flow.
H7-21, 22	12:09	12:13	32° 7'40.53"N 74°12'27.18"E	Bihari Colony	211280.8	Same	4th lifting of container
H7-23,24	12:44	12:50	32°12'24.28"N 74° 7'58.58"E	Gondlanwala Dumping Site	211297.9	Same	4th Unloading, weight of waste is 1800 kg
H7-25,26	1:17	1:24	32° 8'36.19"N 74°11'33.65"E	Shell Petrol Pump	211310.2	Same	Tank filling (42 litre)
H7-27, 28	1:27	1:33	32° 8'37.76"N 74°11'11.96"E	Workshop	211311.1	Same	Parking and vehicle inspection

Sheet # H8							
Date		17 December, 2014		Plate no. of Vehicle		Hino-11	
Name of Surveyor		Hina Ishaque		Type of Collection Vehicle		Arm Roll Truck	
Name of Employee		Aamir Javaid		Name of Data Recorder		Hina Ishaque	
Collection Area/ UC No.		People's Colony, Fareed Town		Nominal Vehicle Capacity		5m <sup>3</sup>	
No. of Collection Crew		No One		Weather		Fog	
Point No.	Arrival Time	Departure Time	Coordinates	Description of Point (Address, road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight, Loading, unloading, traffic condition etc.)
					At Arrival	At Departure	
H8-1,2	7:30	7:39	32° 8'38.19"N 74°11'12.60"E	Workshop	211311	Same	Engine start up and inspection of vehicle.
H8-3,4	7:43	7:47	32° 8'36.18"N 74°11'33.65"E	Shell Petrol Pump	211312	Same	Tank filling (2 litre)
H8-5,6	7:54	8:00	32° 8'5.25"N 74°12'39.03"E	Madni Ground	211315	Same	1st lifting of container. Traffic flow is slow due to fog.
H8-7,8	8:08	8:12	32° 9'43.23"N 74°13'17.79"E	Chichar wali Canal	211317	Same	Tea Break
H8-9,10	8:37	8:43	32°12'24.22"N 74° 7'58.43"E	Gondlanwala Dumping Site	211329	Same	1st unloading. Traffic congestion due to school timings. Weight of waste is 2360 kg
H8-11,12	9:19	9:25	32° 8'5.46"N 74°12'39.16"E	Madni Ground	211347	Same	Unload empty container and lift also empty container
H8-13,14	9:27	9:34	32° 8'23.88"N 74°12'28.32"E	Worker's Welfare School, People's Colony	211348	Same	2nd lifting of container. Traffic is slow due to fog.
H8-15,16	10:09	10:22	32°12'24.24"N 74° 7'57.66"E	Gondlanwala Dumping Site	211366	Same	2nd unloading of container. Traffic flow is smooth. Weight of waste is 3260 kg
H8-17,18	10:49	10:53	32° 8'24.21"N 74°12'28.44"E	Worker's Welfare School, People's Colony	211385	Same	3rd lifting of container, Traffic congestion at Sialkot bypass Road.
H8-19,20	11:26	11:32	32°12'24.34"N 74° 7'58.39"E	Gondlanwala Dumping Site	211404	Same	3rd unloading of container, Weight of waste is 1060 kg, Traffic flow is smooth.
H8-21,22	11:58	12:10	32° 9'53.67"N 74°13'19.24"E	Chichar wala Pull	211420	Same	Problem in vehicle, Complaint pipe around shaft becomes free. Driver drove the vehicle in very slow speed and reached patrol pump.
H8-23,24	12:33	12:39	32° 8'35.73"N 74°11'33.27"E	Shell Petrol Pump	211432	Same	Tank filling (36 litre)
H8-25,26	12:47	12:51	32° 8'38.54"N 74°11'12.03"E	Workshop	211434	Same	Parking and vehicle inspection



Sheet # H9							
Date		20 December, 2014		Plate no. of Vehicle		Hino-13	
Name of Surveyor		Hina Ishaque		Type of Collection Vehicle		Arm Roll Truck	
Name of Employee		Aamir Javaid		Name of Data Recorder		Hina Ishaque	
Collection Area/ UC No.		People's Colony, Allah Baksh Colony		Nominal Vehicle Capacity		5m <sup>3</sup>	
No. of Collection Crew		No One		Weather		Fog + Clouds	
Point No.	Arrival Time	Departure Time	Coordinates	Description of Point (Address, road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight. Loading, unloading, traffic condition etc.)
					At Arrival	At Departure	
H9-1,2	6:46	6:54	32° 8'37.95"N 74°11'11.30"E	Workshop	315.7	Same	Engine start up and inspection of vehicle.
H9-3,4	7:02	7:07	32° 8'35.99"N 74°11'33.97"E	Shell Petrol Pump	316.8	Same	Tank filling (63 litre)
H9-5,6	7:09	7:16	32° 8'33.82"N 74°12'3.65"E	Race course Road	318.2	Same	1st lifting of container. Traffic flow is slow due to fog.
H9-7,8	7:36	8:00	32°12'23.61"N 74° 7'57.84"E	Gondlanwala Dumping Site	333.4	Same	Weidgebridge operating person was late. We waited 30 minutes then he came.
H9-9,10	8:01	8:11	32°12'24.01"N 74° 7'58.47"E	Gondlanwala Dumping Site	333.4	Same	1st unloading. Weight of waste is 2680 kg. Traffic is slow due to dense fog.
H9-11,12	8:38	8:42	32° 7'40.52"N 74°12'27.37"E	Bihari Colony	355.2	Same	Container was not filled so did not lift and moved to next point.
H9-13,14	8:46	8:51	32° 8'23.73"N 74°12'28.50"E	Worker's Welfare School, People's Colony	356.7	Same	Container was not filled so did not lift and moved to next point.
H9-15,16	9:10	9:15	32° 7'40.26"N 74°12'27.34"E	Bihari Colony	360.4	Same	2nd lifting of container. Traffic is slow at Bypass Road due to fog.
H9-17,18	9:47	9:54	32°12'24.24"N 74° 7'57.67"E	Gondlanwala Dumping Site	379.9	Same	2nd unloading of container. Traffic flow is smooth. Weight of waste is 3860 kg
H9-19,20	10:26	10:35	32° 8'29.87"N 74°11'51.14"E	Along Railway Track, Near Nigar Phattak	392.9	Same	3rd lifting of container, Smooth traffic flow.
H9-21,22	11:04	11:12	32°12'24.49"N 74° 7'58.44"E	Gondlanwala Dumping Site	408.3	Same	3rd unloading of container, Weight of waste is 2140 kg, Traffic is smooth.
H9-23	11:25	11:34	32°12'11.74"N 74°11'22.90"E	Pindi Bypass Overhead Bridge		Same	My Vehicle (Ravi-Pick Up) stuck there because of slop, nearby persons helped us.
H9-24,25	11:45	11:57	32° 8'24.42"N 74°12'28.08"E	Worker's Welfare School, People's Colony	429.8	Same	4th lifting of container, Traffic is smooth.
H9-26,27	12:29	12:46	32°12'25.34"N 74° 8'0.02"E	Gondlanwala Dumping Site	445.9	Same	4th Unloading, weight of waste is 2240 kg
H9-28,29	1:25	1:30	32° 8'24.00"N 74°12'28.32"E	Worker's Welfare School, People's Colony	463.5	Same	Unload empty container and lift also empty container
H9-30,31	1:39	1:49	32° 8'35.76"N 74°11'33.53"E	Workshop	465.5	Same	Tank filling (51 litre)
H9-32,33	1:56	2:00	32° 8'38.28"N 74°11'11.91"E	Shell Petrol Pump	466.8	Same	Parking and vehicle inspection

Sheet # H10							
Date		22 December, 2014		Plate no. of Vehicle		Hino-11	
Name of Surveyor		Hina Ishaque		Type of Collection Vehicle		Arm Roll Truck	
Name of Employee		Aamir Javaid		Name of Data Recorder		Hina Ishaque	
Collection Area/ UC No.		People's Colony, Bihari Colony/26, 27		Nominal Vehicle Capacity		5m <sup>3</sup>	
No. of Collection Crew		No One		Weather		Clouds	
Point No.	Arrival Time	Departure Time	Coordinates	Description of Point (Address,road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight. Loading, unloading, traffic condition etc.)
					At Arrival	At Departure	
H10-1,2	7:53	8:03	32° 8'37.82"N 74°11'11.75"E	Workshop	16489	Same	Engine start up and inspection of vehicle.
H10-3,4	8:05	8:10	32° 8'49.90"N 74°11'23.19"E	Sheikhupura Road	16489.2	Same	Tyre check
H10-5,6	8:16	8:21	32° 8'36.29"N 74°11'32.94"E	Shell Petrol Pump	16490	Same	Tank filling (2 litre)
H10-7,8	8:30	8:31	32° 8'6.27"N 74°12'35.04"E	Madni Ground	16494	Same	1st lifting of container. Traffic flow is slow due to fog.
H10-9,10	8:33	8:39	32° 8'23.84"N 74°12'28.44"E	Worker's Welfare School, People's Colony	16495	Same	
H10-11,12	8:41	8:48	32° 9'38.90"N 74°13'11.49"E	Sialkot Bypass Road	16498.3	Same	Tea Break
H10-13,14	9:12	9:16	32°12'24.07"N 74° 7'57.67"E	Gondlanwala Dumping Site	16514.1	Same	1st unloading. Weight of waste is 1800kg
H10-15,16	9:45	9:51	32° 8'47.44"N 74°12'53.68"E	20.Number Point, People's colony	16534.7	Same	2nd lifting of container. Traffic is slow at Bypass Road due to fog.
H9-17,18	10:17	10:21	32°12'24.37"N 74° 7'58.47"E	Gondlanwala Dumping Site	16552.8	Same	2nd unloading of container. Traffic flow is smooth. Weight of waste is 3300 kg
H10-19,20	10:46	10:57	32° 8'55.12"N 74°12'47.58"E	Faqir Pura Chowk	16572	Same	3rd lifting of container, Traffic condition is good.
H10-21,22	11:27	11:33	32°12'23.72"N 74° 7'57.99"E	Gondlanwala Dumping Site	16589.9	Same	3rd unloading of container, Weight of waste is 3140 kg. Traffic blocked at Pindi bypass road.
H10-23,24	12:07	12:15	32° 8'2.88"N 74°12'21.06"E	Khawaja Tariq Ground, People's Colony	16612	Same	4th lifting of container
H10-25,26	12:50	12:57	32°12'23.60"N 74° 7'57.78"E	Gondlanwala Dumping Site	16631	Same	4th Unloading, weight of waste is 2900 kg
H10-27,28	1:27	1:33	32° 7'39.48"N 74°12'27.40"E	Bihari Colony	16653	Same	5th lifting of container
H10-29,30	2:12	2:18	32°12'24.09"N 74° 7'58.23"E	Gondlanwala Dumping Site	16673	Same	5th Unloading, weight of waste is 3240 kg
H10-31,32	2:46	2:58	32° 8'35.89"N 74°11'33.97"E	Shell Petrol Pump	16685	Same	Tank filling (54 litre)
H10-33,34	3:05	3:09	32° 8'38.19"N 74°11'11.14"E	Workshop	16686.8	Same	Parking and vehicle inspection

Sheet # F1							
Date		9/12/2014		Plate no. of Vehicle		GAJ-60	
Name of Surveyor		Fatima Zia		Type of Collection Vehicle		Mini Dumper	
Name of Employee		Bashir Masih		Name of Data Recorder		Fatima Zia	
Collection Area/ UC No.		Fareed Town/UC-19		Nominal Vehicle Capacity		1 m <sup>3</sup>	
No. of Collection Crew		1 Loader & 1 Driver		Weather		Sunny	
Point No.	Arrival Time	Departure Time	Coordinates	Description of Point (Address, road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight. Loading, Unloading, Traffic Condition etc.)
					At Arrival	At Departure	
1	5:50 AM	6:18 AM	32° 8'37.90"N 74°11'11.78"E	GWMC Workshop, Sheikhpura Road	12394	12394	Waiting for the other driver whose vehicle was parked at back.
2	6:22 AM	6:30 AM	32° 8'36.11"N 74°11'34.37"E	Shell Filling Station, GT Road	12396	12396	15 Liters filled
3	6:40 AM	7:01 AM	32° 9'36.8"N 74°13'6.35"E	Ch. Zahid Pervaiz Wala Gla	12401	12401	13 minutes wait for the collection crew. 2 loaders were attached from the UC staff. 22 points were collected
4	7:03 AM	7:11 AM	32° 9'34.44"N 74°13'1.32"E	Church Street to Pasroor Road	12401	12402	23 points were collected
5	7:17 AM	7:20 AM	32°10'0.66"N 74°12'46.54"E	Sabri Chowk (TS)	12404	12404	Mini dumper was not 100% filled. 1 <sup>st</sup> Trip completed.
6	7:27 AM	7:33 AM	32°09'32.4" N 74°13'07.4" E	Ch. Zahid Pervaiz Wala Gla	12407	12407	Collection crew was changed, 1 loader collected 5 points. Traffic Problem was seen due to School Timings.
7	7:34 AM	8:05 AM	32°09'29.2" N 74°13'09.0" E	Baba Shah Deen wala Gla and Bakery Bazar	12407	12408	52 points were collected and Traffic Problem was seen due to School Timings.
8	8:06 AM	8:19 AM	32°09'15.1" N 74°13'08.0" E	Street # 6, Arayan Wali	12408	12409	32 points were collected, unpaved street caused hurdles in the movement of mini dumper.
9	8:30 AM	8:34 AM	32°10'0.72"N 74°12'46.47"E	Sabri Chowk (TS)	12411.8	12411.8	2 <sup>nd</sup> Trip completed.
10	8:41 AM	8:45 AM	32° 9'38.06"N 74°12'53.35"E	Govt. Girls Elementary School, Pasroor Road	12414.8	12414.8	2 drums of capacity 200kg were unloaded in mini dumper. Waste from school is collected after 1 day.
11	8:46 AM	8:55 AM	32° 9'36.80"N 74°12'52.25"E	Gla Masoom Shah (Main Bazar)	12414.8	12415	8 points were collected from one side, other side is included in UC-17
12	8:56 AM	9:07 AM	32° 9'32.42"N 74°12'51.38"E	Street # 50, Muhallah Usman Park, Fareed Town.	12415	12415	13 points were collected from households and street sweeping.
13	9:08 AM	9:58 AM	32° 9'31.36"N 74°12'51.19"E	Gla Masoom Shah (Main Bazar)	12415	12416	78 points were collected, traffic congestion.
14	10:10 AM	10:14 AM	32°10'00.7" N 74°12'46.6" E	Sabri Chowk (TS)	12419	12419.6	3 <sup>rd</sup> Trip completed
15	10:26 AM	10:43 AM	32° 9'11.31"N 74°12'53.37"E	Gla Masoom Shah (Main Bazar) Near Graveyard	12423	12423	20 points were collected
16	10:46 AM	10:53 AM	32° 9'6.38"N 74°12'56.49"E	Street # 17, Kot Habib ullah, Ali Park	12423	12423	22 points were collected
17	10:54 AM	11:10 AM	32° 9'7.52"N 74°12'57.12"E	Street # 27, Kot Habib ullah, Ali Park	12423	12424	40 points were collected
18	11:14 AM	11:34 AM	32° 9'8.24"N 74°12'53.45"E	Street # 26, Kot Habib ullah, Ali Park	12424	12424	37 points were collected
19	11:36 AM	11:57 AM	32° 9'9.32"N 74°12'59.45"E	Street # 25, Kot Habib ullah, Ali Park	12424	12424	35 points were collected
20	12:06 PM	12:10 PM	32°10'0.75"N 74°12'46.63"E	Sabri Chowk (TS)	12428	12428	4 <sup>th</sup> Trip completed
21	12:17 PM	12:47 PM	32° 9'10.35"N 74°13'0.64"E	Street # 20, Kot Habib ullah, Ali Park	12431	12432	32 points were collected
22	12:49 PM	1:04 PM	32° 9'11.28"N 74°12'53.80"E	Street # 19, Kot Habib ullah, Ali Park	12432	12432	21 points were collected
23	1:05 PM	1:45 PM	32° 9'13.23"N 74°13'0.93"E	Main Khalid Street, Church Bazar	12432	12432	62 points were collected
24	1:52 PM	2:02 PM	32°10'0.84"N 74°12'46.50"E	Sabri Chowk (TS)	12435	12435	5 <sup>th</sup> Trip completed
25	2:53 PM	3:08 PM	32° 9'26.83"N 74°13'14.54"E	Meeran G wala Daira at Bypass Near Chichur wali Canal	12443	12444	Collection from a big heap
26	3:14 PM	3:17 PM	32°10'0.18"N 74°12'46.75"E	Sabri Chowk (TS)	12446	12446	6 <sup>th</sup> Trip completed
27	3:24 PM	3:44 PM	32° 9'26.83"N 74°13'14.52"E	Meeran G wala Daira at Bypass Near Chichur wali Canal	12449	12449	3 loaders collect the waste.
28	3:51 PM	3:54 PM	32°10'0.28"N 74°12'46.78"E	Sabri Chowk (TS)	12452	12452	7 <sup>th</sup> Trip completed
29	4:03 PM	4:25 PM	32° 9'30.68"N 74°13'0.84"E	Main Khalid Street, Church Bazar	12452	12452	Waste from 1 Hand Cart and 2 heaps were collected.
30	4:35 PM	4:39 PM	32°10'0.45"N 74°12'46.66"E	Sabri Chowk (TS)	12458	12458	8 <sup>th</sup> Trip completed
31	4:53 PM	4:59 PM	32° 8'35.82"N 74°11'34.45"E	Shell Filling Station, GT Road	12462	12462	9 Liters were filled.
32	5:04 PM	5:10 PM	32° 8'37.91"N 74°11'12.72"E	GWMC Workshop, Sheikhpura Road	12464	Same	Vehicle Parking

Sheet # F2								
Date	10/12/2014		Plate no. of Vehicle		GAJ-60			
Name of Surveyor	Fatima Zia		Type of Collection Vehicle		Mini Dumper			
Name of Employee	Bashir Masih		Name of Data Recorder		Fatima Zia			
Collection Area/ UC No.	Fareed Town/UC-19		Nominal Vehicle Capacity		1 m <sup>3</sup>			
No. of Collection Crew	1 Loader & 1 Driver		Weather		Sunny			
Point No.	Arrival Time	Departure Time	Coordinates		Description of Point (Address, road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight. Loading, Unloading, Traffic Condition etc.)
						At Arrival	At Departure	
1	5:50 AM	6:16 AM	32° 8'37.90"N	74° 11'11.78"E	GWMC Workshop, Sheikhpura Road	12485	12485	There was another mini dumper parked at back, that's why driver wait.
2	6:21 AM	6:29 AM	32° 8'36.11"N	74° 11'34.37"E	Shell Filling Station, GT Road	12487	12487	3.5 Liter filled.
3	6:41 AM	7:02 AM	32° 9'37.93"N	74° 12'57.66"E	Pasroor Road in front of Church to Zahid Pervaiz wala Gla	12492	12492	1 Sanitary worker with hand cart loaded the waste 17 points collected.
4	7:03 AM	7:27 AM	32° 9'34.80"N	74° 13'6.48"E	Ch. Zahid Pervaiz wala Gla	12492	12492	20 points collected. 5mins Tea Break
5	7:35 AM	7:39 AM	32° 10'0.66"N	74° 12'46.67"E	Sabri Chowk (Temporary Transfer Station)	12495	12495	1 <sup>st</sup> Trip completed.
6	7:47 AM	7:54 AM	32° 9'32.76"N 74° 13'6.47"E	32° 9'30.86"N 74° 13'9.20"E	Ch. Zahid Pervaiz wala Gla	12497	12498	Traffic Problem due to School Timing. 7-8 ft wide street with mostly turns/bends. 12 points collected.
7	7:55 AM	8:38 AM	32° 9'29.94"N 74° 13'9.19"E	32° 9'16.08"N 74° 13'8.72"E	Baba Shah Deen wala Gla and Bakery Bazar	12498	12498	Traffic Problem due to School Timing. 68 points collected.
8	8:39 AM	9:01 AM	32° 9'15.13"N 74° 13'8.21"E	32° 9'15.15"N 74° 13'0.89"E	Street # 6, Arayan wali	12498	12498	39 points were collected, unpaved street caused hurdles in the movement of mini dumper.
9	9:14 AM	9:20 AM	32° 10'0.15"N 74° 12'46.93"E	32° 10'0.11"N 74° 12'46.90"E	Sabri Chowk (Temporary Transfer Station)	12502	12502	2 <sup>nd</sup> Trip completed. Drive at a speed of 15-17KM/H to avoid the scattering of waste at road.
10	9:28 AM	10:16 AM	32° 9'34.39"N 74° 13'1.19"E	32° 9'30.47"N 74° 13'1.00"E	Hafeez Saran wali Gali link Main Khalid Street	12505	12505	30 points collected.
11	10:25 AM	10:30 AM	32° 10'0.67"N 74° 12'46.58"E	32° 10'0.80"N 74° 12'46.47"E	Sabri Chowk (Temporary Transfer Station)	12508	12508	3 <sup>rd</sup> Trip completed
12	10:55 AM	11:45 AM	32° 9'30.29"N 74° 13'0.98"E	32° 9'10.34"N 74° 13'0.92"E	Main Khalid Street, Church Bazar	12511	12512	70 points collected. Problem in traffic and also to public due to the movement of mini dumper.
13	11:53 AM	11:57 AM	32° 10'0.49"N 74° 12'46.75"E	32° 10'0.31"N 74° 12'46.74"E	Sabri Chowk (Temporary Transfer Station)	12515	12515	4 <sup>th</sup> Trip completed
14	12:07 AM	12:18 AM	32° 9'9.44"N	74° 12'58.94"E	Street # 23, Ali Park	12518	12519	10 points collected
15	12:21 AM	12:57 AM	32° 09'17.36"N 74° 12'53.62"E	32° 9'17.29"N 74° 13'0.23"E	Street # 11, Ali Park	12519	12519	33 points collected
16	1:02 PM	1:17 PM	32° 9'28.86"N 74° 13'0.60"E	32° 9'28.16"N 74° 12'54.14"E	Rana Ghaffar wali Gali	12519	12520	2 loaders collected 29 points.
17	1:27 PM	1:29 PM	32° 10'0.75"N	74° 12'46.67"E	Sabri Chowk (Temporary Transfer Station)	12523	12523	5 <sup>th</sup> Trip completed. Lunch break of 23 mins and then went to next point.
18	1:59 PM	2:18 PM	32° 9'27.78"N 74° 12'52.60"E	32° 9'30.65"N 74° 12'51.56"E	Gla Masoom Shah (Main Bazar)	12527	12527	2 loaders collected 3 points. Heavy Traffic in bazar.
19	2:29 PM	2:32 PM	32° 10'0.72"N 74° 12'46.67"E	32° 10'0.76"N 74° 12'46.59"E	Sabri Chowk (Temporary Transfer Station)	12530	12530	6 <sup>th</sup> Trip completed
20	2:44 PM	2:50 PM	32° 8'36.46"N	74° 11'34.35"E	Shell Filling Station, GT Road	12535	12535	6.86 Liters filled.
21	2:53 PM	2:56 PM	32° 8'38.42"N	74° 11'12.60"E	GWMC Workshop, Sheikhpura Road	12537	Same	Vehicle Parking

Sheet # F3								
Date	11/12/2014			Plate no. of Vehicle	GAJ-60			
Name of Surveyor	Fatima Zia			Type of Collection Vehicle	Mini Dumper			
Name of Employee	Bashir Masih			Name of Data Recorder	Fatima Zia			
Collection Area/ UC No.	Fareed Town/UC-19			Nominal Vehicle Capacity	1 m <sup>3</sup>			
No. of Collection Crew	1 Loader & 1 Driver			Weather	Sunny			
Point No.	Arrival Time	Departure Time	Coordinates	Description of Point (Address, road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight, Loading, Unloading, Traffic Condition etc.)	
					At Arrival	At Departure		
1	6:00 AM	6:50 AM	32° 8'38.32"N 74°11'10.55"E	GWMC Workshop, Sheikhpura Road	12560.3	12560.4	Vehicle Inspection and Clean-Up.	
2	6:53 AM	6:54 AM	32° 8'36.18"N 74°11'34.37"E	Rachna Filling Station, GT Road	12562.1	12562.1	1.30 Liters filled	
3	7:02 AM	7:46 AM	32° 9'36.50"N 74°13'6.33"E	32° 9'37.21"N 74°13'5.64"E	Ch. Zahid Pervaiz wala Gla	12567	12568.2	66 points collected. Traffic problem due to school timing.
4	7:49 AM	7:52 AM	32° 9'38.05"N 74°12'53.06"E	Govt. Girls Elementary School, Pasroor Road	12568.9	12568.9	2 drums of capacity 200kg were unloaded in mini dumper. Waste from school is collected after 1 day.	
5	7:54 AM	8:05 AM	32° 9'36.41"N 74°12'52.08"E	32° 9'34.00"N 74°12'51.15"E	Gla Masoom Shah (Main Bazar)	12568.9	12569	10 points collected. Traffic problem due to school timing.
6	8:15 AM	8:23 AM	32°10'0.77"N 74°12'46.47"E	Sabri Chowk (TS)	12572.1	12572.1	Mud clusters in mini dumper was removed. 1st Trip completed.	
7	8:31 AM	8:50 AM	32° 9'33.72"N 74°12'51.31"E	Gla Masoom Shah (Main Bazar)	12575.2	12575.4	28 points from adjacent street # 50 and total 70 points from bazar were collected from 8:31 AM to 9:46 AM.	
7	8:54 AM	9:00 AM	32° 9'32.45"N 74°12'51.37"E	Gla Masoom Shah (Main Bazar)	12575.4	12575.4	1 bigger heap	
7	9:06 AM	9:10 AM	32° 9'29.09"N 74°12'51.99"E	Gla Masoom Shah (Main Bazar)	12575.5	12575.5	1 bigger heap	
7	9:22 AM	9:26 AM	32° 9'21.30"N 74°12'53.98"E	Gla Masoom Shah (Main Bazar)	12575.7	12575.7	1 bigger heap	
7	9:41 AM	9:46 AM	32° 9'15.53"N 74°12'53.32"E	Gla Masoom Shah (Main Bazar)	12575.9	12575.9	1 bigger heap	
8	10:00 AM	10:05 AM	32°10'00.40"N 74°12'46.82"E	Sabri Chowk (TS)	12579.5	12579.5	2nd Trip completed	
9	10:14 AM	10:36 AM	32° 9'9.91"N 74°12'53.12"E	Gla Masoom Shah (Main Bazar)	12583.2	12583.3	23 points collected. Heavy Traffic in bazar.	
10	10:37 AM	10:41 AM	32° 9'5.52"N 74°12'53.56"E	32° 9'5.04"N 74°12'56.87"E		12583.3	12583.3	12 points collected.
11	10:44 AM	10:58 AM	32° 9'6.72"N 74°12'57.18"E	32° 9'6.38"N 74°12'53.56"E	Street # 17, Kot Habib ullah, Ali Park	12583.5	12583.7	19 points collected.
12	11:00 AM	11:20 AM	32° 9'7.47"N 74°12'56.22"E	32° 9'8.39"N 74°12'59.73"E	Street # 27, Kot Habib ullah, Ali Park	12583.7	12583.9	28 points collected.
13	11:21 AM	11:44 AM	32° 9'8.46"N 74°12'53.60"E	Street # 26, Kot Habib ullah, Ali Park	12583.9	12584.1	33 points collected. Mini dumper jam at the end of street due to bad infrastructure/unpavement.	
14	12:09 PM	12:14 PM	32°10'0.77"N 74°12'46.66"E	Sabri Chowk (TS)	12587.9	12587.9	3 <sup>rd</sup> Trip completed	
15	12:23 PM	12:41 PM	32°09'36.5"N 74°13'06.3"E	Ch. Zahid Pervaiz wala Gla	12591.3	12591.3	Waiting for the loader, he was doing lunch.	
16	12:43 PM	1:02 PM	32° 9'9.57"N 74°12'59.52"E	32° 9'10.00"N 74°12'55.54"E	Street # 23, Ali Park	12591.4	12591.6	35 points collected.
17	1:03 PM	1:22 PM	32° 9'10.52"N 74°12'53.54"E	Street # 21, Ali Park	12591.6	12591.8	37 points collected.	
18	1:23 PM	1:44 PM	32° 9'11.25"N 74°13'0.72"E	32° 9'11.29"N 74°12'54.62"E	Street # 19, Ali Park	12591.8	12592.1	30 points collected, Traffic problem due to school-off timing.
19	1:45 PM	2:02 PM	32° 9'12.26"N 74°12'53.50"E	32° 9'12.43"N 74°12'57.57"E	Street # 17, Ali Park	12592.1	12592.2	13 points collected.
20	2:11 PM	2:17 PM	32°10'0.84"N 74°12'46.68"E	Sabri Chowk (TS)	12595.7	12595.7	4 <sup>th</sup> Trip completed	
21	2:27 PM	2:57 PM	32° 9'17.23"N 74°13'0.64"E	32° 9'17.51"N 74°12'53.88"E	Street # 11, Ali Park	12599.4	12599.6	38 points collected.
22	3:00 PM	3:12 PM	32° 9'20.48"N 74°12'54.59"E	32° 9'20.40"N 74°12'57.81"E	Street # 5, Ali Park	12599.6	12599.8	25 points collected.
23	3:19 PM	3:31 PM	32° 9'26.92"N 74°13'14.74"E	32° 9'27.29"N 74°13'15.00"E	Meeran G wala Daira at Bypass Near Chichur wali Canal	12600.9	12601	2 loaders lift the waste
24	3:36 PM	3:42 PM	32°10'0.51"N 74°12'46.86"E	Sabri Chowk (TS)	12603.5	12603.5	5 <sup>th</sup> Trip completed, directly unloaded in container.	
25	3:53 PM	3:57 PM	32° 8'36.39"N 74°11'34.36"E	Rachna Filling Station, GT Road	12608.1	12608.1	8.24 liters filled.	
26	4:03 PM	4:07 PM	32° 8'38.80"N 74°11'11.41"E	GWMC Workshop, Sheikhpura Road	12609.7	Same	Vehicle Parking	

Sheet # F4									
Date		12/12/2014			Plate no. of Vehicle		GAJ-60		
Name of Surveyor		Fatima Zia			Type of Collection Vehicle		Mini Dumper		
Name of Employee		Bashir Masih			Name of Data Recorder		Fatima Zia		
Collection Area/ UC No.		Fareed Town/UC-19			Nominal Vehicle Capacity		1 m <sup>3</sup>		
No. of Collection Crew		1 Loader & 1 Driver			Weather		Sunny		
Point No.	Arrival Time	Departure Time	Coordinates		Description of Point (Address, road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight, Loading, Unloading, Traffic Condition etc.)	
						At Arrival	At Departure		
1	6:00 AM	6:46 AM	32° 8'38.30"N	74° 11'12.79"E	GWMC Workshop, Sheikhpura Road	12631	12631	Vehicle Inspection and Clean-Up.	
2	6:49 AM	6:51 AM	32° 8'36.15"N	74° 11'34.23"E	Shell Filling Station, GT Road	12632.6	12632.6	1.50 Liters filled	
3	6:59 AM	7:02 AM	32° 9'36.87"N	74° 13'6.34"E	Ch. Zahid Pervaiz wala Gla	12637.5	12637.5	Loader didn't lift the waste from this place and said to start from main road.	
4	7:02 AM	7:38 AM	32° 9'37.20"N 74° 13'6.12"E	32° 9'37.42"N 74° 12'57.62"E	Pasroor Road to Church Chowk	12637.5	12637.8	32 points collected then driver and loader take a tea break of 10 mins.	
4	7:38 AM	7:55 AM	32° 9'37.42"N 74° 12'57.62"E	32° 9'33.12"N 74° 13'5.58"E	Church Street	12637.8	12638.2	17 points collected	
5	8:09 AM	8:24 AM	32° 09'33.07"N	74° 13'06.00"E	Ch. Zahid Pervaiz wala Gla	12638.3	12638.6	12 points collected. Traffic problem due to school timing, street is only 5 ft wide.	
6	8:36 AM	8:42 AM	32° 10'00.36"N	74° 12'46.73"E	Sabri Chowk (Temporary Transfer Station)	12640.9	12640.9	1st Trip completed. Loader also cleaned the wheels.	
7	8:50 AM	9:49 AM	32° 9'28.65"N 74° 13'8.79"E	32° 9'15.54"N 74° 13'8.68"E	Baba Shah Deen wala Gla and Bakery Bazar	12643.7	12644.2	80 points collected, people ask the loader to clean their drains.	
8	9:50 AM	9:59 AM	32° 09'15.24"N	74° 13'08.36"E	Street # 6, Arayan Wali	12644.2	12644.2	There was construction material in street that's why mini dumper collected 15 points.	
9	10:08 AM	10:13 AM	32° 10'0.42"N	74° 12'46.81"E	Sabri Chowk (Temporary Transfer Station)	12647.2	12647.3	2nd Trip completed	
10	10:21 AM	11:27 AM	32° 9'33.93"N 74° 13'1.48"E	32° 9'29.78"N 74° 13'0.99"E	Main Khalid Street, Church Bazar	12650.1	12650.6	72 points collected.	
11	11:38 AM	11:42 AM	32° 10'0.24"N	74° 12'46.94"E	Sabri Chowk (Temporary Transfer Station)	12654.3	12654.3	3 <sup>rd</sup> Trip completed	
12	12:00 PM	12:05 PM	32° 9'12.15"N	74° 13'1.03"E	Baby Sholy Wali gali link Main Khalid Street	12657.7	12657.7	7 points collected, Traffic problem in main street.	
13	12:06 PM	12:17 PM	32° 9'13.33"N 74° 13'0.87"E	32° 9'18.69"N 74° 13'1.09"E	Main Khalid Street, Church Bazar	12657.7	12658	21 points collected.	
14	12:24 PM	12:49 PM	32° 9'17.24"N 74° 13'0.62"E	32° 9'17.34"N 74° 12'53.83"E	Street # 11, Kot Habib ullah, Ali Park	12658	12658.2	22 points collected.	
15	12:50 PM	12:53 PM	32° 9'18.87"N	74° 12'54.43"E	Gla Masoom Shah (Main Bazar)	12658.2	12658.2	5 points collected.	
16	12:54 PM	1:05 PM	32° 9'20.18"N	74° 12'54.78"E	Street # 5, Ali Park	12658.2	12658.3	30 points collected.	
17	1:05 PM	1:40 PM	32° 9'20.32"N 74° 12'54.32"E	32° 9'37.47"N 74° 12'52.19"E	Gla Masoom Shah (Main Bazar)	12658.3	12658.9	43 points collected.	
18	1:48 PM	1:51 PM	32° 10'0.75"N	74° 12'46.65"E	Sabri Chowk (Temporary Transfer Station)	12661.7	12661.8	4 <sup>th</sup> Trip completed	
19	2:00 PM	2:41 PM	32° 09'27.75"N 74° 12'52.90"E	32° 9'28.63"N 74° 12'56.95"E	Ch. Abdul-Rehman wala Gala	12665	12665.6	48 points collected.	
20	2:51 PM	3:00 PM	32° 10'0.26"N	74° 12'46.77"E	Sabri Chowk (Temporary Transfer Station)	12668.3	12668.4	5 <sup>th</sup> Trip completed. Vehicle Check-up.	
21	3:10 PM	3:17 PM	32° 8'36.40"N	74° 11'34.30"E	Shell Filling Station, GT Road	12672.9	12673	8.15 liters filled	
22	3:21 PM	3:26 PM	32° 8'38.40"N	74° 11'13.29"E	GWMC Workshop, Sheikhpura Road	12674.5	Same	Vehicle parking	

Sheet # F5								
Date	13/12/2014		Plate no. of Vehicle		GAJ-60			
Name of Surveyor	Fatima Zia		Type of Collection Vehicle		Mini Dumper			
Name of Employee	Bashir Masih		Name of Data Recorder		Fatima Zia			
Collection Area/ UC No.	Fareed Town/UC-19		Nominal Vehicle Capacity		1 m <sup>3</sup>			
No. of Collection Crew	1 Loader & 1 Driver		Weather		Foggy Winter			
Point No.	Arrival Time	Departure Time	Coordinates		Description of Point (Address, road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight, Loading, Unloading, Traffic Condition etc.)
						At Arrival	At Departure	
1	6:18 AM	6:29 AM	32°08'38.4"N	74°11'12.7"E	GWMC Workshop, Sheikhpura Road	12695.4	12696.1	Vehicle Inspection and Check-Up.
2	6:32 AM	6:34 AM	32°08'36.05"N	74°11'34.45"E	Shell Filling Station, GT Road	12697.3	12697.3	1.27 Liters filled
3	6:42 AM	7:18 AM	32° 9'37.99"N 74° 12'52.06"E	32° 9'37.27"N 74° 13'6.44"E	Pasroor Road Chowk Masoom Shah to Ch. Zahid Chowk	12702.1	12702.6	52 points collected. Traffic problem due to school timing.
4	7:19 AM	7:39 AM	32° 9'37.05"N 74° 13'6.44"E	32° 9'32.59"N 74° 13'5.94"E	Ch. Zahid Pervaiz wala Gla	12702.6	12702.7	25 points collected. Traffic problem due to school timing.
5	7:46 AM	7:52 AM	32°10'00.13"N	74°12'46.75"E	Sabri Chowk (Temporary Transfer Station)	12705.3	12705.3	1st Trip completed.
6	7:58 AM	8:15 AM	32°09'36.46"N	74°13'06.07"E	Ch. Zahid Pervaiz wala Gla	12707.9	12707.9	Tea Break
7	8:15 AM	8:46 AM	32° 9'36.57"N 74° 13'6.05"E	32° 9'36.62"N 74° 13'6.02"E	Ch. Zahid Pervaiz wala Gla	12707.9	12707.9	waiting for the loader, supervisor took him to other area.
8	8:51 AM	8:53 AM	32°09'38.14"N	74°12'53.45"E	Govt. Girls Elementary School, Pasroor Road	12708.3	12708.3	2 drums of capacity 200kg were unloaded in mini dumper. Waste from school is collected after 1 day.
9	8:56 AM	9:36 AM	32°09'32.56"N 74°13'07.09"E	32° 9'15.38"N 74° 13'8.68"E	Baba Shah Deen wala Gla and Bakery Bazar	12708.9	12709.5	69 points collected.
10	9:37 AM	10:03 AM	32°09'15.20"N 74°13'08.23"E	32° 9'15.40"N 74° 13'1.53"E	Street # 6, Arayan Wali	12709.5	12709.7	36 points collected.
11	10:13 AM	10:21 AM	32°10'00.82"N	74°12'46.53"E	Sabri Chowk (Temporary Transfer Station)	12713.2	12713.2	2nd Trip completed
12	10:27 AM	10:38 AM	32°09'36.19"N	74°13'06.06"E	Ch. Zahid Pervaiz wala Gla	12715.8	12715.8	waiting for the other loader, the earlier one take a half leave for chirstmis preparation.
13	10:39 AM	11:47 AM	32°09'37.26"N 74°12'57.75"E	32° 9'10.54"N 74° 13'1.02"E	Main Khalid Street, Church Bazar	12716.1	12717	119 points collected.
14	11:55 AM	12:04 PM	32°10'00.79"N	74°12'46.71"E	Sabri Chowk (Temporary Transfer Station)	12720.4	12720.4	3 <sup>rd</sup> Trip completed
15	12:11 PM	1:14 PM	32°09'36.72"N 74°13'06.38"E	32° 9'36.70"N 74° 13'6.49"E	Ch. Zahid Pervaiz wala Gla	12722.9	12722.9	Lunch Break
16	1:16 PM	2:03 PM	32°09'37.70"N 74°12'52.01"E	32° 9'27.87"N 74° 12'52.84"E	Gla Masoom Shah (Main Bazar)	12723.4	12723.8	38 points collected, Traffic problem due to school off timing.
17	2:14 PM	2:23 PM	32°10'00.29"N	74°12'46.88"E	Sabri Chowk (Temporary Transfer Station)	12727	12727.1	4 <sup>th</sup> Trip completed
18	2:38 PM	2:56 PM	32°09'27.78"N 74°13'14.85"E	32° 9'27.98"N 74° 13'15.09"E	Meeran G wala Daira at Bypass Near Chichur wali Canal	12732.6	12732.6	1 loader collect the waste.
19	3:02 PM	3:11 PM	32°10'00.40"N	74°12'46.89"E	Sabri Chowk (Temporary Transfer Station)	12735.2	12735.2	5th Trip completed
20	3:23 PM	3:25 PM	32°08'36.25"N	74°11'34.14"E	Shell Filling Station, GT Road	12739.7	12739.9	8 Liters filled.
21	3:29 PM	3:33 PM	32°08'37.79"N	74°11'12.26"E	GWMC Workshop, Sheikhpura Road	12741.3	Same	Vehicle Parking

Sheet # F6									
Date		15/12/2014		Plate no. of Vehicle		TT-9774			
Name of Surveyor		Fatima Zia		Type of Collection Vehicle		Tractor Trolley			
Name of Employee		Bashir Masih		Name of Data Recorder		Fatima Zia			
Collection Area/ UC No.		Mubarak Colony/UC-46, Miyan Sansi/UC-35		Nominal Vehicle Capacity		m <sup>3</sup>			
No. of Collection Crew		2 Loader & 1 Driver		Weather		Foggy Winter			
Point No.	Arrival Time	Departure Time	Coordinates		Description of Point (Address, road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight. Loading, Unloading, Traffic Condition etc.)	
						At Arrival	At Departure		
1	6:45 AM	7:00 AM	32°08'39.01"N	74°11'13.04"E	GWMC Workshop, Sheikhpura Road	12752.2	12752.2	Vehicle Inspection and Check-Up.	
2	7:07 AM	7:11 AM	32°08'36.11"N	74°11'33.67"E	Shell Filling Station, GT Road	12753.8	12753.8	38.71 Liters filled	
3	7:26 AM	8:28 AM	32°09'15.55"N 74°09'54.68"E	32° 9'7.40" N 74° 9'54.42"E	Tameer-e-Ikhlaq Road, Link Hafiz Abad Road	12757.8	12758.2	Waiting for the loader. At 7:36 AM, 1 loader started loading and the 2nd loader came at 7:50 AM. 55 points collected.	
4	8:37 AM	9:15 AM	32°08'59.60"N 74°09'56.87"E	32° 8'59.76" N 74° 9'41.91"E	Bushra Road	12759.2	12759.6	136 points collected. Traffic problem due to school timing.	
5	9:16 AM	10:09 AM	32°08'59.73"N 74°09'41.81"E	32° 9'16.86" N 74° 9'43.64"E	Ghory Shah Bazar	12759.6	12760.2	72 points collected.	
6	10:41 AM	10:48 AM	32°12'24.21"N	74°07'58.19"E	Gondlanwala Dumping Site	12769.2	12769.5	1st Trip completed. 2200 Kg was unloaded.	
7	11:38 AM	12:02 PM	32°08'14.11"E	74°10'41.49"N	Kacha Khiali Road near Ghoongat Marriage Hall (UC-35)	12783.9	12783.9	waiting for the loaders.	
8	12:02 PM	1:48 PM	32°08'14.01"N 74°10'41.64"E	32° 8'21.30" N 74° 74°10'43.64"E	Kacha Khiali Road near Ghoongat Marriage Hall	12783.9	12784.5	2 loaders collected the 6 points	
9	2:21 PM	2:46 PM	32°10'20.77"N	74°08'46.53"E	Bypass Road near Citizen Marriage Hall	12794	12794.1	Engine heat up and ring broke out. Other tractor trolley (7653) passing from there pick it to the dumping site with the help of Iron Chain.	
10	2:58 PM	3:05 PM	32°11'40.80"N	74°08'06.23"E	Ali pur road near Irfan Butt Resturant	12797.4	12797.4	Extend the length of chain to avoid any accident.	
11	3:22 PM	3:41 PM	32°12'23.81"N	74°07'57.66"E	Gondlanwala Dumping Site	12799.5	12800.1	2nd Trip completed, 1460 Kg was unloaded.	
12	4:26 PM	4:35 PM	32°08'36.05"N	74°11'33.10"E	Shell Filling Station, GT Road	12811	12811.1	14 liters filled	
13	4:45 PM	4:49 PM	32°08'38.94"N	74°11'11.12"E	GWMC Workshop, Sheikhpura Road	12812.6	Same	Mechanic checked the vehicle and informed that its Engine has been sealed, so it might take 1 week for repair work.	



Sheet # F7								
Date	16/12/2014		Plate no. of Vehicle		Holland No. 1			
Name of Surveyor	Fatima Zia		Type of Collection Vehicle		Tractor Trolley			
Name of Employee	Bashir Masih		Name of Data Recorder		Fatima Zia			
Collection Area/ UC No.	Mubarak Colony/UC-46, Miyan Sansi/UC-35		Nominal Vehicle Capacity		m <sup>3</sup>			
No. of Collection Crew	2 Loader & 1 Driver		Weather		Foggy Winter			
Point No.	Arrival Time	Departure Time	Coordinates		Description of Point (Address, road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight. Loading, Unloading, Traffic Condition etc.)
						At Arrival	At Departure	
1	6:35 AM	7:04 AM	32°08'38.32"N	74°11'12.94"E	GWMC Workshop, Sheikhpura Road	12831.6	12831.7	Manager Operations and AM Transport arranged alternative vehicle for TT-9774.
2	7:10 AM	7:20 AM	32° 8'35.70"N	74°11'33.26"E	Shell Filling Station, GT Road	12833.2	12833.3	11.00 liters filled
3	7:38 AM	7:39 AM	32° 9'16.75"N	74°10'3.20"E	MB Palace Hafiz Abad Road	12837.3	12837.3	Driver called the AM to get the information about collection points.
4	7:41 AM	7:46 AM	32° 9'16.94"N	74° 9'50.63"E	Hafiz Abad Road near Nauman Autos	12837.6	12837.6	waiting for the loaders.
5	7:47 AM	7:47 AM	32° 9'17.30"N	74° 9'50.28"E	Madni Flower House, Hafiz Abad Road	12837.6	12837.6	1 point collected
6	7:50 AM	8:14 AM	32° 9'15.69"N 74° 9'54.70"E	32° 9'9.32"N 74° 9'54.46"E	Tameer-e-Ikhlaq Road	12837.9	12838.1	28 points collected. Traffic problem due to school timing.
7	8:18 AM	9:16 AM	32° 9'17.47"N 74° 9'43.58"E	32°12'21.75"N 74° 7'55.13"E	Ghory Shah Bazar	12838.7	12839.4	118 points collected. Traffic problem due to Trolley.
8	9:16 AM	9:41 AM	32° 8'57.60"N 74° 9'42.21"E	32° 8'57.60"N 74° 9'45.40"E	Masjid Aijaz Wali Street	12839.4	12839.6	52 points collected. Narrow Street for trolley. Traffic block due to Trolley.
9	9:46 AM	10:20 AM	32° 8'59.73"N 74° 9'42.09"E	32° 8'59.62"N 74° 9'56.67"E	Bushra Road	12839.8	12840.2	70 points collected.
10	10:20 AM	10:24 AM	32° 8'59.56"N	74° 9'57.21"E	Khatri Chowk	12840.3	12840.3	14 points collected.
11	10:24 AM	10:29 AM	32° 8'57.51"N	74° 9'56.77"E	Gala Haroon Wala	12840.3	12840.3	8 points collected.
12	10:30 AM	10:57 AM	32° 8'57.22"N 74° 9'54.55"E	32° 8'51.79"N 74° 9'54.41"E	Masjid ALLAH Bakhsh Wali Gali	12840.3	12840.5	57 points collected.
13	10:57 AM	11:07 AM	32° 8'51.53"N 74° 9'53.99"E	32° 8'51.65"N 74° 9'52.03"E	Sunyaron Wali Gali	12840.5	12840.6	43 points collected combinely from adjacent 4 streets.
14	11:08 AM	11:46 AM	32° 8'51.92"N 74° 9'51.83"E	32° 8'59.19"N 74° 9'52.17"E	Street # 92	12840.6	12840.8	78 points collected. Traffic block due to Trolley.
15	11:47 AM	11:51 AM	32° 8'59.46"N	74° 9'52.10"E	Bushra Road	12840.8	12840.9	A truck was loading white flour, wait for the passage.
16	12:42 PM	12:48 PM	32°12'24.33"N	74°7'58.19"E	Gondlanwala Dumping Site	12851.1	12851.3	1st Trip completed. 2240 Kg was unloaded.
17	12:49 PM	12:53 PM	32°12'21.78"N	74°7'55.09"E	Gondlanwala Dumping Site	12851.4	12851.4	Asked about the next collection points from concerned AM
18	1:15 PM	1:18 PM	32°9'22.42"N	74°8'49.55"E	Hafiz Abad Road near Maaz Marriage Hall	12858.8	12858.8	Driver stopped to recharge his Mobile Number.
19	1:28 PM	1:45 PM	32° 9'21.43"N 74°10'2.56"E	32°9'20.15"N 74°10'2.59"E	Qadri Darbar (Temporary Transfer Station)	12861.1	12861.1	Bucket and Blade filled the waste in tractor trolley.
20	1:58 PM	2:07 PM	32° 9'25.35"N	74° 8'44.56"E	Alam Chowk	12863.6	12863.6	Lunch Break
21	2:34 PM	2:39 PM	32°12'24.51"N	74° 7'58.11"E	Gondlanwala Dumping Site	12870.8	12871	2nd Trip completed. 3440 Kg was unloaded with the help of Buket.
22	3:23 PM	3:28 PM	32° 8'36.12"N	74°11'33.13"E	Shell Filling Station, GT Road	12882.4	12882.4	11.00 liters filled
23	3:35 PM	3:38 PM	32° 8'38.59"N	74°11'12.82"E	GWMC Workshop, Sheikhpura Road	12884		Vehicle Parking

Sheet # F8									
Date		17/12/2014			Plate no. of Vehicle		Holland No. 1		
Name of Surveyor		Fatima Zia			Type of Collection Vehicle		Tractor Trolley		
Name of Employee		Bashir Masih			Name of Data Recorder		Fatima Zia		
Collection Area/ UC No.		Mubarak Colony/UC-46, Miyan Sansi/UC-35			Nominal Vehicle Capacity		m <sup>3</sup>		
No. of Collection Crew		2 Loader & 1 Driver			Weather		Foggy Winter		
Point No.	Arrival Time	Departure Time	Coordinates		Description of Point (Address, road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight. Loading, Unloading, Traffic Condition etc.)	
						At Arrival	At Departure		
1	7:10 AM	7:20 AM	32° 8'37.97"N 74° 11'12.76"E		GWMC Workshop, Sheikhpura Road	12898.2	12898.3	Vehicle Inspection and Check-Up.	
2	7:26 AM	7:31 AM	32° 8'35.78"N 74° 11'33.32"E		Shell Filling Station, GT Road	12899.8	12899.9	1 Liter filled	
3	7:47 AM	7:49 AM	32° 9'16.69"N 74° 9'53.75"E		Hafiz Abad Road near Hassan Cargo Service.	12904.1	12904.1	UC Inspector told the driver about collection points.	
4	7:50 AM	8:13 AM	32° 9'16.40"N 74° 9'54.99"E	32° 9'9.62"N 74° 9'54.36"E	Tameer-e-Ikhlaq Road	12904.1	12904.4	22 points collected. Traffic problem due to school timing.	
5	8:16 AM	8:55 AM	32° 9'17.58"N 74° 9'43.70"E	32° 8'57.29"N 74° 9'41.77"E	Ghory Shah Road	12904.8	12905.6	97 points collected.	
6	8:59 AM	9:42 AM	32° 8'59.56"N 74° 9'42.64"E	32° 8'59.52"N 74° 9'56.61"E	Bushra Road	12905.6	12906	31 points collected and also 2 handcarts were unloaded in trolley.	
7	10:30 AM	10:39 AM	32° 12'24.33"N 74° 7'58.21"E		Gondlanwala Dumping Site	12916.1	12916.3	1st Trip completed, 560 Kg was unloaded.	
8	11:18 AM	11:20 AM	32° 7'15.10"N 74° 10'9.69"E		Darogha Abadi, Khiali	12929	12929	Confirmed about the address of UC-35	
9	11:27 AM	11:37 AM	32° 8'15.70"N 74° 10'42.27"E		Kacha Khiali Road near Ghoongat Marriage Hall (UC-35)	12931.2	12931.2	Waiting for the loader and called to AM, AM visited and guided about the exact collection route.	
10	11:43 AM	12:02 PM	32° 8'14.27"N 74° 11'4.53"E		Sheikhpura Road, in front of Bismillah Metal Scrap dealer	12932.7	12932.8	Waiting for the loader.	
11	12:07 PM	12:44 PM	32° 8'23.29"N 74° 11'0.68"E	32° 8'21.44"N 74° 10'43.75"E	Miyan Sansi Bazar	12933.1	12933.6	31 points collected.	
12	12:46 PM	2:25 PM	32° 8'21.44"N 74° 10'43.75"E	32° 8'49.16"N 74° 10'51.03"E	Kacha Khiali Road	12933.6	12935.2	Waste collected was in less amount, driver contacted to AM and asked about further points. 23 points collected.	
13	2:52 PM	2:58 PM	32° 7'33.97"N 74° 9'35.14"E		Alam Chowk near Jamia Qasmiya	12940	12940	Problem in Clutch plate of tractor, speed was 5-6 Km/hr	
14	4:03 PM	4:14 PM	32° 12'24.52"N 74° 7'58.07"E		Gondlanwala Dumping Site	12952.7	12953	2nd Trip completed, 3420 kg was unloaded.	
15	5:01 PM	5:07 PM	32° 8'36.37"N 74° 11'33.42"E		Shell Filling Station, GT Road	12964.3	12964.4	16 liters filled, AM Transport was also there and driver informed him about the condition of tractor.	
16	5:12 PM	5:16 PM	32° 8'38.96"N 74° 11'11.91"E		GWMC Workshop, Sheikhpura Road	12965.9	Same	AM confirmed from the Mechanic and informed that this trolley will take a day or more to repair as Auto Market is closed for 2 days.	

Sheet # F9								
Date		23/12/2014		Plate no. of Vehicle		Holland No. 1		
Name of Surveyor		Fatima Zia		Type of Collection Vehicle		Tractor Trolley		
Name of Employee		Bashir Masih		Name of Data Recorder		Fatima Zia		
Collection Area/ UC No.		Mubarak Colony/UC-46, Miyan Sansi/UC-35		Nominal Vehicle Capacity		m <sup>3</sup>		
No. of Collection Crew		2 Loader & 1 Driver		Weather		Foggy Winter		
Point No.	Arrival Time	Departure Time	Coordinates		Description of Point (Address, road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight, Loading, Unloading, Traffic Condition etc.)
						At Arrival	At Departure	
1	7:00 AM	7:43 AM	32° 8'38.39"N 74° 11'12.80"E		GWMC Workshop, Sheikhupura Road	13005.5	13005.5	Engine Startup
2	7:50 AM	7:52 AM	32° 8'35.89"N 74° 11'33.73"E		Shell Filling Station, GT Road	13007.1	13007.1	28 Liters filled
3	8:08 AM	9:00 AM	32° 9'15.73"N 74° 9'54.52"E	32° 9'8.82"N 74° 9'54.39"E	Tameer-e-Ikhlq Road, Link Hafiz Abad Road	13011.4	13011.6	27 points collected. Traffic problem due to school timing. 2nd loader came at 8:38 AM
4	9:12 AM	9:52 AM	32° 8'59.46"N 74° 9'56.96"E	32° 8'59.62"N 74° 9'42.23"E	Bushra Road	13012.5	13012.9	78 points collected. 1 hand cart was also unloaded in trolley.
5	9:52 AM	10:33 AM	32° 8'59.72"N 74° 9'41.83"E	32° 9'17.41"N 74° 9'43.86"E	Ghory Shah Bazar	13012.9	13013.5	68 points collected.
6	11:07 AM	11:18 AM	32° 12'24.14"N	74° 7'57.61"E	Gondlanwala Dumping Site	13022.5	13022.9	1st Trip completed, 1120 kg was unloaded. There was problem in Jack during unloading the waste. A bucket helped out in unloading.
7	11:51 AM	12:24 PM	32° 9'22.58"N	74° 10'2.49"E	Qadri Darbar (Temporary Transfer Station)	13032.6	13032.7	Bucket filled the waste in tractor trolley.
8	1:03 PM	1:19 PM	32° 12'24.04"N	74° 7'57.77"E	Gondlanwala Dumping Site	13042.5	13042.9	2nd Trip completed. On the weigh bridge, a vehicle's engine was got off then some driver push the vehicle to start the engine. Jack of the trolley was not working, so waste was unloaded with the help of bucket. 3980 Kg was unloaded.
9	2:00 PM	2:04 PM	32° 8'35.99"N	74° 11'33.30"E	Shell Filling Station, GT Road	13054.1	13054.1	13 liters filled
10	2:11 PM	2:15 PM	32° 8'38.55"N	74° 11'12.89"E	GWMC Workshop, Sheikhupura Road	13055.7	Same	Vehicle Parking

Sheet # F10								
Date		24/12/2014		Plate no. of Vehicle		Holland No. 1		
Name of Surveyor		Fatima Zia		Type of Collection Vehicle		Tractor Trolley		
Name of Employee		Bashir Masih		Name of Data Recorder		Fatima Zia		
Collection Area/ UC No.		Mubarak Colony/UC-46, Miyan Sansi/UC-35		Nominal Vehicle Capacity		m <sup>3</sup>		
No. of Collection Crew		1 Loader & 1 Driver		Weather		Foggy Winter		
Point No.	Arrival Time	Departure Time	Coordinates		Description of Point (Address, road name, building name, etc)	Odometer (Km)		Remarks (Trip number, weight. Loading, Unloading, Traffic Condition etc.)
						At Arrival	At Departure	
1	6:20 AM	6:59 AM	32° 8'38.35"N	74° 11'12.29"E	GWMC Workshop, Sheikhpura Road	13094.7	13094.7	Engine startup
2	7:05 AM	7:08 AM	32° 8'35.77"N	74° 11'33.34"E	Shell Filling Station, GT Road	13096.3	13096.3	2 Liters filled
3	7:22 AM	7:54 AM	32° 9'16.71"N	74° 10'3.00"E	Hafiz Abad Road near P B Model School	13100.3	13100.3	Last day driver forget the collection equipments at dump site, But in the morning some drivers informed him that his equipments are at Qadri Darbar (transfer station very near to his collection area). He didn't find it at TS then driver went back to GWMC Workshop with a mini dumper to pick the equipments and trolley was parked here with engine on.
4	7:54 AM	7:59 AM	32° 9'16.49"N	74° 9'59.39"E	Hafiz Abad Road	13100.4	13100.4	Leakage of fuel was observed and informed the driver. He got the instrument from Auto Shop and repair it.
5	7:59 AM	8:11 AM	32° 9'15.72"N	74° 9'54.66"E	Tameer-e-Ikhlaq Road, Link Hafiz Abad Road	13100.6	13100.6	waiting for the loader.
6	8:11 AM	8:49 AM	32° 9'15.43"N 74° 9'54.78"E	32° 9'9.25"N 74° 9'54.39"E	Tameer-e-Ikhlaq Road, Link Hafiz Abad Road	13100.6	13100.8	33 points collected
7	9:01 AM	9:47 AM	32° 8'59.61"N 74° 9'56.92"E	32° 8'59.52"N 74° 9'42.32"E	Bushra Road	13101.8	13102.2	68 points collected
8	9:47 AM	9:57 AM	32° 8'59.06"N 74° 9'41.82"E	32° 8'57.64"N 74° 9'41.81"E	Ghory Shah Bazar	13102.2	13102.2	12 points collected
9	9:57 AM	10:20 AM	32° 8'57.58"N 74° 9'41.90"E	32° 8'57.48"N 74° 9'46.72"E	Masjid Aijaz Wali Street	13102.2	13102.4	66 points collected
10	10:22 AM	10:34 AM	32° 8'57.35"N	74° 9'46.92"E	Masjid Khalid Bin Walid wali Street	13102.4	13102.5	Street width is very short so find difficulty in turning the trolley. 4 points collected.
11	11:03 AM	11:13 AM	32° 9'21.84"N	74° 10'2.42"E	Qadri Darbar (Temporary Transfer Station)	13104.2	13104.3	Trolley was partially filled so driver came there to fill the trolley.
12	11:44 AM	12:02 PM	32° 12'24.16"N	74° 7'57.72"E	Gondlanwala Dumping Site	13114.3	13114.6	1st Trip completed, 2800 kg was unloaded. Problem in Jack during unloading.
13	12:37 PM	12:41 PM	32° 8'35.81"N	74° 11'33.29"E	Shell Filling Station, GT Road	13125.8	13125.9	15 liters filled

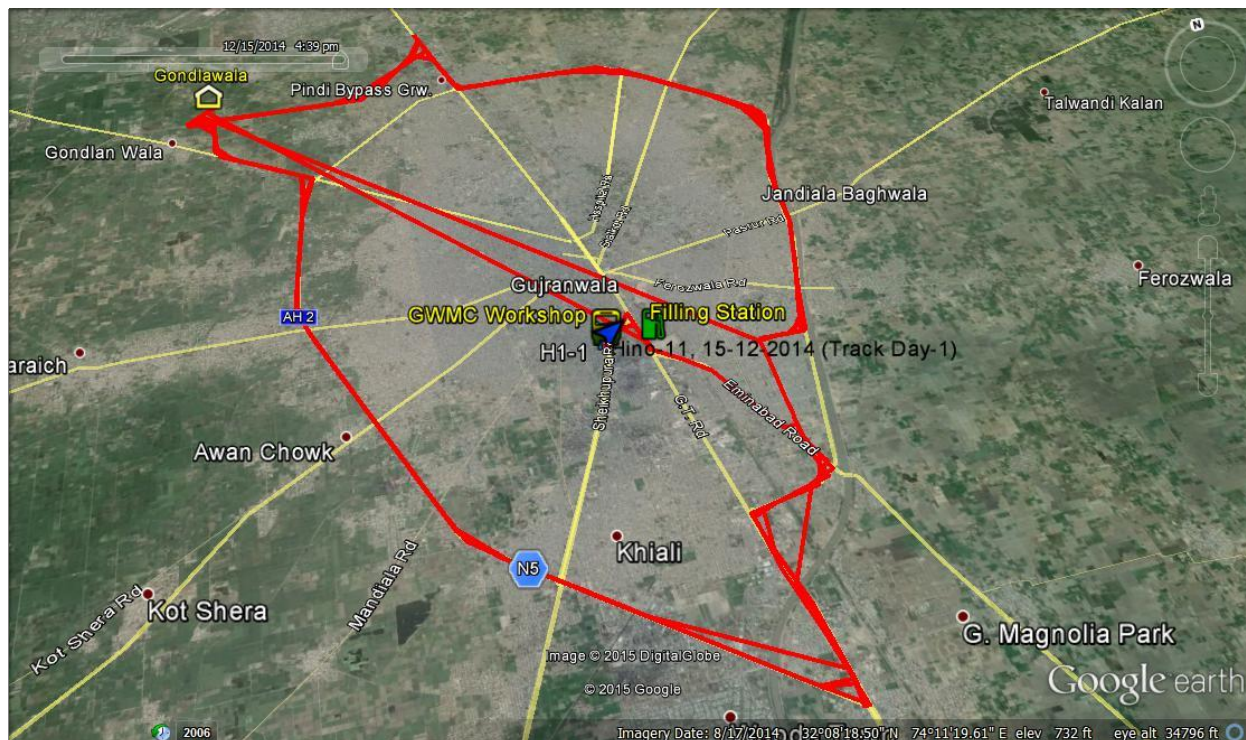


Figure 1: Hino-11, Track Day 1

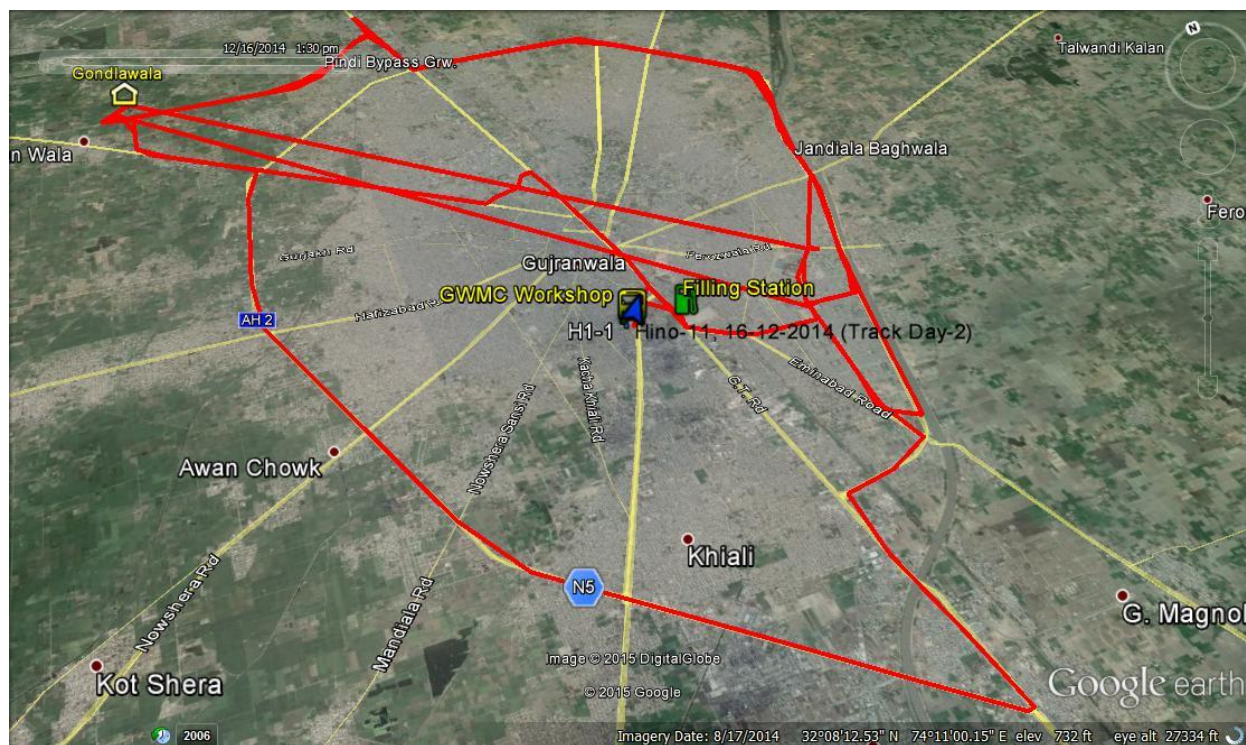


Figure 2: Hino-11, Track Day 2

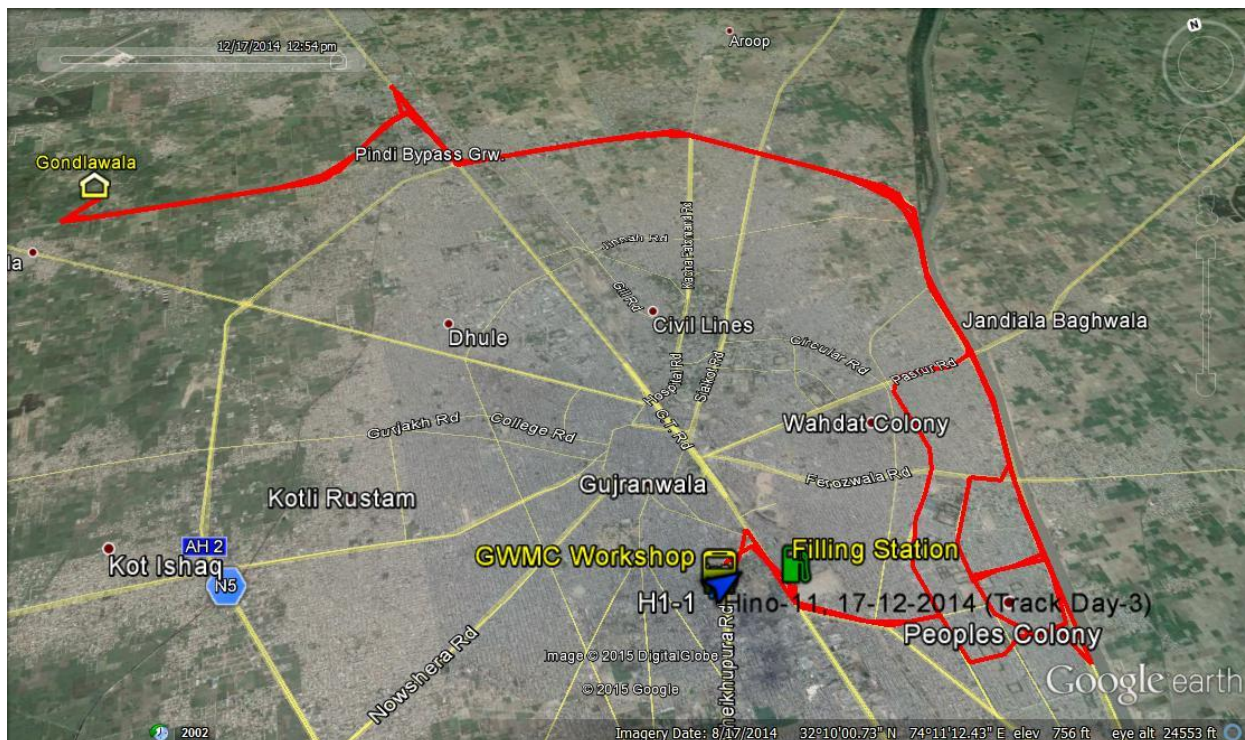


Figure 3: Hino-11, Track Day 3

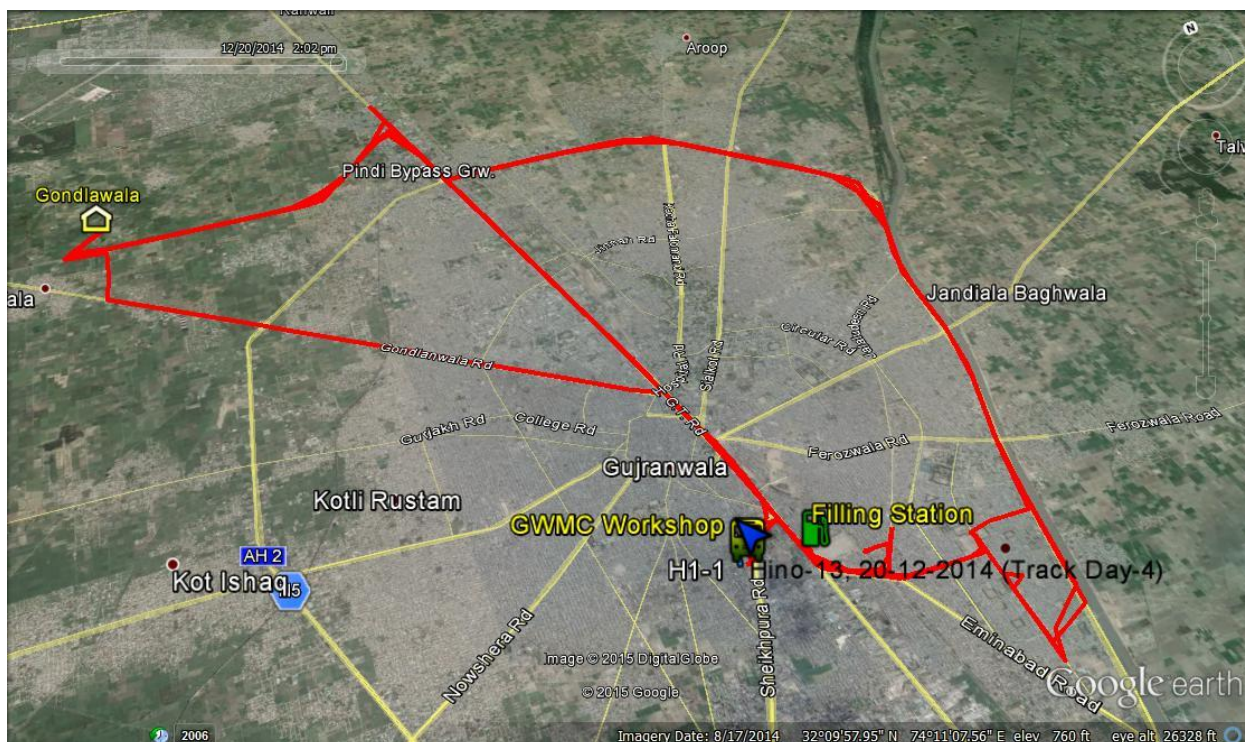


Figure 4: Hino-11 Track Day 4

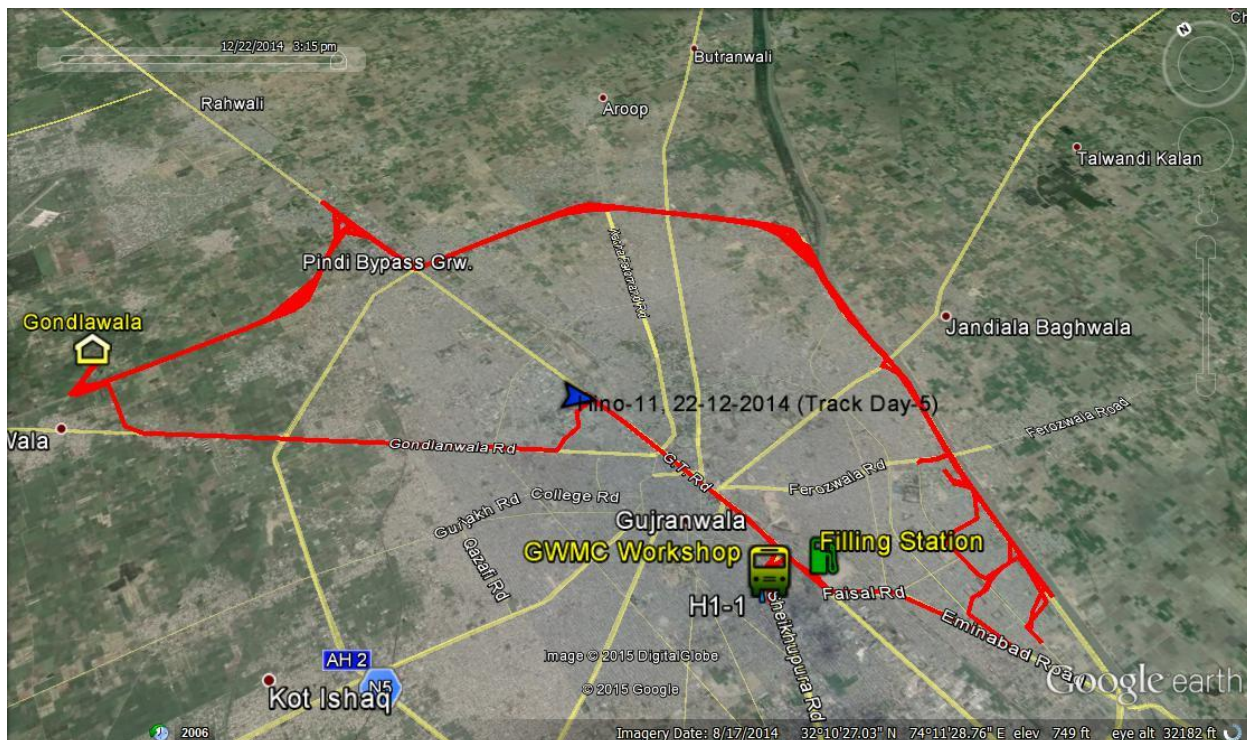


Figure 5: Hino-11, Track Day 5

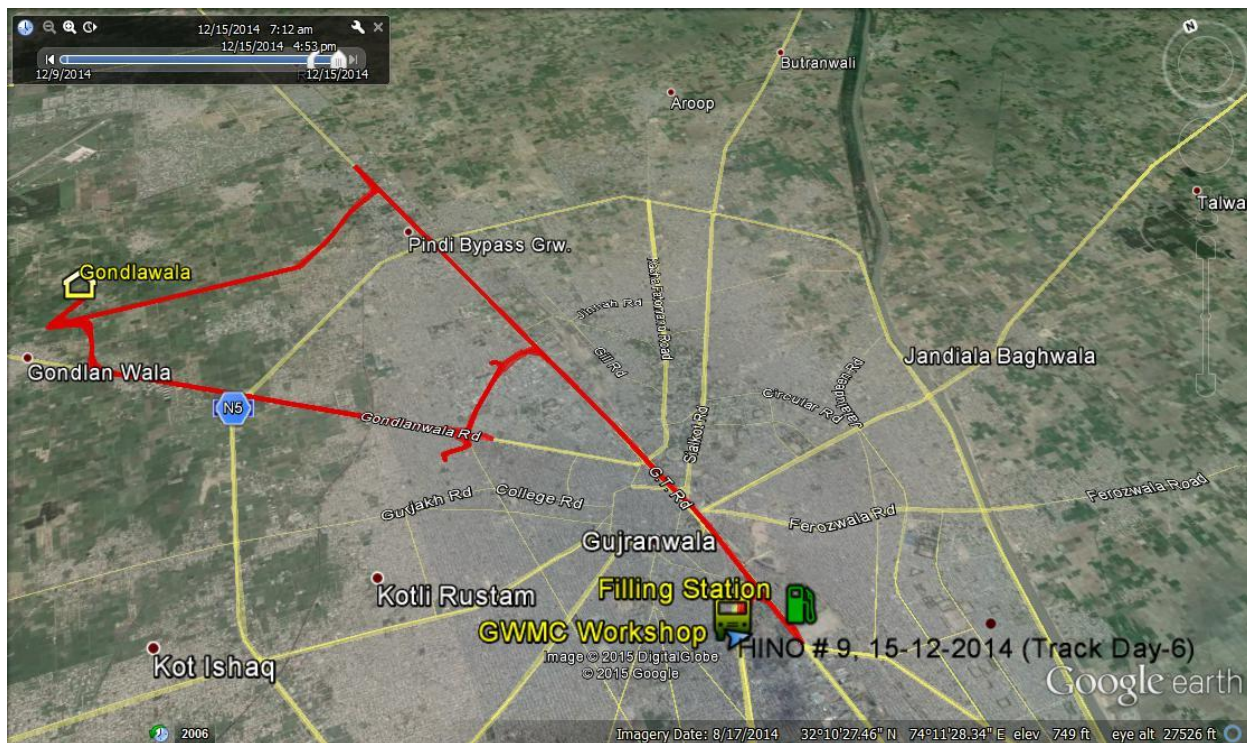


Figure 6: Hino-9, Track Day 1

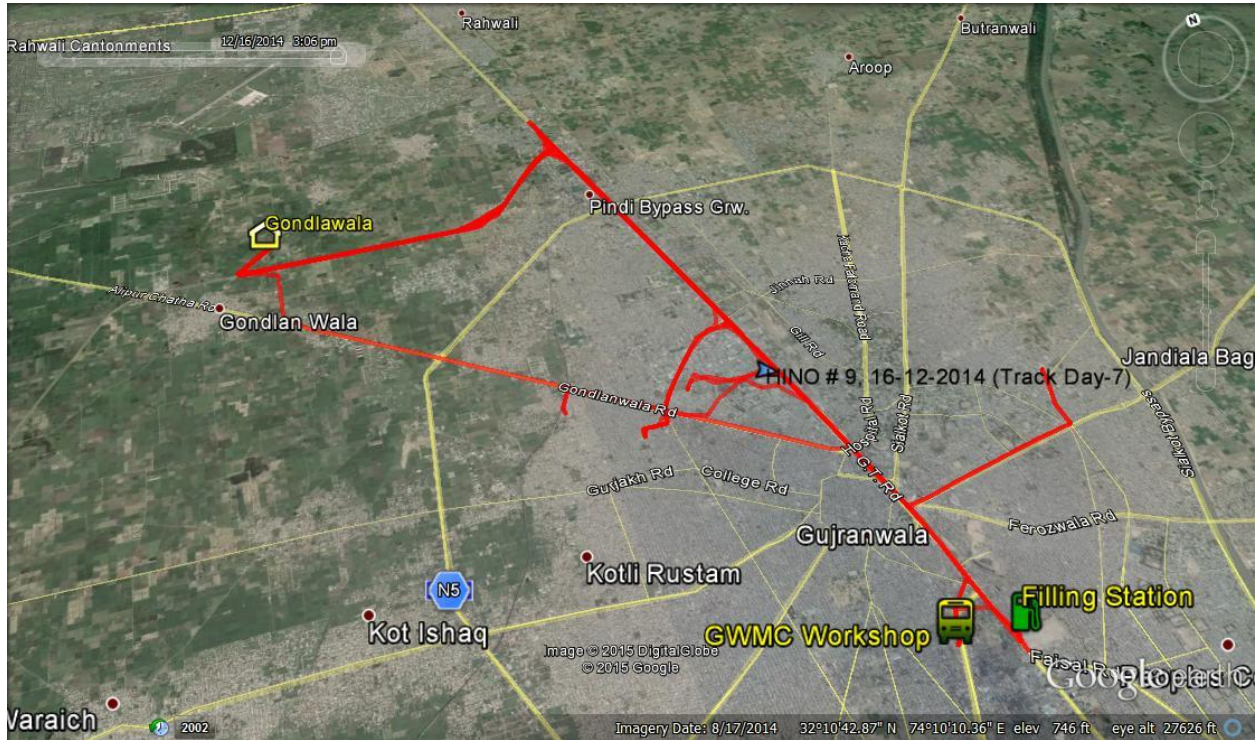


Figure 7: Hino-9, Track Day 2

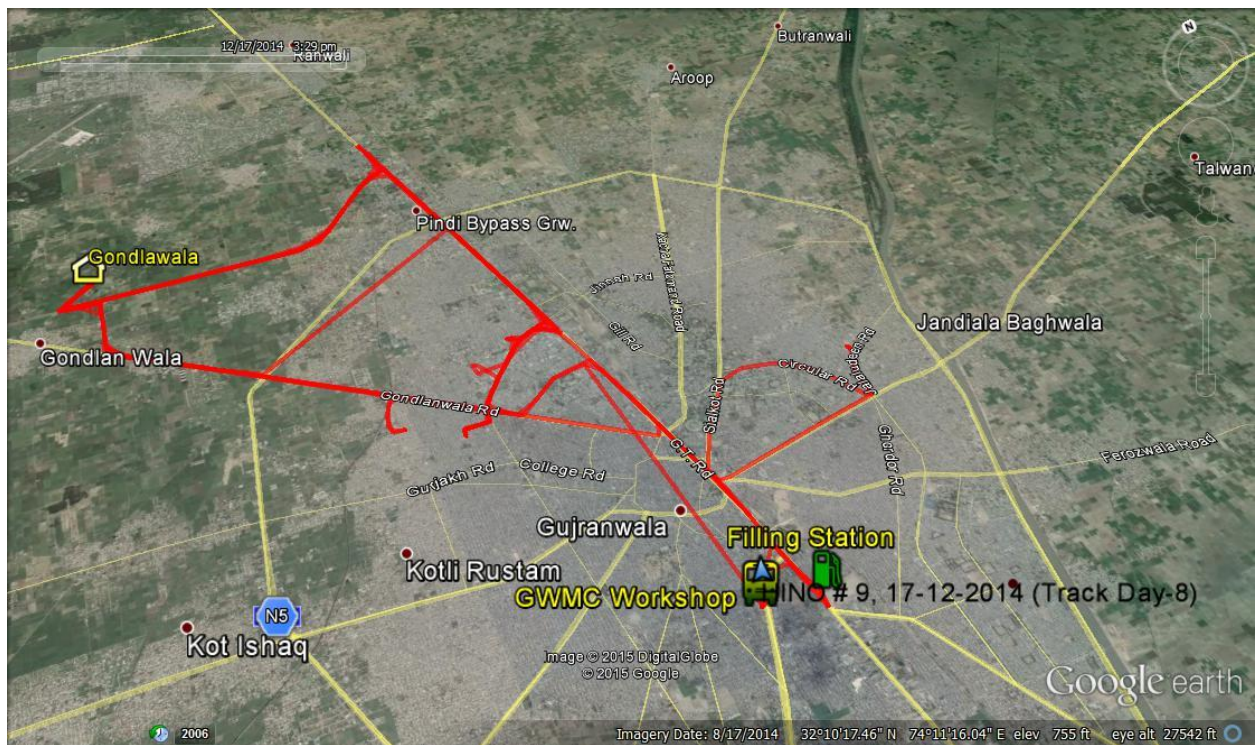


Figure 8: Hino-9, Track Day 3



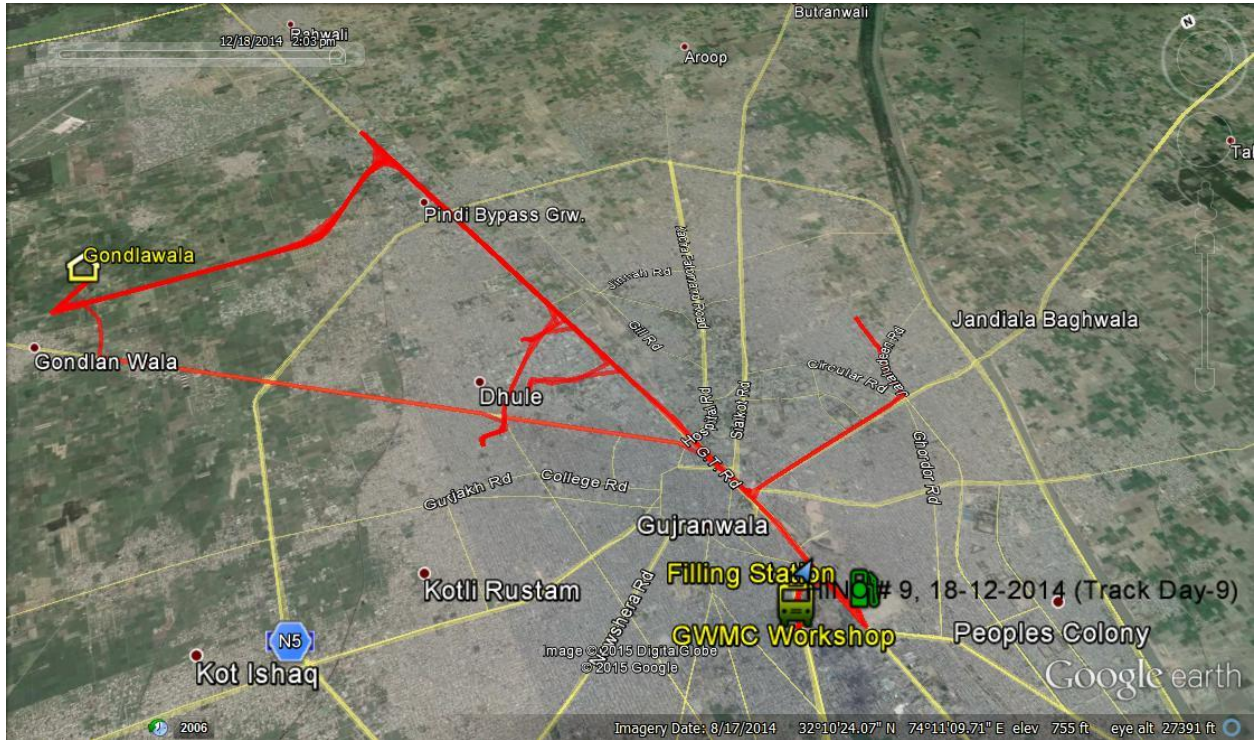


Figure 9: Hino-9, Track Day 4

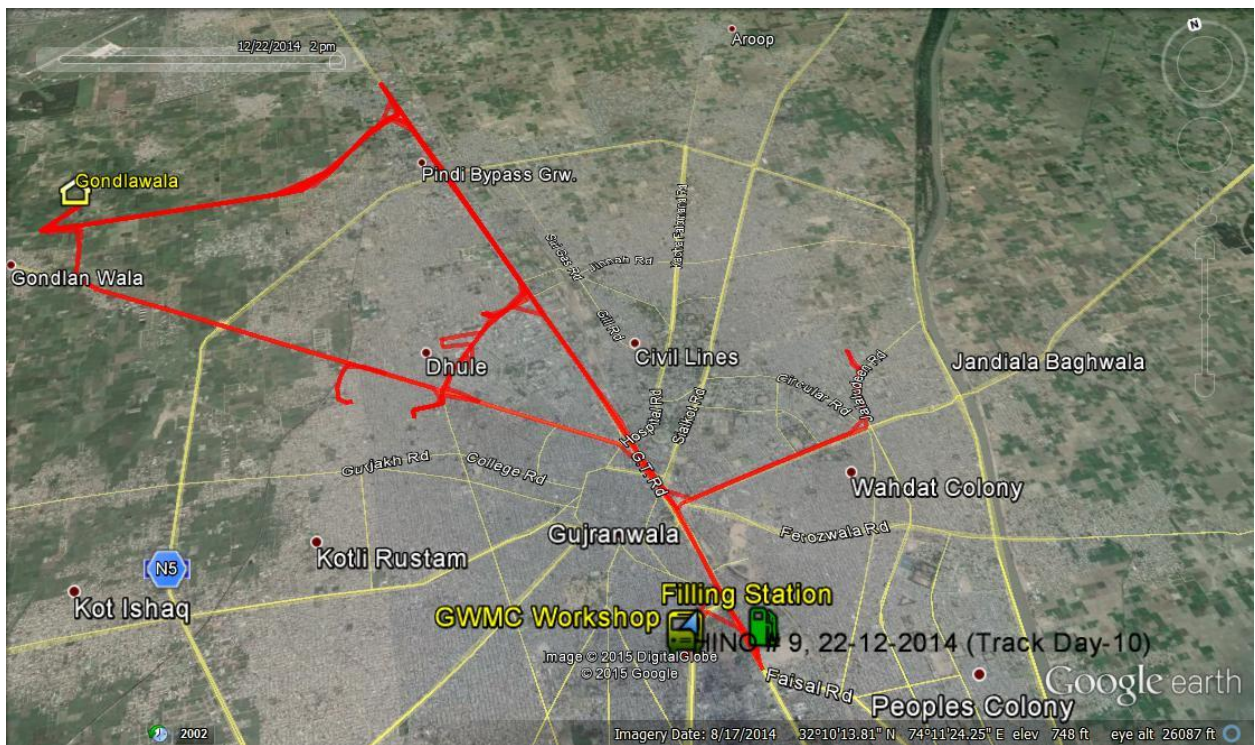


Figure 10: Hino-9, track Day 5

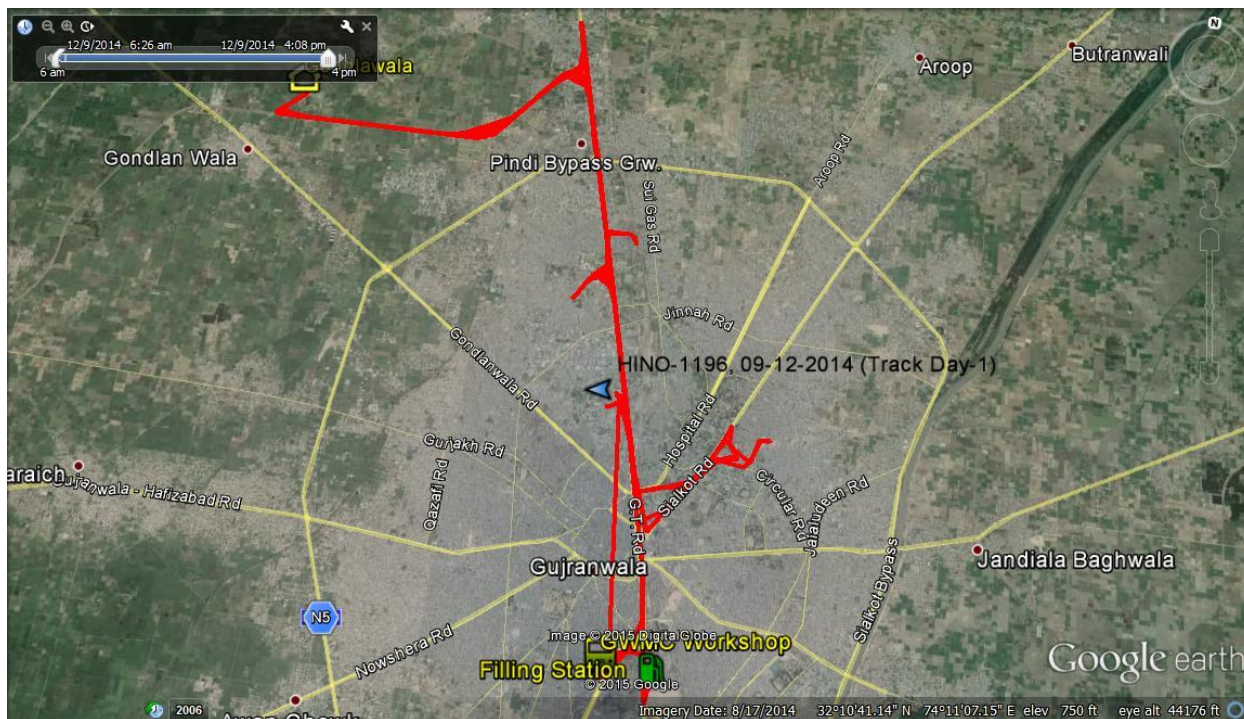


Figure 11: GAG-1196, Track Day 1

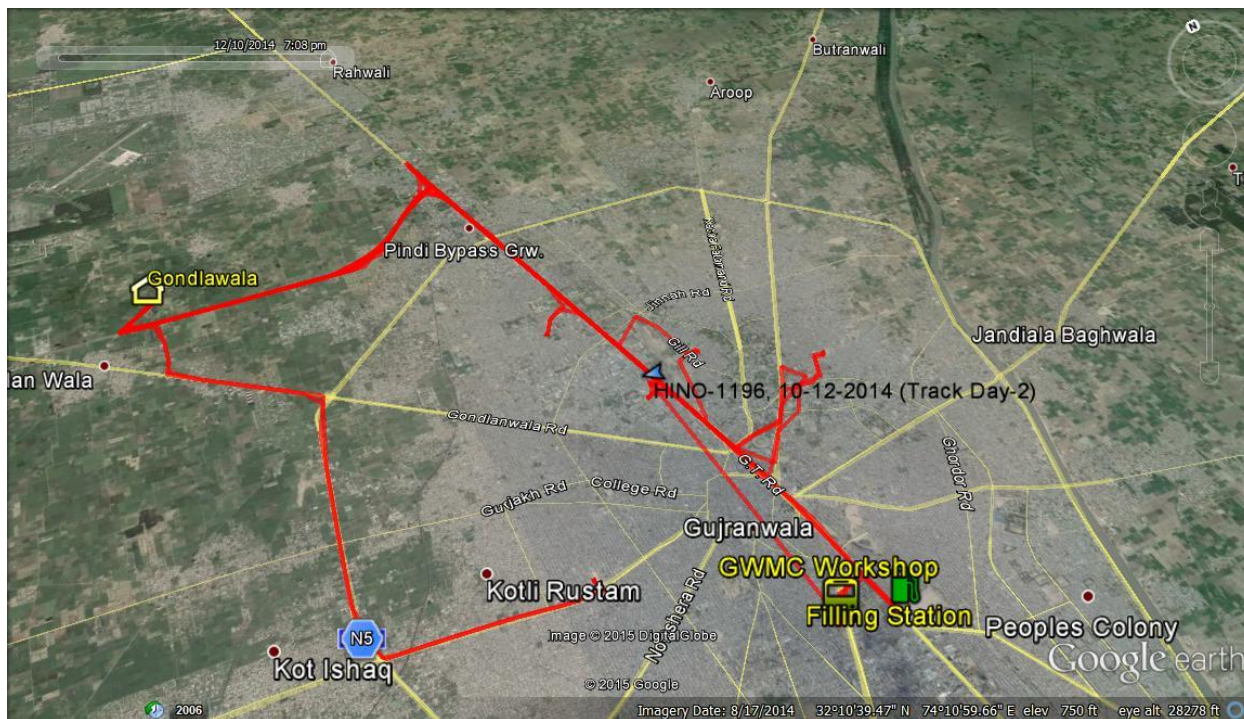


Figure 12: GAG-1196, Track Day 2

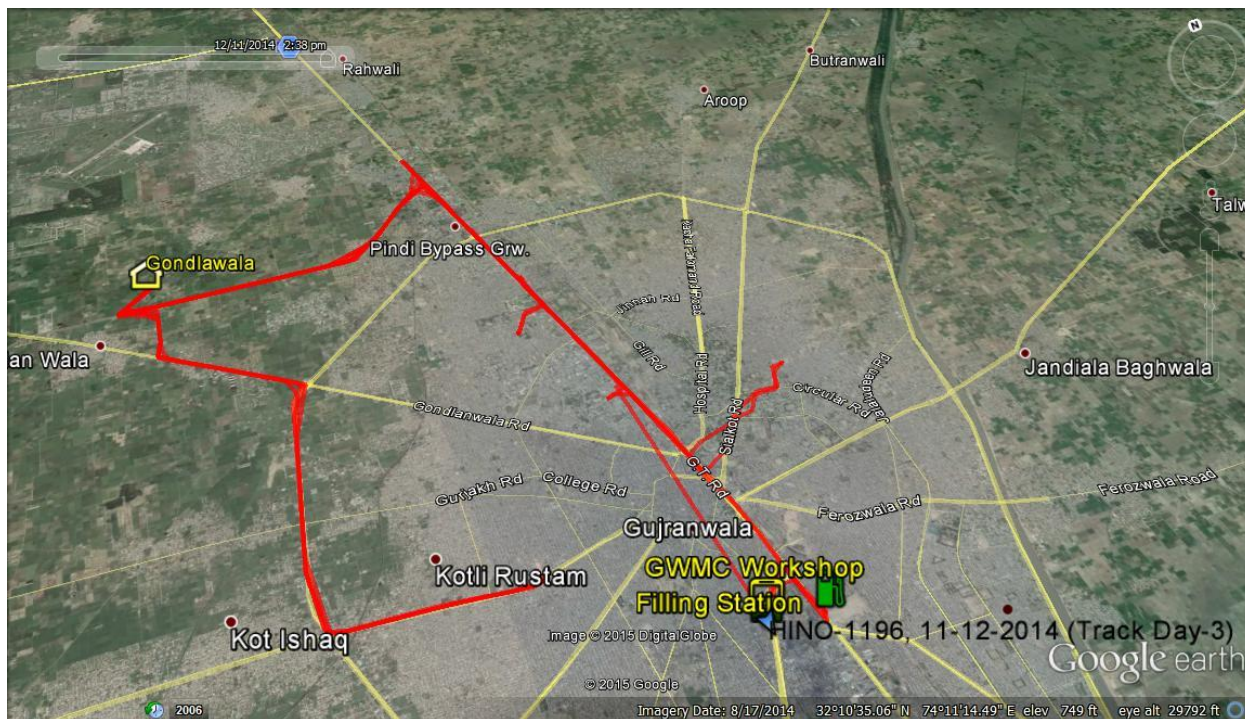


Figure 13: GAG-1196, Track Day 3



Figure 14: GAG-1196, Track Day 4

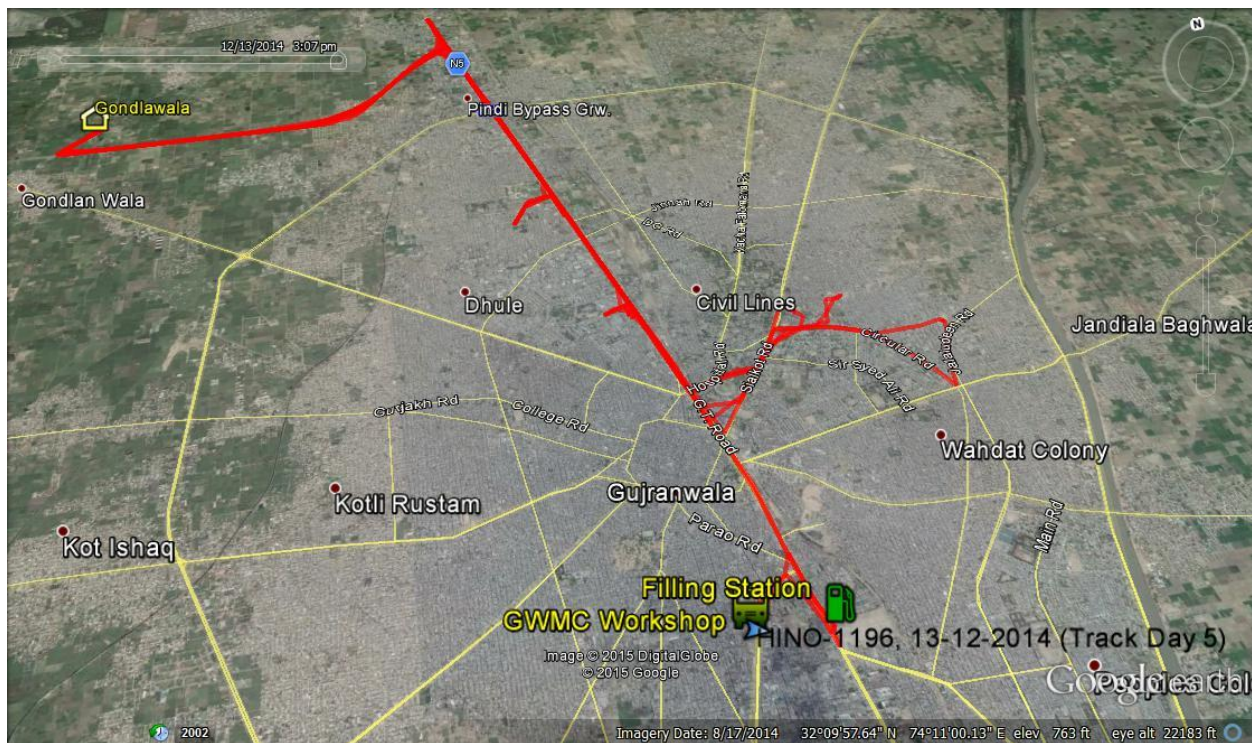


Figure 15: GAG-1196, Track Day 5



Figure 16: MB-02, Track Day 1

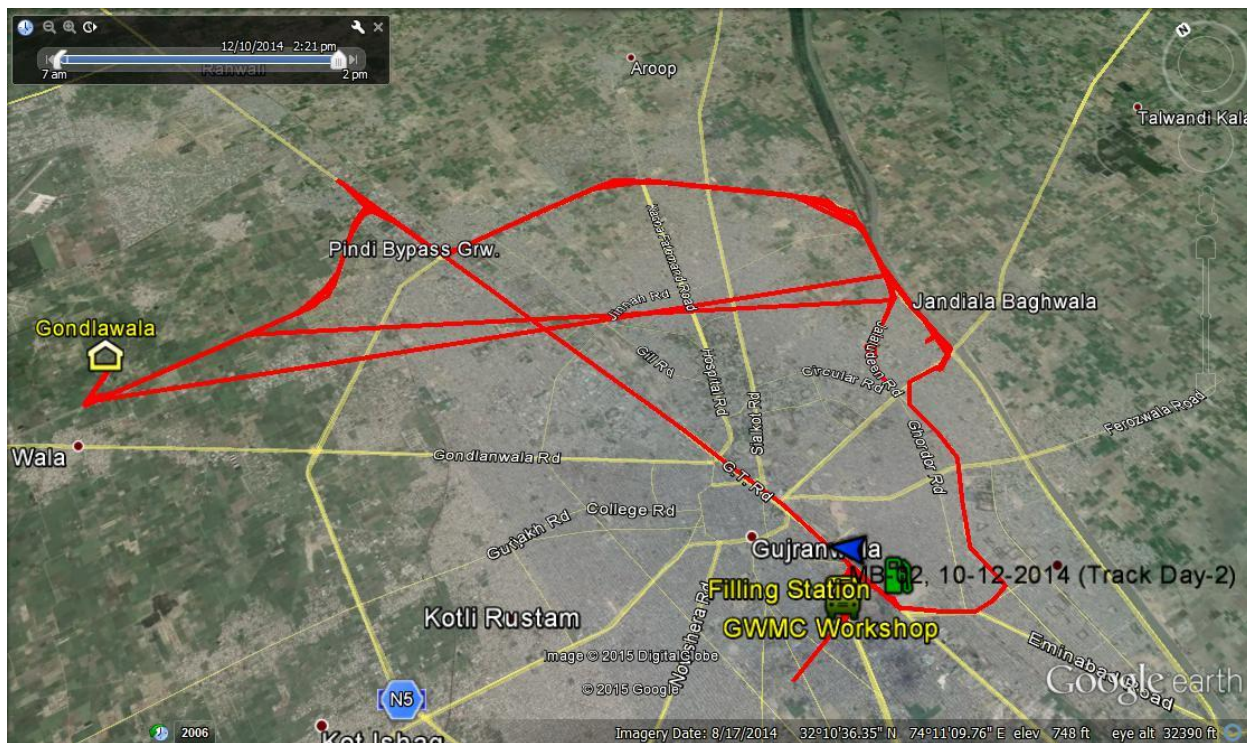


Figure 17: MB-02, Track Day 2

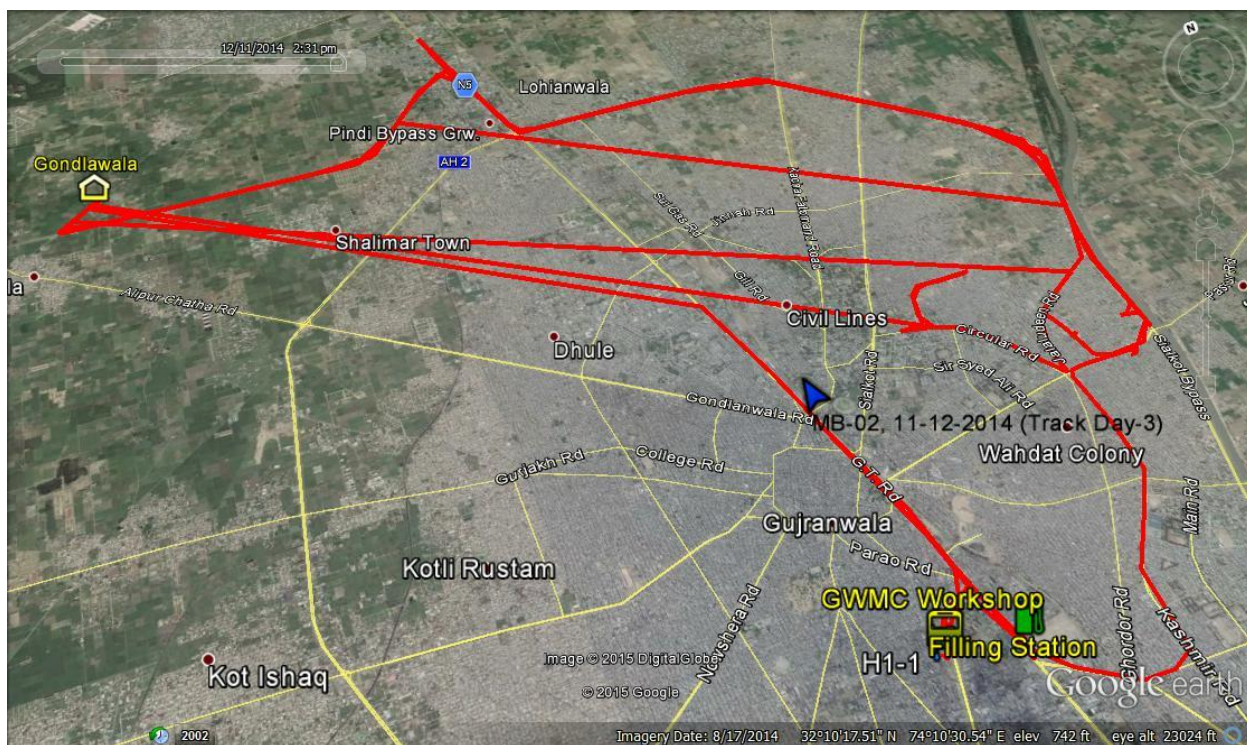


Figure 18: MB-02, Track Day 3

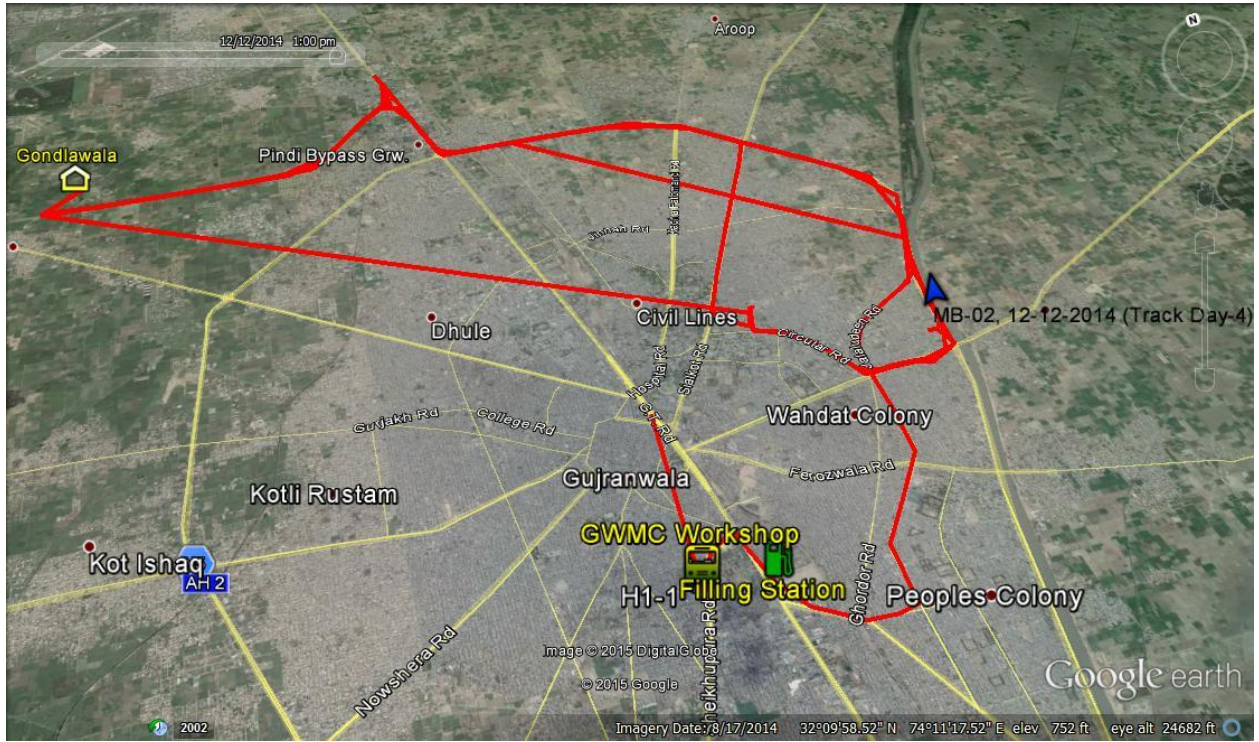


Figure 19: MB-02, Track Day 4

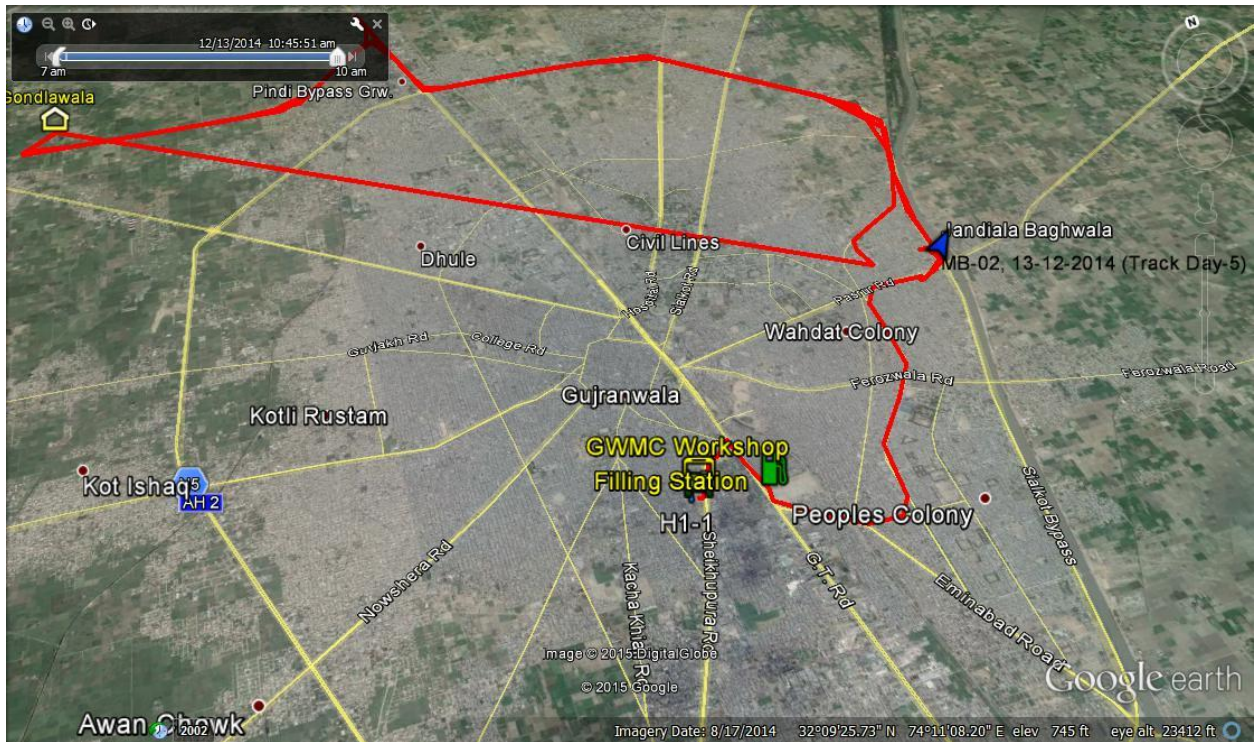


Figure 20: MB-02, Track Day 5

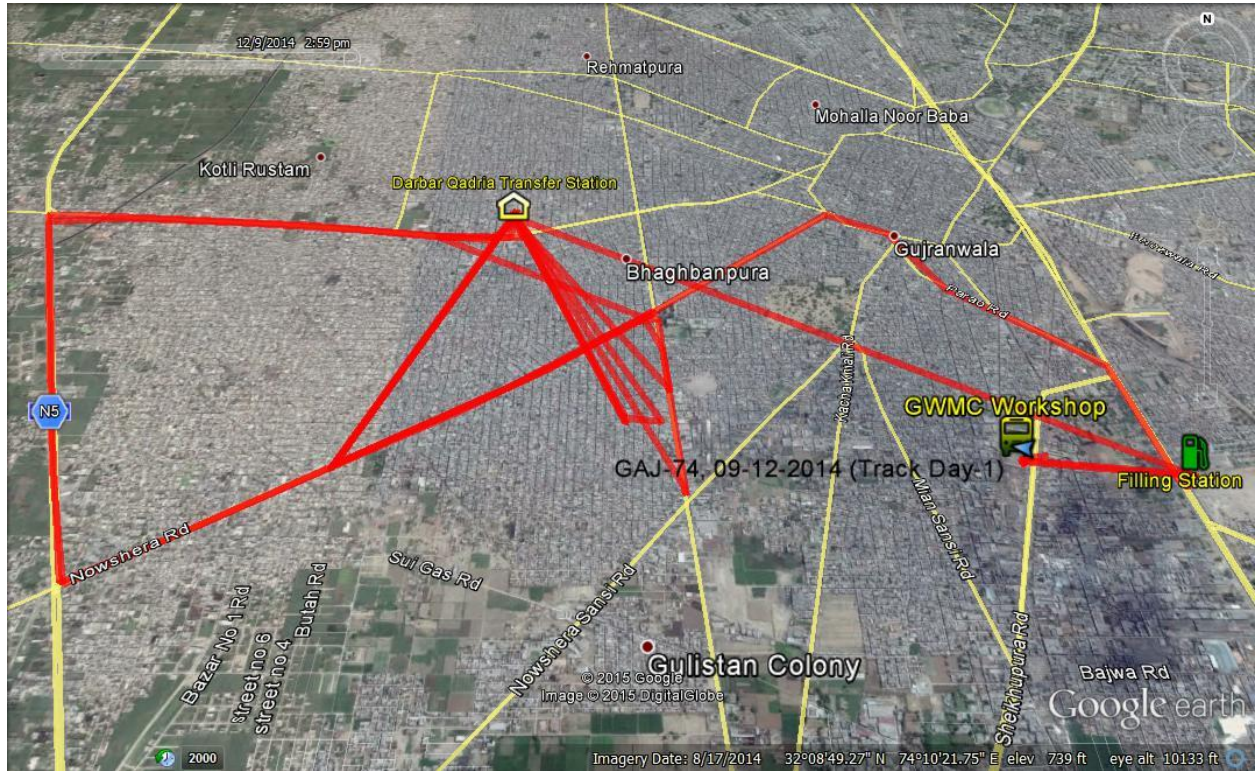


Figure 21: GAJ-74, Track Day 1

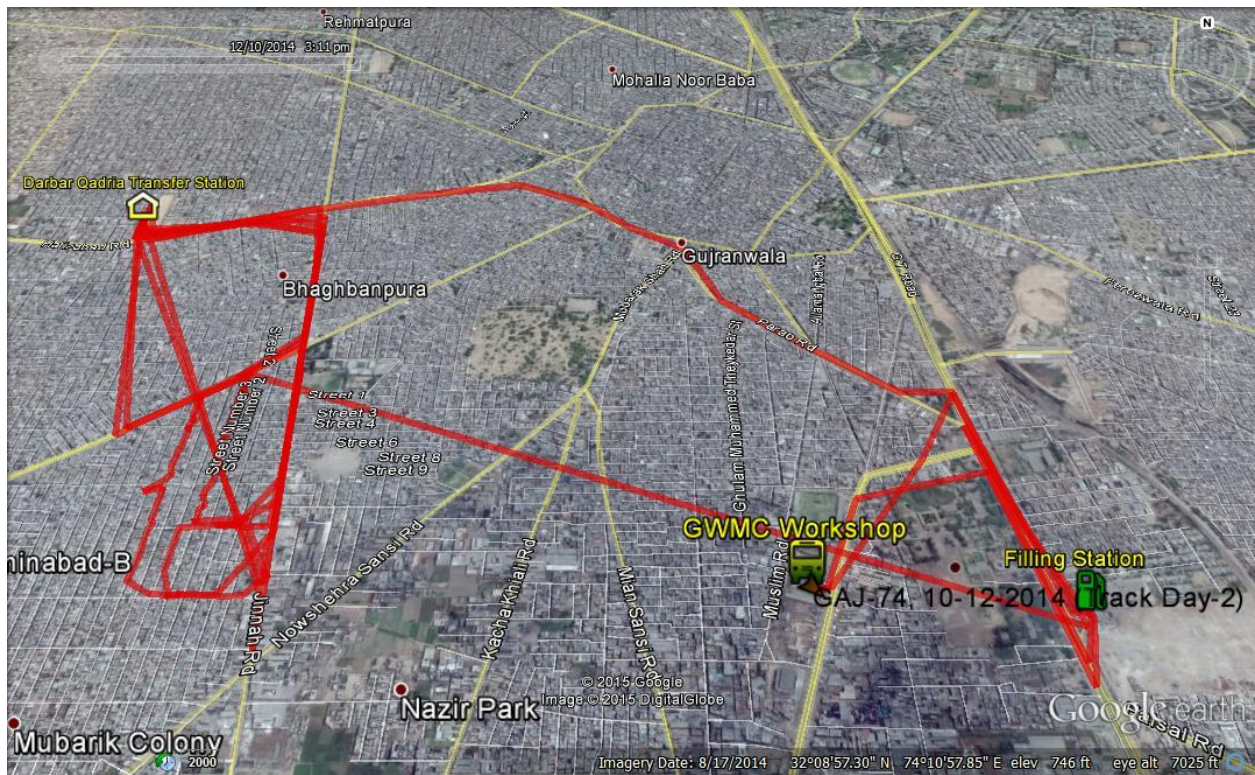


Figure 22: GAJ-74, Track Day 2

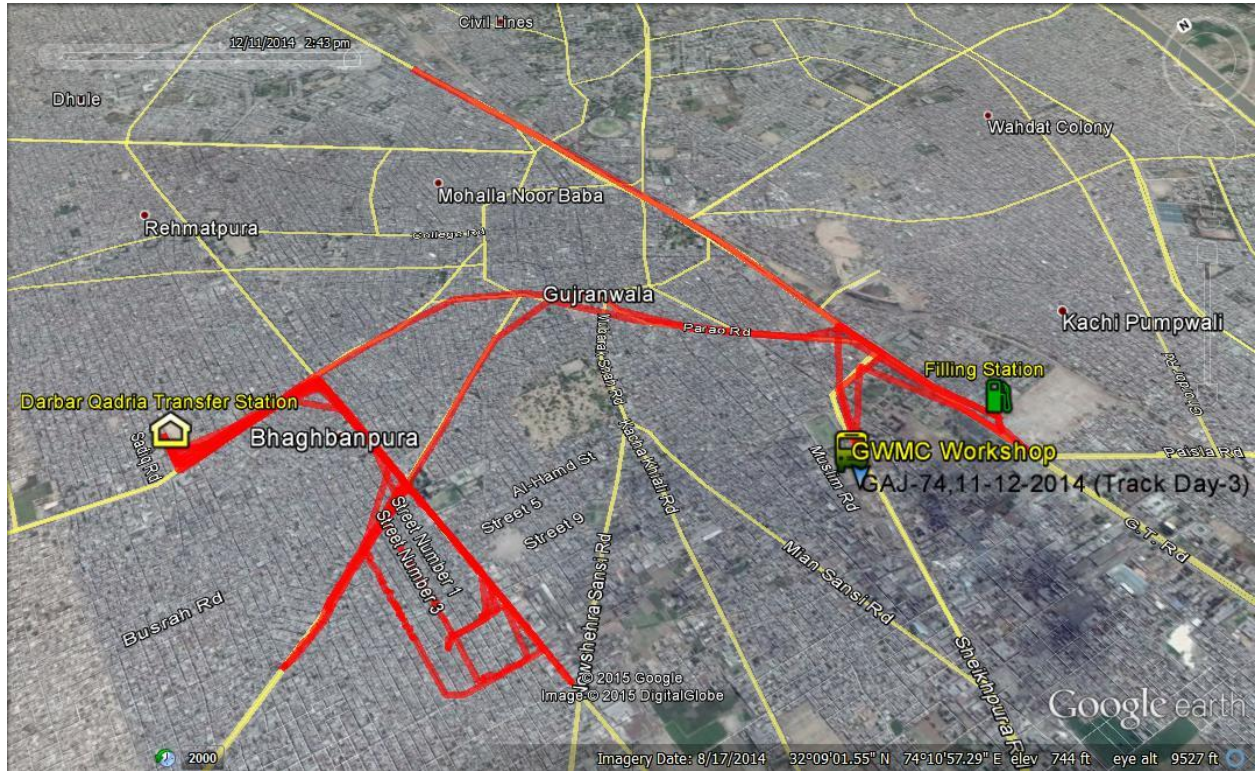


Figure 23: GAJ-74, Track Day 3

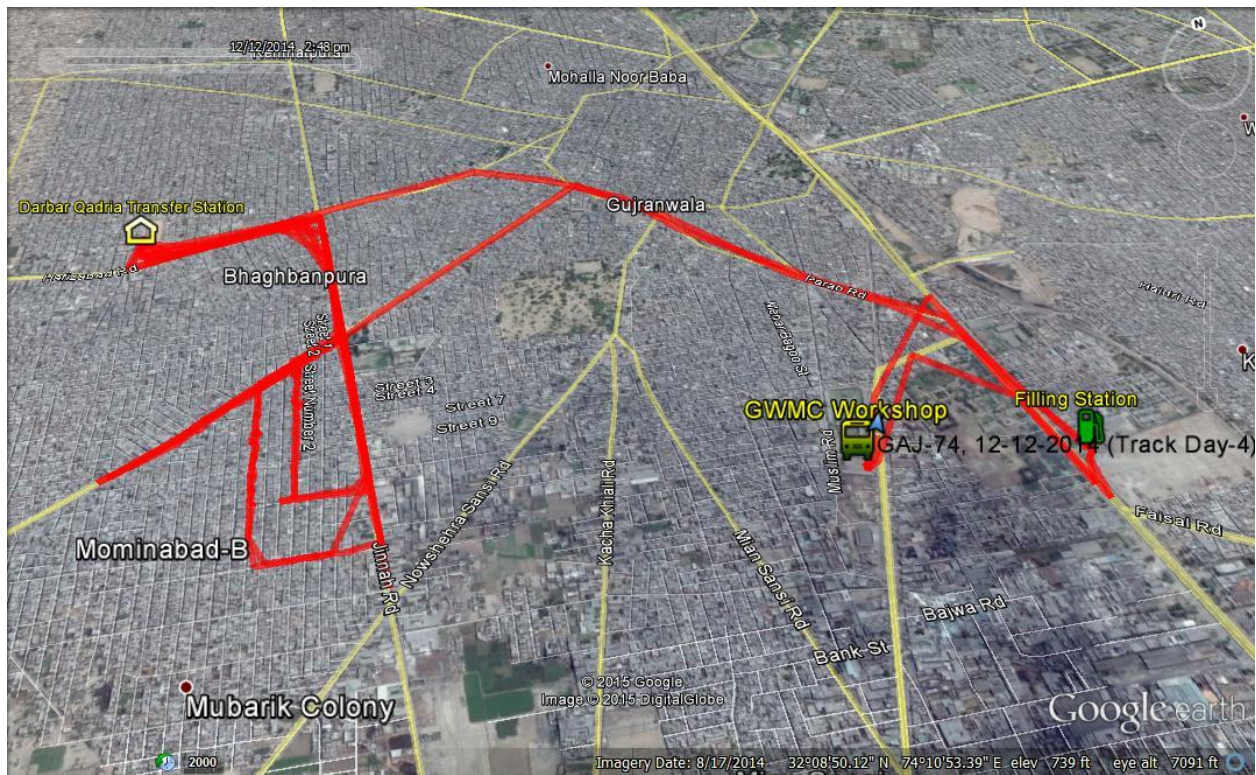


Figure 24: GAJ-74, Track Day 4



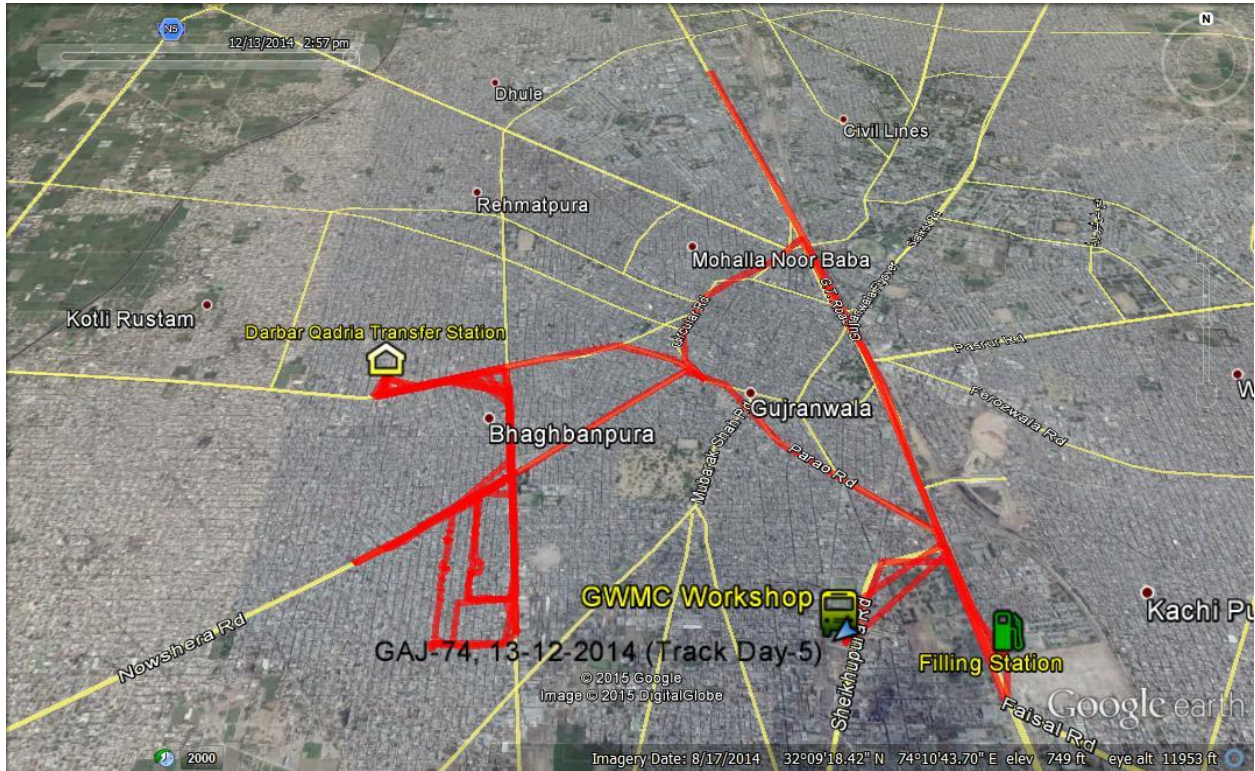


Figure 25: GAJ-74, Track Day 5

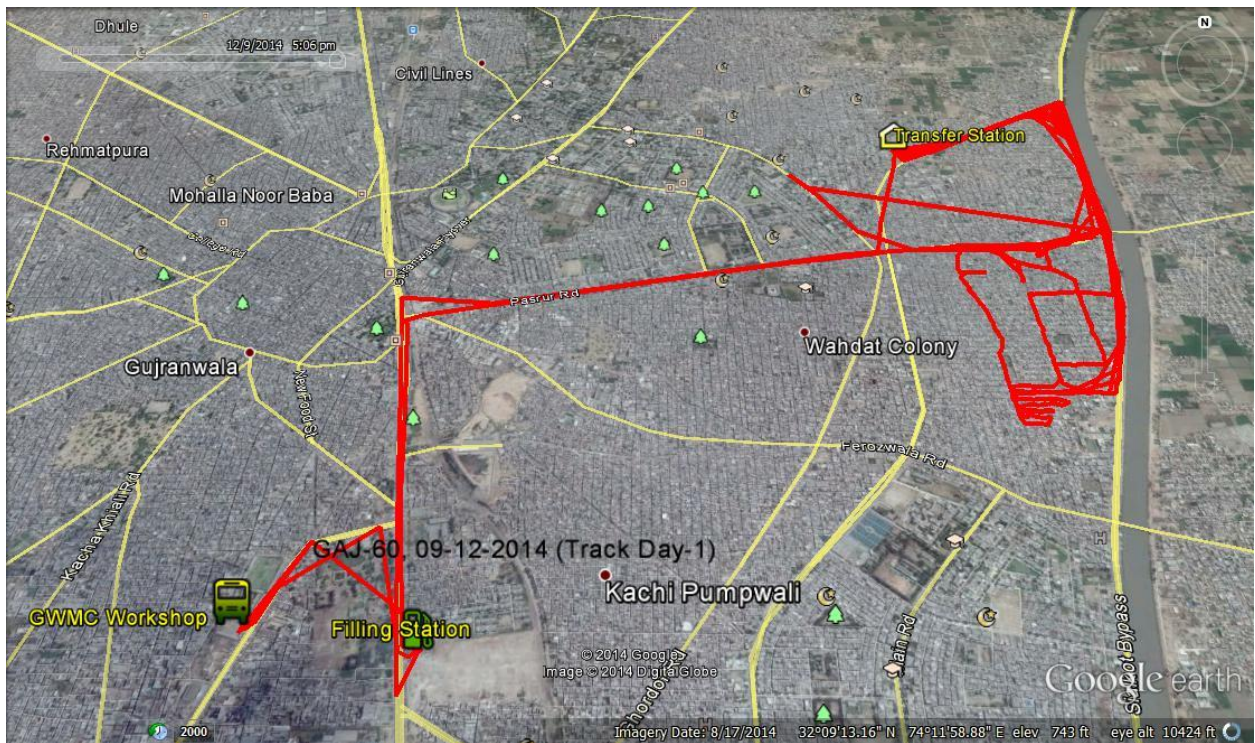


Figure 26: GAJ-60, Track Day 1

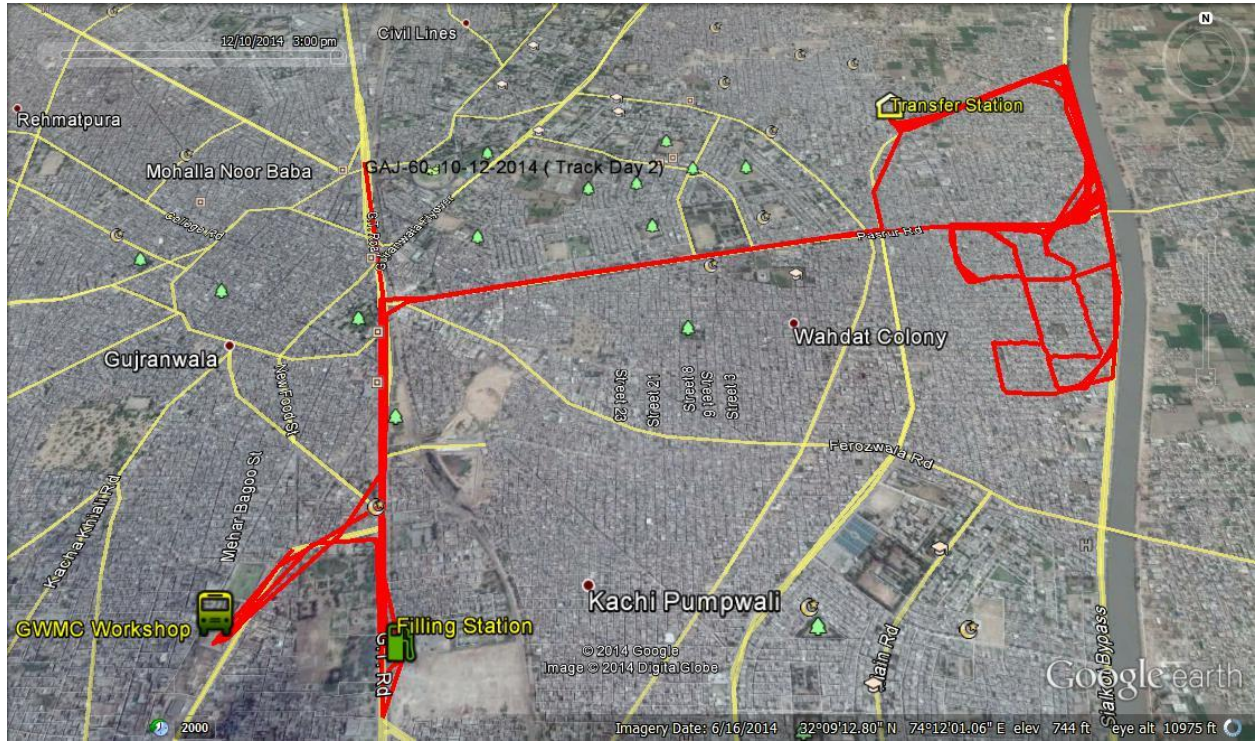


Figure 27: GAJ-60, Track Day 2

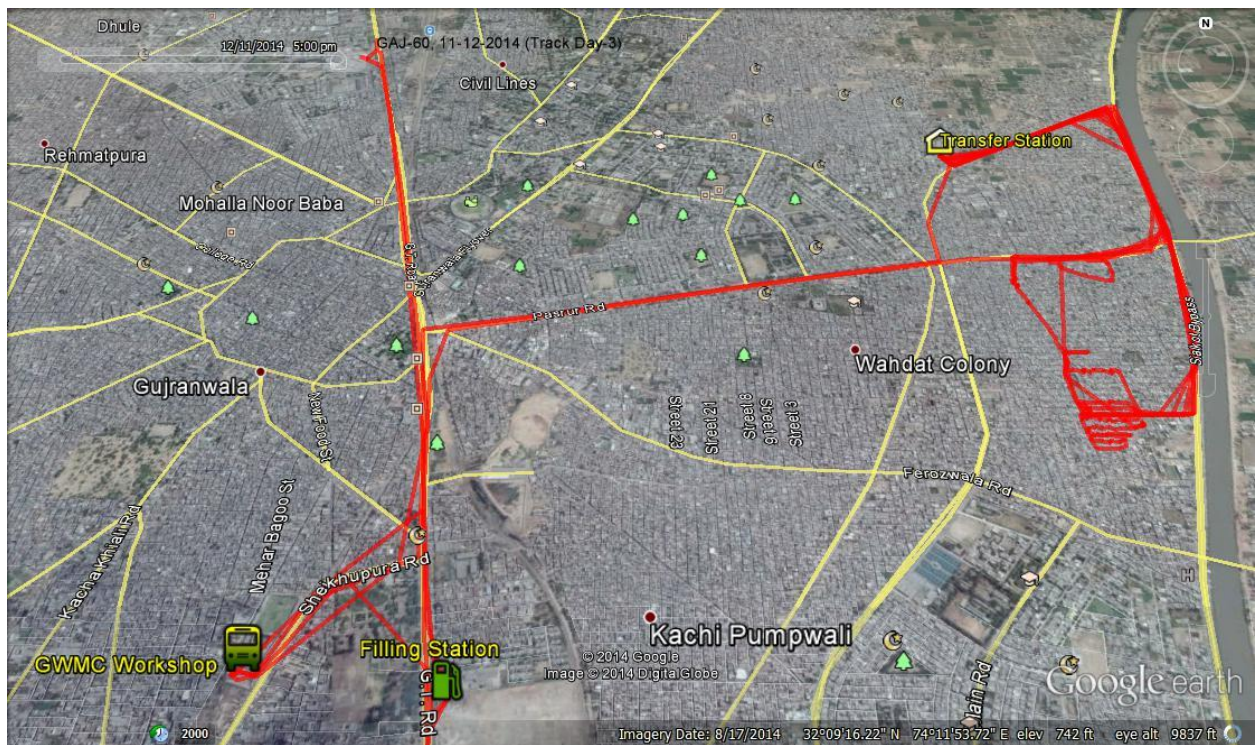


Figure 28: GAJ-60, Track Day 3

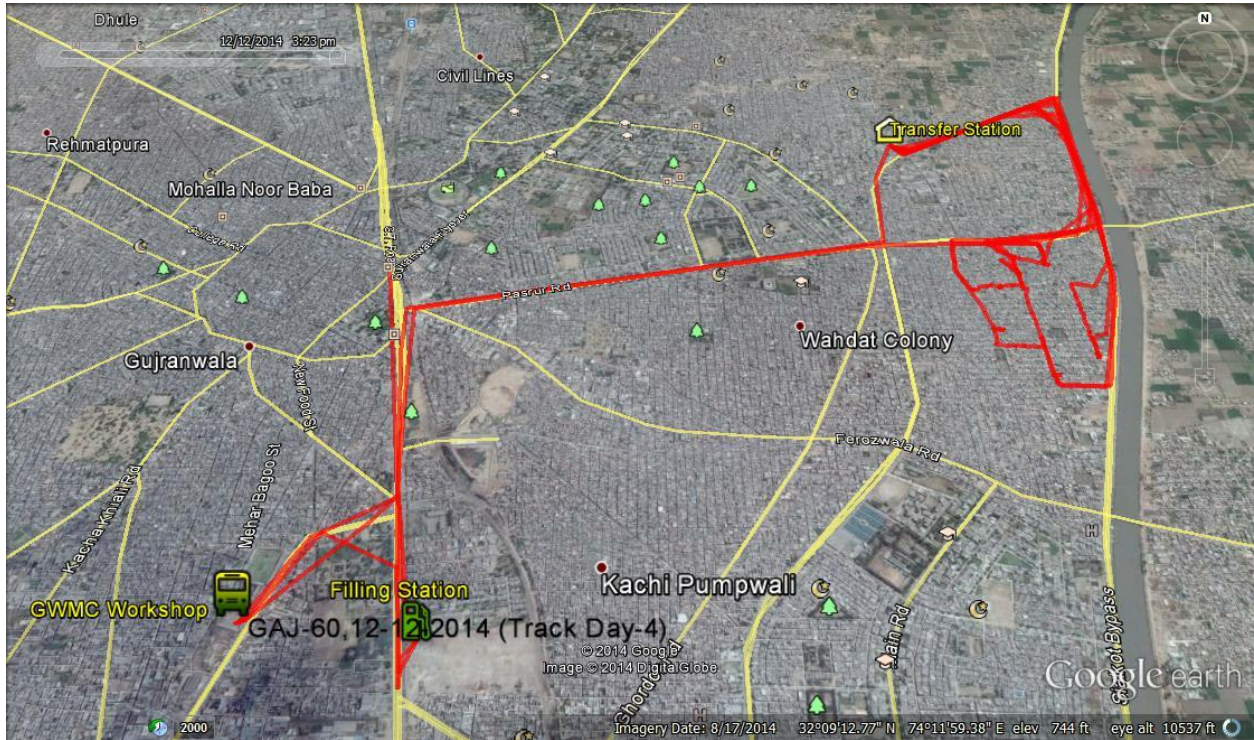


Figure 29: GAJ-60, Track Day 4

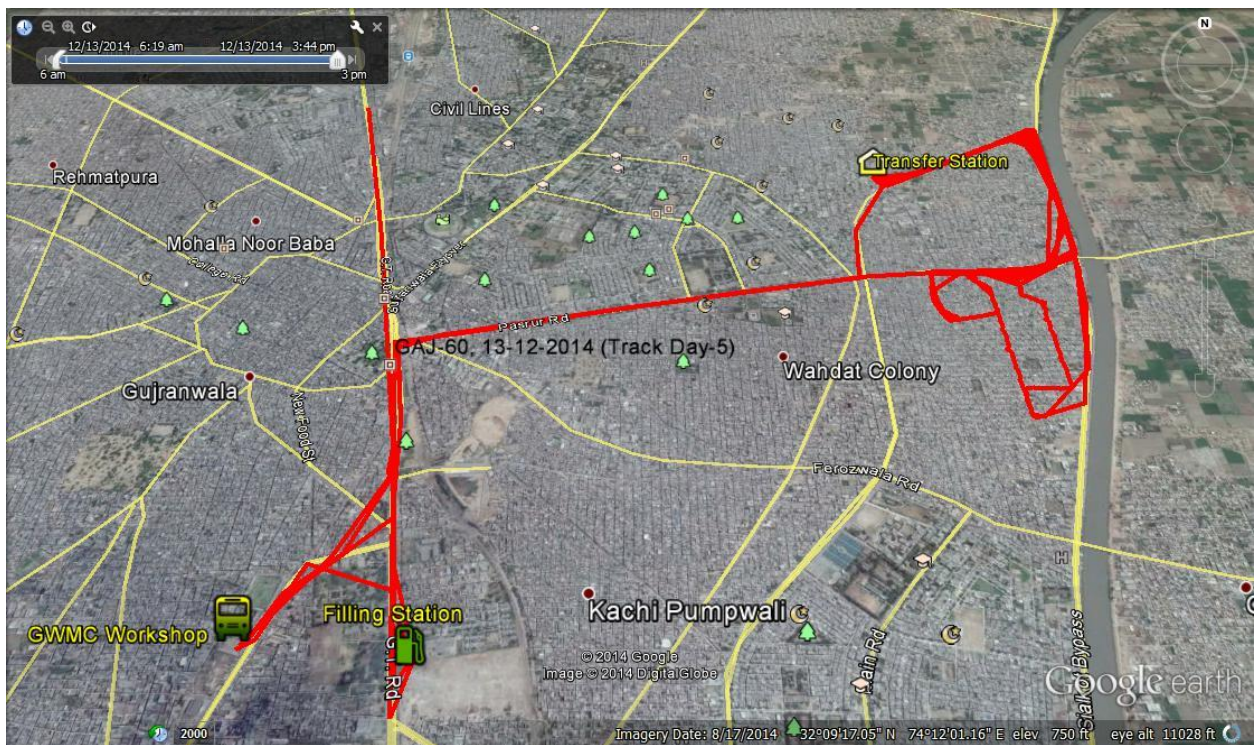


Figure 30: GAJ-60, Track Day 5



Figure 31: TT Holland-2, Track Day 1

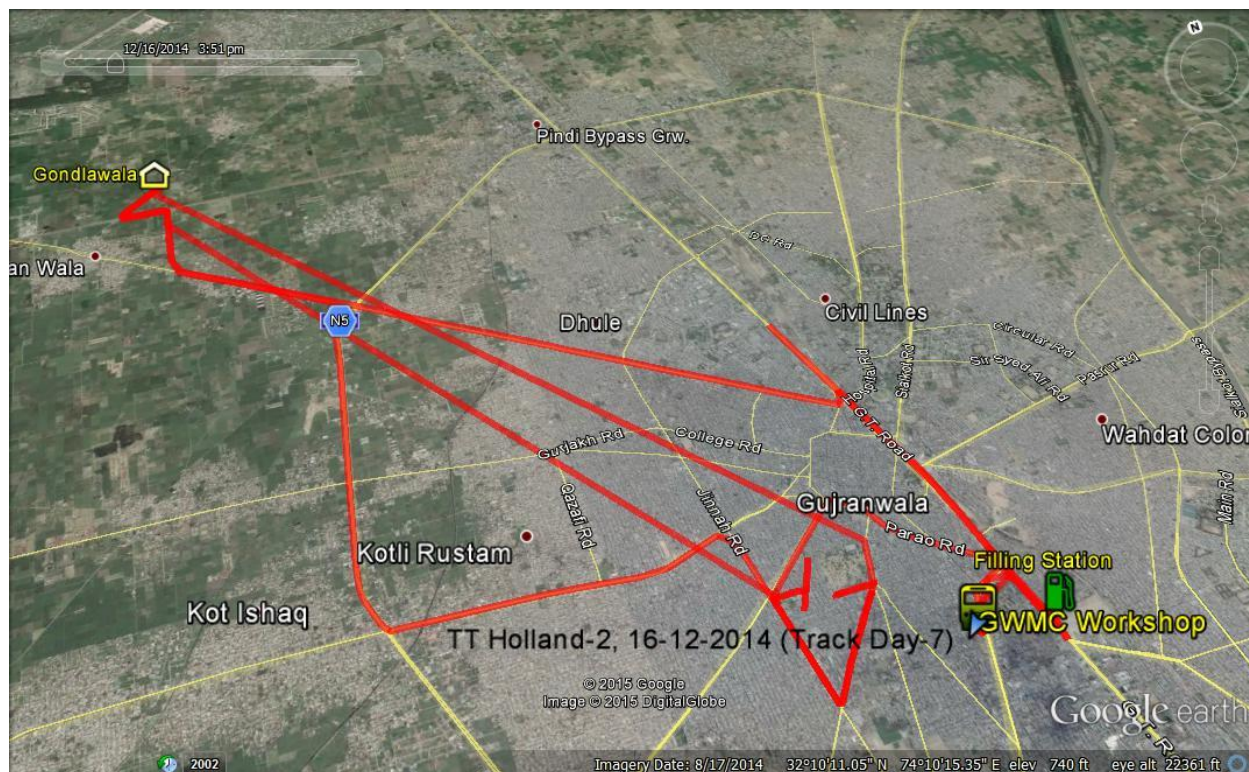


Figure 32: TT Holland-2, Track Day 2

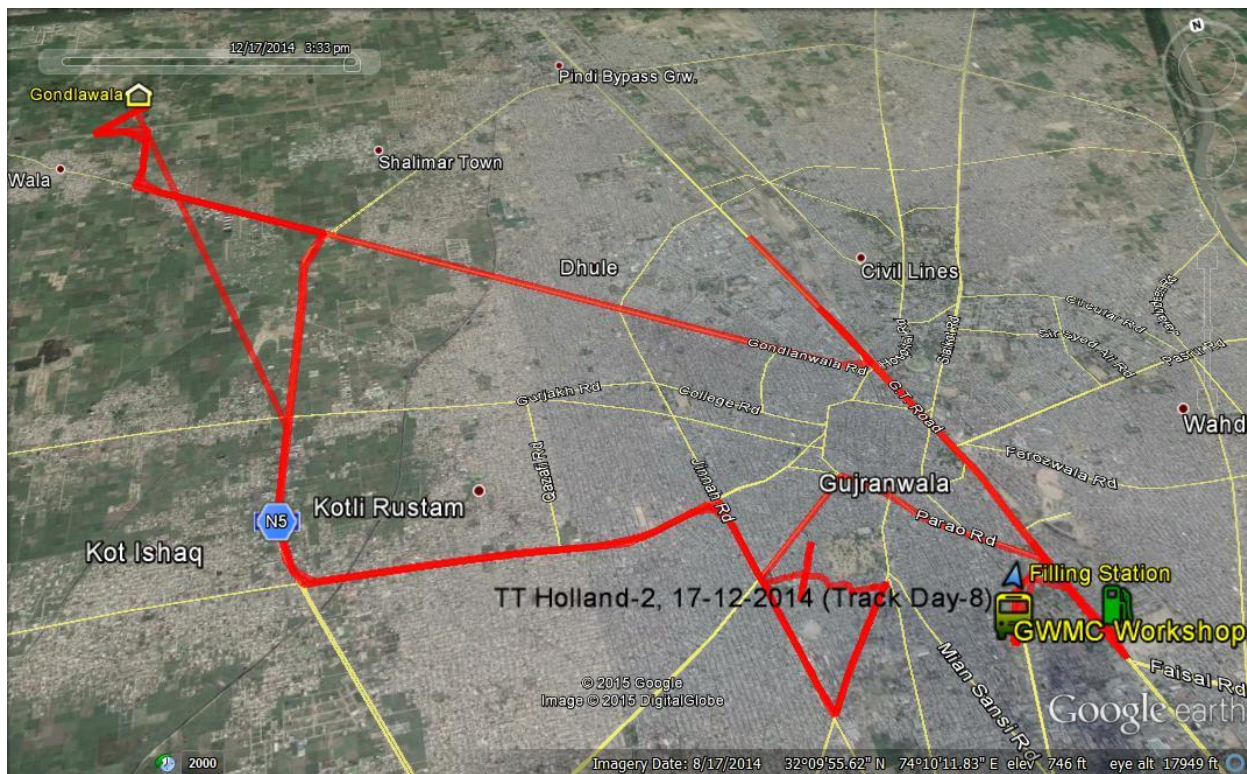


Figure 33: TT Holland-2, Track Day 3

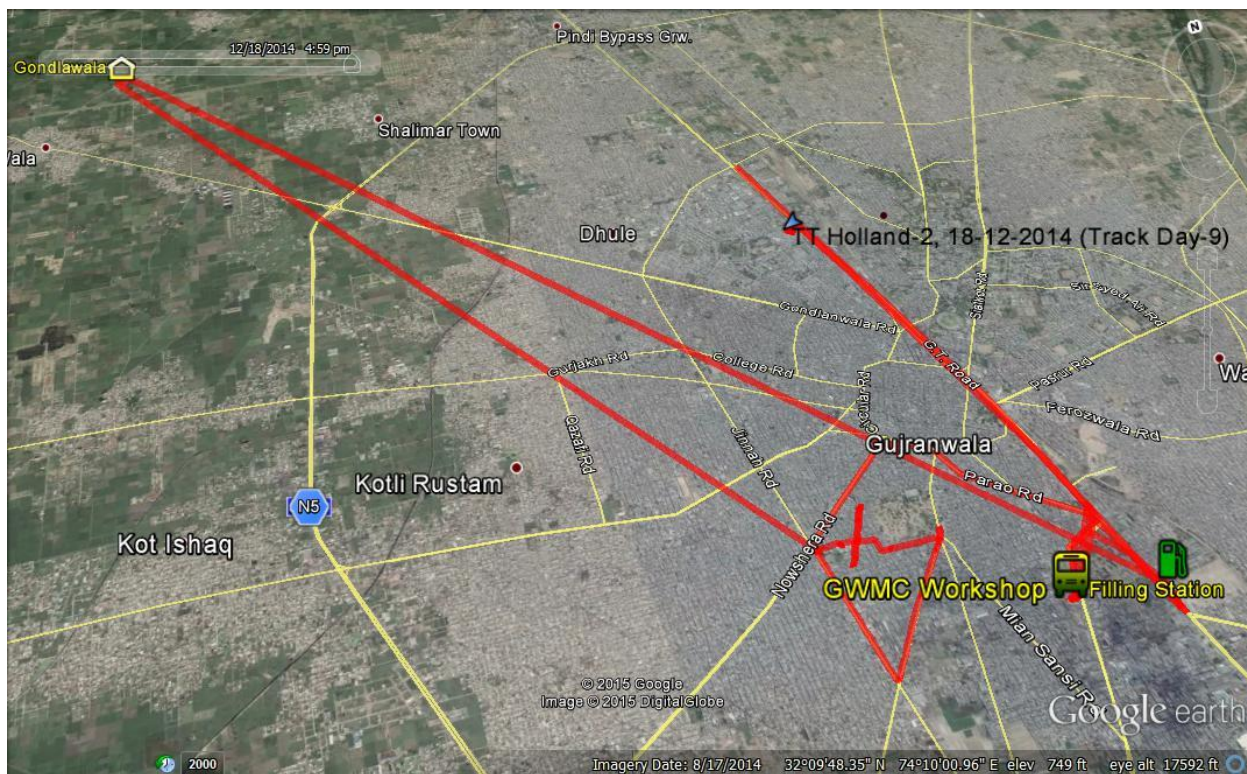


Figure 34: TT Holland-2, Track Day 4



Figure 35: TT Holland-2, Track Day 5

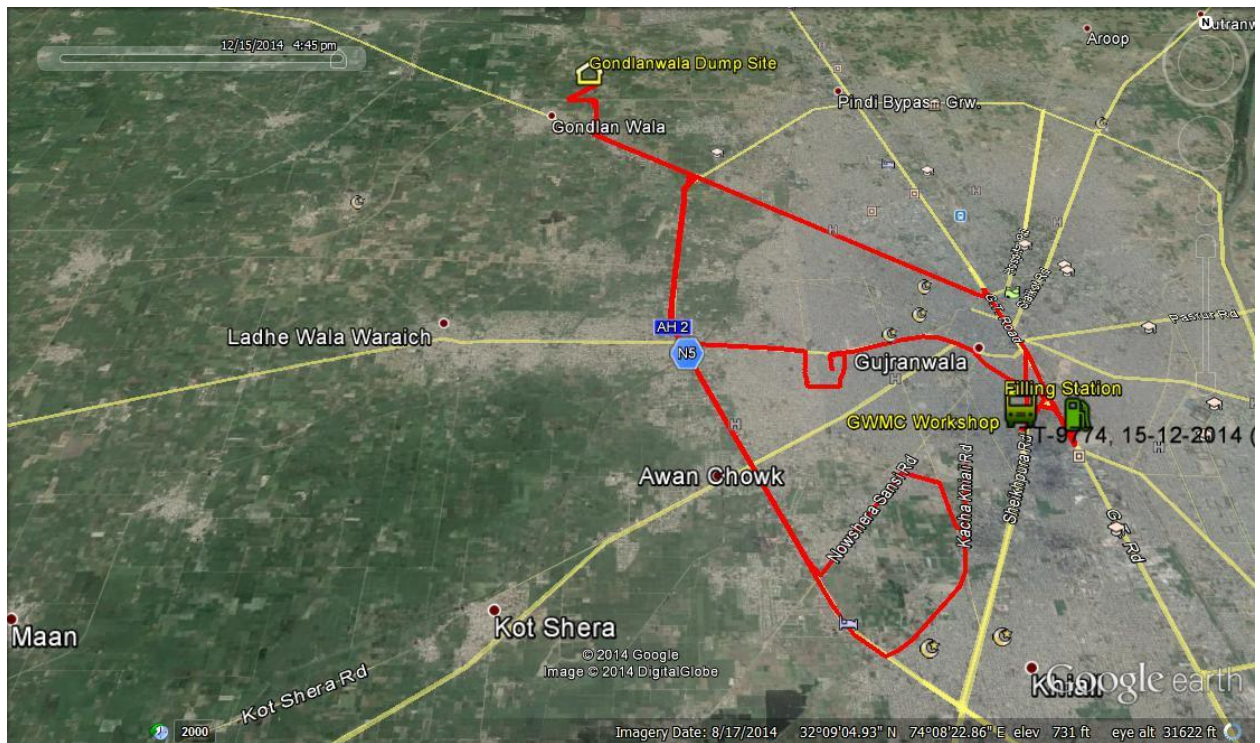


Figure 36: TT-9774, Track Day 1

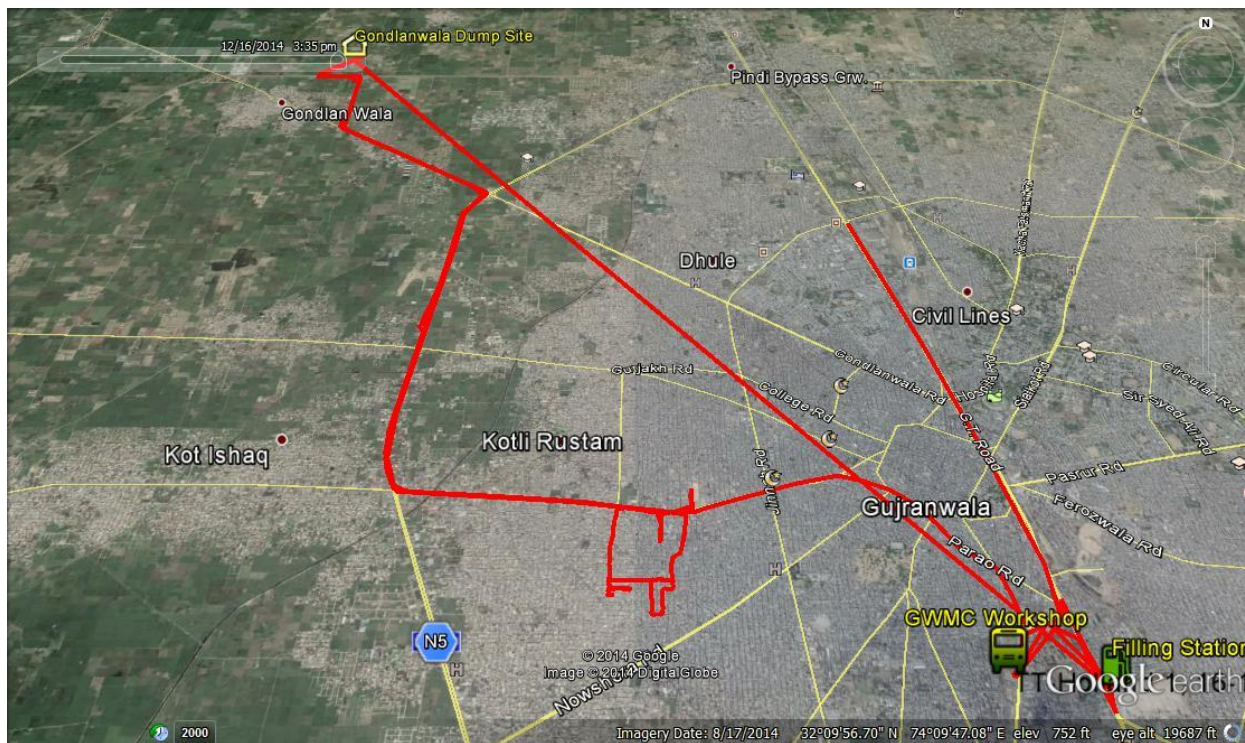


Figure 37: TT Holland-1, Track Day 2

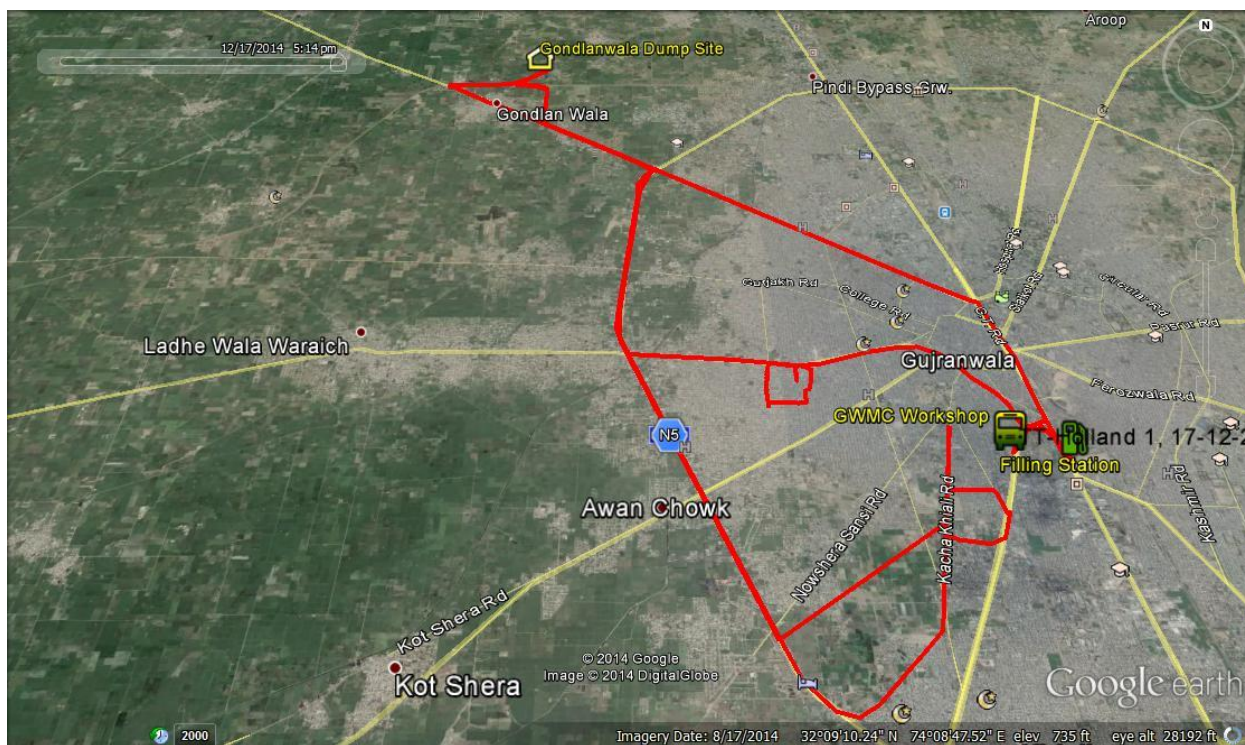


Figure 38: TT Holland-1, Track Day 3

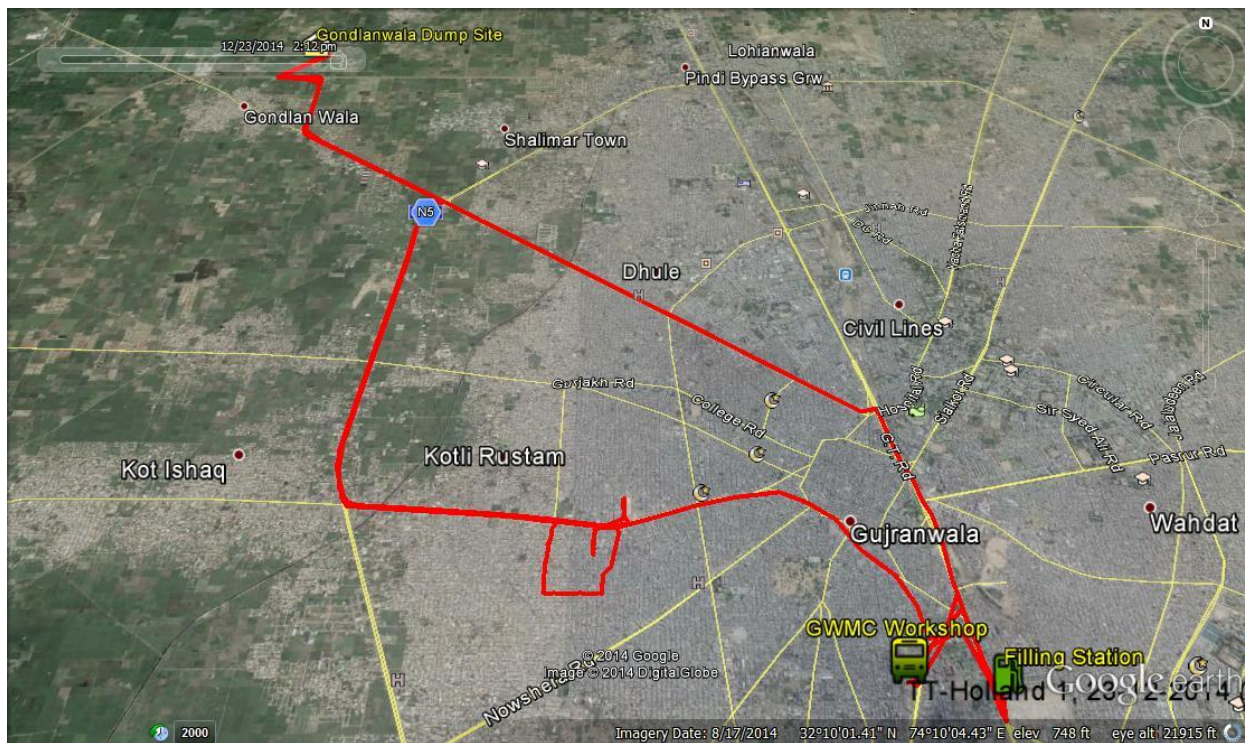


Figure 39: TT Holland-1, Track Day 4

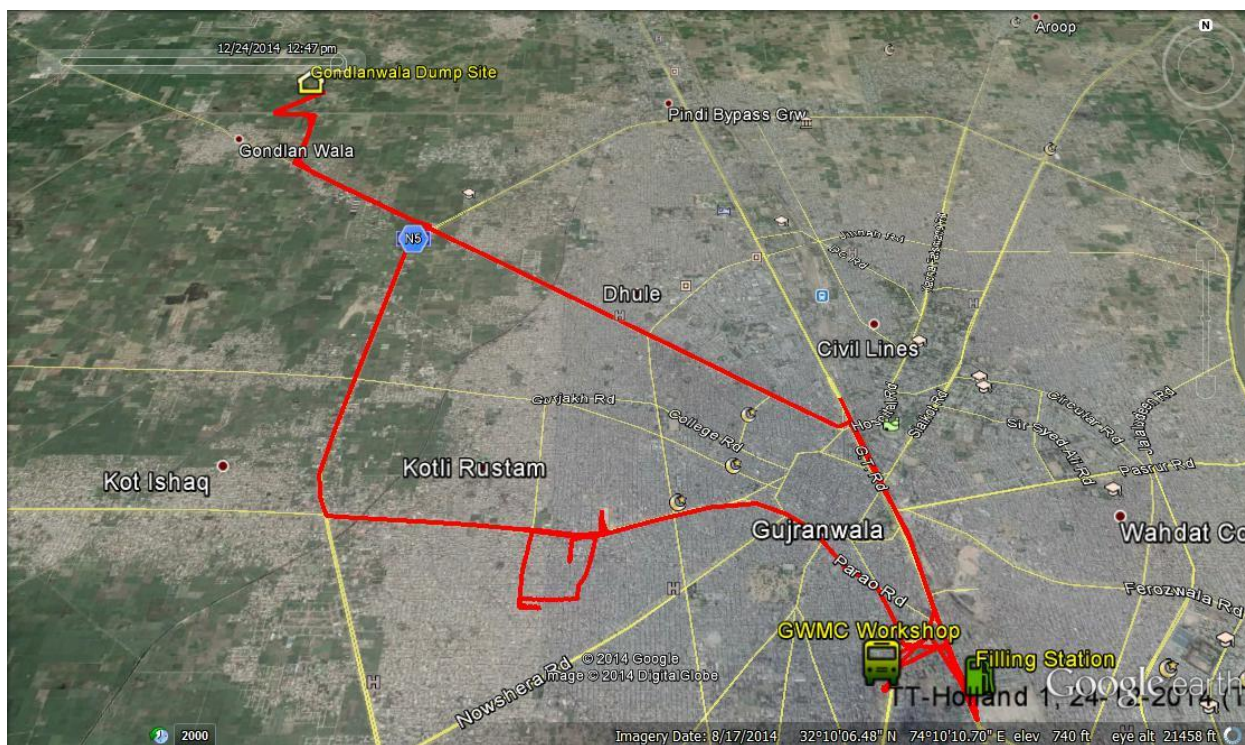


Figure 40: TT Holland-1 Track Day 5



**1. Daily Summary of Waste Handling Amount, Number of Trips, Milage and Fuel consumption for Each Vehicle**

Survey Date	Collection Area	Vehicle No./Type of Vehicle	Number of Trips	Numbers of Collection Points	Waste Handling Amount (ton/day)	Milage (km)	Fuel Consumption (liters)	
15/12/2014	UC-26, 27, 28, 29	Hino-11, Arm Roll Truck	5	5	11.62	196	53	
16/12/2014	UC-26, 27, 28, 29		4	4	9.38	152.1	53	
17/12/2014	UC-26, 27, 28, 29		3	3	6.68	123	38	
20/12/2014	UC-26, 27, 28, 29		4	4	10.92	151.1	51	
22/12/2014	UC-26, 27, 28, 29		5	5	14.38	197.8	56	
<b>Total</b>			<b>21</b>	<b>21</b>	<b>52.98</b>	<b>820</b>	<b>251</b>	
<b>Average</b>			<b>4.2</b>	<b>4.2</b>	<b>10.6</b>	<b>164</b>	<b>50.2</b>	

Survey Date	Collection Area	Vehicle No./Type of Vehicle	Number of Trips	Numbers of Collection Points	Waste Handling Amount (ton/day)	Milage (km)	Fuel Consumption (liters)	
15/12/2014	UC-6, 17 TS, 56, 60, 61, 62	Hino-9, Arm Roll Truck	5	5	12.88	115.3	25	
16/12/2014	UC-6, 17 TS, 56, 60, 61, 62		5	5	12.64	145.5	31	
17/12/2014	UC-6, 17 TS, 56, 60, 61, 62		5	5	15.26	135.8	37.31	
18/12/2014	UC-6, 17 TS, 56, 60, 61, 62		5	5	14.68	138.3	37.28	
22/12/2014	UC-6, 17 TS, 56, 60, 61, 62		5	5	19.7	129.8	37	
<b>Total</b>			<b>25</b>	<b>25</b>	<b>75.16</b>	<b>664.7</b>	<b>167.59</b>	
<b>Average</b>			<b>5</b>	<b>5</b>	<b>15.03</b>	<b>132.94</b>	<b>33.52</b>	

Survey Date	Collection Area	Vehicle No./Type of Vehicle	Number of Trips	Numbers of Collection Points	Waste Handling Amount (ton/day)	Milage (km)	Fuel Consumption (liters)	
9/12/2014	UC-4, 8, 15, 17 TS, 52 TS, 64	GAG-1196, Arm Roll Truck	5	5	11.12	149.7	26	
10/12/2014	UC-4, 8, 15, 17 TS, 52 TS, 64		5	5	12.78	135	27.38	
11/12/2014	UC-4, 8, 15, 17 TS, 52 TS, 64		5	5	12.68	125	25.43	
12/12/2014	UC-4, 8, 15, 17 TS, 52 TS, 64		5	5	14.18	140	30	
13/12/2014	UC-4, 8, 15, 17 TS, 52 TS, 64		5	5	12.7	150	34.7	
<b>Total</b>			<b>25</b>	<b>25</b>	<b>63.46</b>	<b>699.7</b>	<b>143.51</b>	
<b>Average</b>			<b>5</b>	<b>5</b>	<b>12.69</b>	<b>139.94</b>	<b>28.70</b>	

Survey Date	Collection Area	Vehicle No./Type of Vehicle	Number of Trips	Numbers of Collection Points	Waste Handling Amount (ton/day)	Milage (km)	Fuel Consumption (liters)	
9/12/2014	UC-15, 17, 18, 19	MB-02, Arm Roll Truck	4	4	9.84	145	22	
10/12/2014	UC-15, 17, 18, 19		4	4	9.08	144.9	24	
11/12/2014	UC-15, 17, 18, 19		4	4	8.7	135	27	
12/12/2014	UC-15, 17, 18, 19		4	4	12.38	136	32	
13/12/2014	UC-15, 17, 18, 19		4	4	9.46	140	30.5	
<b>Total</b>			<b>20</b>	<b>20</b>	<b>49.46</b>	<b>700.9</b>	<b>135.5</b>	
<b>Average</b>			<b>4</b>	<b>4</b>	<b>9.89</b>	<b>140.18</b>	<b>27.1</b>	

Survey Date	Collection Area	Vehicle No./Type of Vehicle	Number of Trips	Numbers of Collection Points	Waste Handling Amount (ton/day)	Milage (km)	Fuel Consumption (liters)
15/12/2014	UC-40	Holland-2, Tractor Trolley	2	231	2.74	56.3	11.47
16/12/2014	UC-40		2	345	3.3	60.4	19.91
17/12/2014	UC-40		2	213	3.66	58.3	16.52
18/12/2014	UC-40		1	257	2.1	33.1	11.98
20/12/2014	UC-40		1	263	1.98	33.7	11.98
<b>Total</b>			<b>8</b>	<b>1309</b>	<b>13.78</b>	<b>241.8</b>	<b>71.86</b>
<b>Average</b>			<b>1.6</b>	<b>261.8</b>	<b>2.76</b>	<b>48.36</b>	<b>14.37</b>

Survey Date	Collection Area	Vehicle No./Type of Vehicle	Number of Trips	Numbers of Collection Points	Waste Handling Amount (ton/day)	Milage (km)	Fuel Consumption (liters)
15/12/2014	UC-46,35	Holland-1, Tractor Trolley	2	269	3.66	60.4	14
16/12/2014	UC-46,35		2	470	5.68	52.4	11
17/12/2014	UC-46,35		2	206	3.98	67.7	17
23/12/2014	UC-46,35		2	175	5.1	50.2	13
24/12/2014	UC-46,35		1	184	2.8	32.7	17
<b>Total</b>			<b>9</b>	<b>1304</b>	<b>21.22</b>	<b>263.4</b>	<b>72</b>
<b>Average</b>			<b>1.8</b>	<b>260.8</b>	<b>4.24</b>	<b>52.68</b>	<b>14.4</b>

Survey Date	Collection Area	Vehicle No./Type of Vehicle	Number of Trips	Numbers of Collection Points	Waste Handling Amount (ton/day)	Milage (km)	Fuel Consumption (liters)
9/12/2014	UC-39	GAJ-74, Mini Dumper	6	350	2.7	91.3	8.5
10/12/2014	UC-39		5	477	2.25	34.7	7.79
11/12/2014	UC-39		5	361	2.25	34.4	8.5
12/12/2014	UC-39		5	561	2.25	35.3	9.1
13/12/2014	UC-39		4	527	1.8	33.2	9.55
<b>Total</b>			<b>25</b>	<b>2276</b>	<b>11.25</b>	<b>228.9</b>	<b>43.44</b>
<b>Average</b>			<b>5</b>	<b>455.2</b>	<b>2.25</b>	<b>45.78</b>	<b>8.69</b>

Survey Date	Collection Area	Vehicle No./Type of Vehicle	Number of Trips	Numbers of Collection Points	Waste Handling Amount (ton/day)	Milage (km)	Fuel Consumption (liters)	
9/12/2014	UC-19	GAJ-60, Mini Dumper	8	507	3.6	70	9	
10/12/2014	UC-19		6	331	2.7	52	10.36	
11/12/2014	UC-19		5	403	2.25	49.4	9.54	
12/12/2014	UC-19		5	404	2.25	43.5	9.65	
13/12/2014	UC-19		5	341	2.25	45.9	9.27	
<b>Total</b>			<b>29</b>	<b>1986</b>	<b>13.05</b>	<b>260.8</b>	<b>47.82</b>	
<b>Average</b>			<b>5.8</b>	<b>397.2</b>	<b>2.61</b>	<b>52.16</b>	<b>9.56</b>	

**2. 5-Days Summary of Waste Handling Amount, Number of Trips, Milage and Fuel consumption for Each Vehicle**

Type of Vehicle	Collection Area	Vehicle No.	Average Number of Trips	Average Number of Collection Points	Average Waste Handling Amount (ton/day)	Average Milage (km)	Average Fuel Consumption (liters)
<b>Arm-Roll Truck</b>	UC-26, 27, 28 & 29 (High Income Area)	Hino-11	4.2	4.2	10.6	164	50.2
	UC-6, 17 TS, 56, 60, 61, 62 (Middle Income Area)	Hino-09	5	5	15.03	132.94	33.52
	UC-4, 8, 15, 17 TS, 52 TS, 64 (Middle Income Area)	GAG-1196	5	5	12.69	139.94	28.70
	UC-15, 17, 18 & 19 (Low Income Area)	MB-02	4	4	9.89	140.18	27.1
<b>Average</b>			<b>4.55</b>	<b>4.55</b>	<b>12.05</b>	<b>144.27</b>	<b>34.88</b>
<b>Tractor Trolley</b>	UC-40 (Middle Income Area)	Holland-2	1.6	261.8	2.76	48.36	14.37
	UC-46 & 35 (Low Income Area)	Holland-1	1.8	260.8	4.24	52.68	14.4
<b>Average</b>			<b>1.7</b>	<b>261.3</b>	<b>3.5</b>	<b>50.52</b>	<b>14.39</b>
<b>Mini Dumper</b>	UC-39 (Middle Income Area)	GAJ-74	5	455.2	2.25	45.78	8.69
	UC-19 (Low Income Area)	GAJ-60	5.8	397.2	2.61	52.16	9.56
<b>Average</b>			<b>5.4</b>	<b>426.2</b>	<b>2.43</b>	<b>48.97</b>	<b>9.13</b>

**3. Loading, Unloading and Travel Time of Each Vehicle**

Item	Vehicle No./Type of Vehicle	Day1	Day2	Day3	Day4	Day5	Average
Loading Time (h:min)	Hino-11, Arm Roll Truck	0:48	0:18	0:17	0:33	0:32	<b>0:29</b>
Travel Time (h:min)		7:36	5:12	4:39	5:35	6:17	<b>5:51</b>
Unloading Time (h:min)		0:34	0:35	0:25	1:06	0:27	<b>0:37</b>
Total		<b>8:58</b>	<b>6:05</b>	<b>5:21</b>	<b>7:14</b>	<b>7:16</b>	<b>6:58</b>

Item	Vehicle No./Type of Vehicle	Day1	Day2	Day3	Day4	Day5	Average
Loading Time (h:min)	Hino-9, Arm Roll Truck	0:35	0:59	0:39	0:34	0:39	<b>0:41</b>
Travel Time (h:min)		8:29	6:21	7:03	6:02	6:15	<b>6:50</b>
Unloading Time(h:min)		0:35	0:33	0:47	0:30	0:35	<b>0:36</b>
Total		<b>9:39</b>	<b>7:53</b>	<b>8:29</b>	<b>7:06</b>	<b>7:29</b>	<b>8:07</b>

Item	Vehicle No./Type of Vehicle	Day1	Day2	Day3	Day4	Day5	Average
Loading Time (h:min)	GAJ-1196, Arm Roll Truck	0:39	1:13	0:53	0:31	0:49	<b>0:49</b>
Travel Time (h:min)		6:51	5:16	5:20	5:32	6:58	<b>5:59</b>
Unloading Time (h:min)		0:39	1:30	0:31	0:57	0:31	<b>0:49</b>
Total		<b>8:09</b>	<b>7:59</b>	<b>6:44</b>	<b>7:00</b>	<b>8:18</b>	<b>7:38</b>

Item	Vehicle No./Type of Vehicle	Day1	Day2	Day3	Day4	Day5	Average
Loading Time (h:min)	MB-02, Arm Roll Truck	0:47	0:34	0:56	0:43	0:36	<b>0:43</b>
Travel Time (h:min)		5:39	5:49	5:49	5:31	5:30	<b>5:39</b>
Unloading Time (h:min)		0:32	0:47	0:32	0:43	0:36	<b>0:38</b>
Total		<b>6:58</b>	<b>7:10</b>	<b>7:17</b>	<b>6:57</b>	<b>6:42</b>	<b>7:00</b>

Item	Vehicle No./Type of Vehicle	Day1	Day2	Day3	Day4	Day5	Average
Loading Time (h:min)	Holland-2, Tractor Trolley	2:17	3:50	2:55	2:55	3:01	<b>2:59</b>
Travel Time (h:min)		5:25	4:45	4:45	2:49	2:29	<b>4:02</b>
Unloading Time (h:min)		0:06	0:07	0:12	0:04	0:04	<b>0:06</b>
Total		<b>7:48</b>	<b>8:42</b>	<b>7:52</b>	<b>5:48</b>	<b>5:34</b>	<b>7:07</b>

Item	Vehicle No./Type of Vehicle	Day1	Day2	Day3	Day4	Day5	Average
Loading Time (h:min)	Holland-1, Tractor Trolley	4:09	4:02	4:01	2:50	2:19	<b>3:28</b>
Travel Time (h:min)		5:41	4:50	5:45	3:58	3:47	<b>4:48</b>
Unloading Time (h:min)		0:14	0:11	0:20	0:27	0:18	<b>0:18</b>
Total		<b>10:04</b>	<b>9:03</b>	<b>10:06</b>	<b>7:15</b>	<b>6:24</b>	<b>8:34</b>

Item	Vehicle No./Type of Vehicle	Day1	Day2	Day3	Day4	Day5	Average
Loading Time (h:min)	GAJ-74, Mini Dumper	3:35	4:57	4:04	4:24	4:40	<b>4:20</b>
Travel Time (h:min)		4:18	3:02	3:44	3:28	3:20	<b>3:34</b>
Unloading Time (h:min)		0:33	0:35	0:30	0:28	0:27	<b>0:31</b>
Total		<b>8:26</b>	<b>8:34</b>	<b>8:18</b>	<b>8:20</b>	<b>8:27</b>	<b>8:25</b>

Item	Vehicle No./Type of Vehicle	Day1	Day2	Day3	Day4	Day5	Average
Loading Time (h:min)	GAJ-60, Mini Dumper	6:16	5:06	5:09	4:33	4:17	<b>5:04</b>
Travel Time (h:min)		4:29	3:36	4:25	4:26	4:17	<b>4:14</b>
Unloading Time (h:min)		0:35	0:24	0:30	0:27	0:41	<b>0:31</b>
Total		<b>11:20</b>	<b>9:06</b>	<b>10:04</b>	<b>9:26</b>	<b>9:15</b>	<b>9:50</b>



#### 4. 5-Days Summary of Loading, Unloading and Travel Time for Each Vehicle

Type of Vehicle	Collection Area	Vehicle No.	Loading Time (h:min)	Travel Time (h:min)	Un-Loading Time (h:min)	Total (h:min)
<b>Arm-Roll Truck</b>	UC-26, 27, 28 & 29 (High Income Area)	Hino-11	0:29	5:51	0:37	6:58
	UC-6, 17 TS, 56, 60, 61, 62 (Middle Income Area)	Hino-09	0:41	6:50	0:36	8:07
	UC-4, 8, 15, 17 TS, 52 TS, 64 (Middle Income Area)	GAG-1196	0:49	5:59	0:49	7:38
	UC-15, 17, 18 & 19 (Low Income Area)	MB-02	0:43	5:39	0:38	7:00
<b>Average</b>			<b>0:40</b>	<b>6:04</b>	<b>0:40</b>	<b>7:25</b>
<b>Tractor Trolley</b>	UC-40 (Middle Income Area)	Holland-2	2:58	4:02	0:06	7:08
	UC-46 & 35 (Low Income Area)	Holland-1	3:28	4:48	0:18	8:34
<b>Average</b>			<b>3:13</b>	<b>4:25</b>	<b>0:12</b>	<b>7:51</b>
<b>Mini Dumper</b>	UC-39 (Middle Income Area)	GAJ-74	4:20	3:34	0:31	8:25
	UC-19 (Low Income Area)	GAJ-60	5:04	4:14	0:31	9:50
<b>Average</b>			<b>4:42</b>	<b>3:54</b>	<b>0:31</b>	<b>9:07</b>

**5. Waste Handling Amount and Working Time on Each Vehicle**

Particulars	Vehicle No./Type of Vehicle	Day 1	Day 2	Day 3	Day 4	Day 5	Average
Waste Handling Amount (ton)	<b>Hino-11, Arm Roll Truck</b>	11.62	9.38	6.68	10.92	14.38	<b>10.6</b>
Milage (km)		196	152.1	123	151.1	197.8	<b>164</b>
Loading Time (min)		48	18	17	33	32	<b>29.6</b>
Travel Time (min)		456	312	279	335	377	<b>351.8</b>
Unloading Time (min)		34	35	25	66	27	<b>37.4</b>
Total Time (min)		538	365	321	434	436	<b>418.9</b>
Total Fuel Consumed (liters)		53	53	38	51	56	<b>50.2</b>
Waste Amount Handled per:							
Loading Time (kg/hr)		14,525.00	31,266.67	23,576.47	19,854.55	26,962.50	<b>21478.4</b>
Transportation Time (kg/hr)		1,528.95	1,803.85	1,436.56	1,955.82	2,288.59	<b>1807.2</b>
Total Time (kg/hr)		1295.91	1541.92	1248.60	1509.68	1978.90	<b>1518.1</b>
Milage Covered (kg/km)		59.3	61.7	54.3	72.3	72.7	<b>64.6</b>
Fuel Consumed (kg/liter)		219.2	177	175.8	214.1	256.8	<b>211.2</b>

Particulars	Vehicle No./Type of Vehicle	Day 1	Day 2	Day 3	Day 4	Day 5	Average
Waste Handling Amount (ton)	<b>Hino-09, Arm Roll Truck</b>	12.88	12.64	15.26	14.68	19.7	<b>15.03</b>
Milage (km)		115.3	145.5	135.8	138.3	129.8	<b>132.94</b>
Loading Time (min)		35	59	39	34	39	<b>41.2</b>
Travel Time (min)		509	381	423	362	375	<b>410</b>
Unloading Time (min)		35	33	47	30	35	<b>36</b>
Total Time (min)		579	473	509	426	449	<b>487.2</b>
Total Fuel Consumed (liters)		25	31	37.31	37.28	37	<b>33.52</b>
Waste Amount Handled per:							
Loading Time (kg/hr)		22,080	12,854.24	23,476.92	25,905.88	30,307.69	<b>21891.26</b>
Transportation Time (kg/hr)		1,518.27	1,990.55	2,164.54	2,433.15	3,152.00	<b>2199.80</b>
Total Time (kg/hr)		1334.72	1603.38	1798.82	2067.61	2632.52	<b>1851.23</b>
Milage Covered (kg/km)		111.7	86.9	112.4	106.1	151.8	<b>113.1</b>
Fuel Consumed (kg/liter)		515.2	407.7	409	393.8	532.4	<b>448.4</b>

Particulars	Vehicle No./Type of Vehicle	Day 1	Day 2	Day 3	Day 4	Day 5	Average
Waste Handling Amount (ton)	GAG-1196, Arm Roll Truck	11.12	12.78	12.68	14.18	12.7	<b>12.69</b>
Milage (km)		149.7	135	125	140	150	<b>139.94</b>
Loading Time (min)		39	73	53	31	49	<b>49</b>
Travel Time (min)		414	316	320	332	418	<b>360</b>
Unloading Time (min)		39	90	31	57	31	<b>49.6</b>
Total Time (min)		492	479	404	420	498	<b>458.6</b>
Total Fuel Consumed (liters)		26	27.38	25.43	30	34.7	<b>28.70</b>
Waste Amount Handled per:							
Loading Time (kg/hr)		17,107.69	10,504.11	14,354.72	27,445.16	15,551.02	<b>15541.22</b>
Transportation Time (kg/hr)		1,611.59	2,426.58	2,377.50	2,562.65	1,822.97	<b>2115.33</b>
Total Time (kg/hr)		1356.10	1600.84	1883.17	2025.71	1530.12	<b>1660.53</b>
Milage Covered (kg/km)		74.3	94.7	101.4	101.3	84.7	<b>90.7</b>
Fuel Consumed (kg/liter)		427.7	466.8	498.6	472.7	366	<b>442.2</b>

Particulars	Vehicle No./Type of Vehicle	Day 1	Day 2	Day 3	Day 4	Day 5	Average
Waste Handling Amount (ton)	MB-02, Arm Roll Truck	9.84	9.08	8.7	12.38	9.46	<b>9.89</b>
Milage (km)		145	144.9	135	136	140	<b>140.18</b>
Loading Time (min)		47	34	56	43	36	<b>43.2</b>
Travel Time (min)		339	349	349	331	330	<b>339.6</b>
Unloading Time (min)		32	47	32	43	36	<b>38</b>
Total Time (min)		418	430	437	417	402	<b>420.8</b>
Total Fuel Consumed (liters)		22	24	27	32	30.5	<b>27.1</b>
Waste Amount Handled per:							
Loading Time (kg/hr)		12,561.70	16,023.53	9,321.43	17,274.42	15,766.67	<b>13738.89</b>
Transportation Time (kg/hr)		1,741.59	1,561.03	1,495.70	2,244.11	1,720	<b>1747.70</b>
Total Time (kg/hr)		1412.44	1266.98	1194.51	1781.29	1411.94	<b>1410.46</b>
Milage Covered (kg/km)		67.9	62.7	64.4	91	67.6	<b>70.6</b>
Fuel Consumed (kg/liter)		447.3	378.3	322.2	386.9	310.2	<b>364.9</b>

Particulars	Vehicle No./Type of Vehicle	Day 1	Day 2	Day 3	Day 4	Day 5	Average
Waste Handling Amount (ton)	<b>Holland-2, Tractor Trolley</b>	2.74	3.3	3.66	2.1	1.98	<b>2.76</b>
Milage (km)		56.3	60.4	58.3	33.1	33.1	<b>48.24</b>
Loading Time (min)		137	230	175	175	181	<b>179.6</b>
Travel Time (min)		325	285	285	169	149	<b>242.6</b>
Unloading Time (min)		6	7	12	4	4	<b>6.6</b>
Total Time (min)		468	522	472	348	334	<b>428.8</b>
Total Fuel Consumed (liters)		11.47	19.91	16.52	11.3	11.98	<b>14.24</b>
Waste Amount Handled per:							
Loading Time (kg/hr)		1,200	860.86	1254.8	720	656.35	<b>920.71</b>
Transportation Time (kg/hr)		505.84	694.73	770.52	745.56	797.13	<b>681.61</b>
Total Time (kg/hr)		351.28	379.31	465.25	362	355.68	<b>385.63</b>
Milage Covered (kg/km)		48.7	54.6	62.8	63.4	59.8	<b>57.2</b>
Fuel Consumed (kg/liter)		238.9	165.7	221.5	185.8	165.3	<b>193.8</b>

Particulars	Vehicle No./Type of Vehicle	Day 1	Day 2	Day 3	Day 4	Day 5	Average
Waste Handling Amount (ton)	<b>Holland-1, Tractor Trolley</b>	3.66	5.68	3.98	5.1	2.8	<b>4.24</b>
Milage (km)		60.4	52.4	67.7	50.2	32.7	<b>52.68</b>
Loading Time (min)		249	242	241	170	139	<b>208.2</b>
Travel Time (min)		341	290	345	238	227	<b>288.2</b>
Unloading Time (min)		14	11	20	27	18	<b>18</b>
Total Time (min)		604	543	606	435	384	<b>514.4</b>
Total Fuel Consumed (liters)		14	11	17	13	17	<b>14.4</b>
Waste Amount Handled per:							
Loading Time (kg/hr)		881.93	1,408.26	990.87	1800	1208.63	<b>1223.05</b>
Transportation Time (kg/hr)		643.99	1,175.17	692.17	1,285.71	740.09	<b>883.55</b>
Total Time (kg/hr)		363.58	627.62	394.06	703.45	437.50	<b>495.02</b>
Milage Covered (kg/km)		60.6	108.4	58.8	101.6	85.6	<b>80.5</b>
Fuel Consumed (kg/liter)		261.4	516.4	234.1	392.3	164.7	<b>294.4</b>

Particulars	Vehicle No./Type of Vehicle	Day 1	Day 2	Day 3	Day 4	Day 5	Average
Waste Handling Amount (ton)	GAJ-74, Mini Dumper	2.7	2.25	2.25	2.25	1.8	2.25
Milage (km)		91.3	34.7	34.4	35.3	33.2	45.78
Loading Time (min)		215	297	244	264	280	260
Travel Time (min)		258	182	224	208	200	214.4
Unloading Time (min)		33	35	30	28	27	30.6
Total Time (min)		506	514	498	500	507	505
Total Fuel Consumed (liters)		8.5	7.8	8.5	9.1	9.6	8.7
Waste Amount Handled per:							
Loading Time (kg/hr)		753.49	454.54	553.27	511.36	385.71	519.23
Transportation Time (kg/hr)		627.90	741.75	602.67	649.03	540	629.66
Total Time (kg/hr)		320.16	262.64	271.08	270	213.02	267.32
Milage Covered (kg/km)		29.6	64.8	65.4	63.7	54.2	49.14
Fuel Consumed (kg/liter)		317.6	288.5	264.7	247.3	187.5	258.6

Particulars	Vehicle No./Type of Vehicle	Day 1	Day 2	Day 3	Day 4	Day 5	Average
Waste Handling Amount (ton)	GAJ-60, Mini Dumper	3.6	2.7	2.25	2.25	2.25	2.61
Milage (km)		70	52	49.4	43.5	45.9	52.16
Loading Time (min)		376	306	309	273	257	304.2
Travel Time (min)		269	216	265	266	257	254.6
Unloading Time (min)		35	24	30	27	41	31.4
Total Time (min)		680	546	604	566	555	590.2
Total Fuel Consumed (liters)		9	10.36	9.54	9.65	9.27	9.56
Waste Amount Handled per:							
Loading Time (kg/hr)		574.47	529.41	436.89	494.51	525.29	514.79
Transportation Time (kg/hr)		802.97	750.00	509.43	507.52	525.29	615.08
Total Time (kg/hr)		317.65	296.70	223.51	238.52	243.24	265.33
Milage Covered (kg/km)		51.4	51.9	45.5	51.7	49	50
Fuel Consumed (kg/liter)		400	260.6	235.8	233	242.7	273

## 6. Waste Amount Handled and Carrying Capacity

Particulars	Arm Roll Truck				Average
	Hino-11	Hino-09	GAG-1196	MB-02	
Waste Handling Amount (ton)	10.6	15.03	12.69	9.89	<b>12.05</b>
Milage (km)	164	132.94	139.94	140.18	<b>144.27</b>
Loading Time (min)	29.6	41.2	49	43.2	<b>40.75</b>
Travel Time (min)	351.8	410	360	339.6	<b>365.35</b>
Unloading Time (min)	37.4	36	49.6	38	<b>40.25</b>
Total Time (min)	418.85	487.2	458.6	420.8	<b>446.36</b>
Total Fuel Consumed (liters)	50.2	33.518	28.7	27.1	<b>34.88</b>
Waste Amount Handled per:					
Loading Time (kg/hr)	21478.38	21891.26	15541.22	13738.89	<b>17745.28</b>
Transportation Time (kg/hr)	1807.16	2199.80	2115.33	1747.70	<b>1979.25</b>
Total Time (kg/hr)	1518.05	1851.23	1660.53	1410.46	<b>1620</b>
Milage Covered (kg/km)	64.6	113.1	90.7	70.6	<b>83.5</b>
Fuel Consumed (kg/liter)	211.2	448.4	442.2	364.9	<b>345.4</b>

Particulars	Tractor Trolley		Average
	Holland-2	Holland-1	
Waste Handling Amount (ton)	2.76	4.24	<b>3.502</b>
Milage (km)	48.24	52.68	<b>50.46</b>
Loading Time (min)	179.6	208.2	<b>193.9</b>
Travel Time (min)	242.6	288.2	<b>265.4</b>
Unloading Time (min)	6.6	18	<b>12.3</b>
Total Time (min)	428.8	514.4	<b>471.6</b>
Total Fuel Consumed (liters)	14.24	14.4	<b>14.32</b>
Waste Amount Handled per:			
Loading Time (kg/hr)	920.71	1223.05	<b>1,083.65</b>
Transportation Time (kg/hr)	681.61	883.55	<b>791.71</b>
Total Time (kg/hr)	385.63	495.02	<b>445.55</b>
Milage Covered (kg/km)	57.2	80.5	<b>69.4</b>
Fuel Consumed (kg/liter)	193.8	294.4	<b>245</b>

Particulars	Mini Dumper		Average
	GAJ-74	GAJ-60	
Waste Handling Amount (ton)	2.25	2.61	2.43
Milage (km)	45.78	52.16	48.97
Loading Time (min)	260	304.2	282.1
Travel Time (min)	214.4	254.6	234.5
Unloading Time (min)	30.6	31.4	31
Total Time (min)	505	590.2	547.6
Total Fuel Consumed (liters)	8.7	9.56	9.13
Waste Amount Handled per:			
Loading Time (kg/hr)	519.23	514.79	516.84
Transportation Time (kg/hr)	629.66	615.08	621.75
Total Time (kg/hr)	267.32	265.33	266.25
Milage Covered (kg/km)	49.14	50	49.6
Fuel Consumed (kg/liter)	258.6	273	266

### 7. Summary of Waste Handling Amount and Carrying Capacity

Vehicle Type		Milage Covered during Loading the Waste (km)						Average Waste Handling Amount (ton)	Waste Collected Amount per Milage Covered during Loading (kg/km)
		Day-1	Day-2	Day-3	Day-4	Day-5	Average		
Tractor Trolley	Holland-2	4.6	6	4.3	4.1	4.3	4.7	2.76	587.2
	Holland-1	3	3.2	4	2.2	3.7	3.2	4.24	1325
Average		3.8	4.6	4.2	3.2	4	4.0	3.502	886.6
Mini Dumper	GAJ-74	7	6.3	5.7	7.3	6	6.5	2.25	346.2
	GAJ-60	11.2	7.4	6	3.9	3.3	6.4	2.61	407.8
Average		9.1	6.9	5.9	5.6	4.7	6.5	2.43	376.7

Vehicle Type		Milage Covered during Transportation of Waste (km)						Average Waste Handling Amount (ton)	Waste Transported Amount per Milage Covered during transportation (kg/km)
		Day-1	Day-2	Day-3	Day-4	Day-5	Average		
Tractor Trolley	Holland-2	51.7	54.4	54	29	28.5	43.5	2.76	63.4
	Holland-1	57.4	49.2	63.7	48	29	49.5	4.24	85.7
Average		54.6	51.8	58.9	38.5	28.8	46.5	3.502	75.3
Arm Roll Truck	Hino-11	196	152.1	123	151.1	197.8	164	10.6	64.6
	Hino-09	115.3	145.5	135.8	138.3	129.8	132.9	15.03	113.1
	GAG-1196	149.7	135	125	140	150	139.9	12.69	90.7
	MB-02	145	144.9	135	136	140	140.2	9.89	70.6
Average		151.5	144.4	129.7	141.4	154.4	144.3	12.05	83.5



Objective	Vehicle Type		
	Arm Roll Truck	Tractor Trolley	Mini Dumper
Average Waste Collected Amount (kg)	12050	3502	2430
Average Mileage (km)	144.27	50.46	48.97
Average Fuel Consumed (liters)	34.88	14.32	9.13
Average Loading Time (minutes)	40.75	193.9	282.1
Average Unloading Time (minutes)	42	12	31
Average Transportation Time (minutes)	365.35	265.4	234.5
Average Total Time (minutes)	446.36	471.6	547.6
Average Milage per Unit Fuel Consumption (km/liter)	4.1	3.4	5.4
Average Waste Handling Amount per unit Distance (kg/km)	84	69	50
Average Waste Handling Amount per Loading Time (kg/hr)	17745.28	1083.65	516.84
Average Waste Handling Amount per Travelling Time (kg/hr)	1979.25	791.71	621.75
Average Waste Handling Amount per Total Time (kg/hr)	1620	445.55	266.25
Average Waste Handling Amount per Unit Fuel Consumption (kg/liter)	345	245	266



Figure 1: MB-02, Loading the Container in UC-19



Figure 2: MB-02, Unloading the Container at Gondlanwala



Figure 3: Hino-11, Loading the Container from UC-26



Figure 4: Hino-11, Condition of Container Location at Behari Colony in UC-27



Figure 5: Repairing Fan Belt of Hino-11



Figure 6: Dumping During Heavy Fog



Figure 13: GAJ-1196, Loading of Waste from Qadri Darbar (TS)



Figure 14: Waste Picker Segregating Recyclables in UC-46 from TT-9774



Figure 15: TT-9774,Collecting the Waste from a bigger Heap near Container in UC-35



Figure 16: Engine Struck-out of TT-9774



Figure 17: Holland-1, Loading a Regular Heap in UC-46



Figure 86: Condition of Holland-1 during Loading



Figure 19: Hand Cart unloaded in Holland-1, UC-46



Figure 20: Holland-1, Loading from a Street having drainage Problem



Figure 21: Waiting for Holland-1 in UC-46



Figure 22: Traffic Congestion due to Holland-1 in UC-46



Figure 23: Holland-2, Loading of Waste from a Regular Heap in UC-40



Figure 24: Holland-2, Loading of Waste from Mubarak Shah Road in UC-40



Figure 25: Holland-2, Collecting Waste from a Narrow Street in UC-40



Figure 26: Holland-2, During Transportation



Figure 27: Holland-2, Dumping the Waste at Gondlanwala



Figure 28: GAI-74, Collecting the Waste from Jinnah Road in UC-39



Figure 29: GAI-74, Collecting the Waste from a Street in UC-39



Figure 30: GAI-74, Unloading the Waste at Qadri Darbar



Figure 31: Driver Inspecting his Vehicle after Parking



Figure 32: GAJ-60, Loader Collecting the Waste from Masoom Shah Bazar in UC-19



Figure 33: GAJ-60, Loading a Regular Heap from Church Bazar in UC-19



Figure 34: GAJ-60 during Transportation



Figure 35: GAJ-60 Unloading the Waste directly into Container at Sabri Chowk (TS)