

## **Job Demands Analysis – Container Truck driver**

### **Purpose**

The container truck driver is responsible for pick up, drop off and dumping of containers of waste material from various sites around the city. Containers may be full of recyclable material, dirt/debris, demolition materials or other material.

### **Essential Duties**

The container truck driver has 2 essential duties:

	<b><u>% of shift</u></b>
Duty #1 – Driving	75%
Duty #2 – Load, unload and dump containers	25%

### **Description of Non-essential Tasks**

The container truck driver may be required to perform other work tasks on an occasional basis. Examples of the tasks that may be performed are:

- Answering questions from the public
- Keeping truck clean

### **Summary of Demands**

	Sedentary	Light	Medium	Heavy	Very Heavy	Comments
<b>Physical (strength)</b>			✓			Lifting demands
<b>Physical (endurance)</b>		✓				Stand/walk for up to 25% of shift
<b>Cognitive</b>			✓			Based on driving requirements

### **Shift Structure**

Container truck drivers work from 7am – 3:30pm. There is a 30 minute lunch break and two 10 minute coffee breaks. Breaks can be taken at any time during the shift. At present there is only 1 container truck driver employed by the city and 2 container trucks (only one is in use at any given time).

**Frequency Rating Definitions**

The frequency rating definitions used in the Summary Table are from the Dictionary of Occupational Titles (DOT, 1991, 4th edition) published by the US Department of Labor. A similar classification is used for each Essential Duty, but the percentages are changed to reflect % of Duty rather than % of shift.

	<b>Time per Day</b>	<b>Percentage of Shift</b>
<b>Never</b>	0 minutes	0 %
<b>Rare</b>	0 - 5 minutes	0-1 %
<b>Infrequent</b>	6 - 25 minutes	2-5 %
<b>Occasional</b>	26 minutes – 2.5 hours	6-33 %
<b>Frequent</b>	2.6 - 5.25 hours	34-66 %
<b>Constant</b>	5.26 - 8 hours	67-100 %

<b>STRENGTH</b>	
<b>Strength Category</b>	<b>Weight Handled</b>
1. Limited	Up to 5 kg.
2. Light	5 kg. to 10 kg.
3. Medium	10 kg. to 20 kg.
4. Heavy	>20 kg

### Job Demands Analysis – Container Truck Driver - Summary Table

a. Physical Demands		Frequency During Shift					Weight		Comments	
		Never	Rare	Infrequent	Occasional	Frequent	Constant	Usual (kg)		Max (kg)
Strength	Lifting – Floor to Knuckle		x					1-2	20	D2-Spill over from container, hook, shovelling
	Lifting – Knuckle to Waist		x					1-2	20	D2-Spill over from container, hook, shovelling
	Lifting – Over Shoulder	x								
	Carrying – with Handles	x								
	Carrying – without Handles		x					1-2	3	D2-Shovel, spilled debris
	Pushing – Upper Extremity			x				10	20	D2-Closing container doors
	Pushing – Hips/Legs assist		x					5	45	D2-Shovelling, closing stuck doors
	Pulling – Upper Extremity			x				10	20	D2-Opening container doors
	Pulling – Hip/Leg Assist		x					20	35	D2-Opening stuck container doors
Mobility	Reach - Shoulder or Above			x						D1,2-Opening/closing container doors, pre-trip, climb in/out of truck
	Reach - Below Shoulder			x						D1,2-Shovelling, adjusting seat controls, picking up debris or shovelling
	Handling						x			D1,2-Steering wheel, controls, hook, containers
	Fine finger movements	x								
	Neck - Static Flexion	x								
	Neck – Static Neutral					x				D1-Driving
	Neck – Static Extension	x								
	Neck – Static Rotation		x							D2-Look in mirrors to monitor load or dump
	Throwing		x							D2-Throw debris into container
	Sitting					x				D1-Driving
	Standing				x					D1,2-Pre-trip, load/unload containers, chain up
	Walking				x					D1,2-Pre-trip, load/unload/dump containers
	Running/Jumping	x								
	Climbing		x							D1,2-In/out of truck, rarely into back of truck if something stuck in there.
	Bending/Stooping			x						D1,2-Pre-trip, (un)chaining, (un) hook
	Crouching		x							
	Kneeling	x								
	Crawling	x								
	Twisting			x						D2-Load/unload/hook up, twist to see when dumping/loading from in cab
Balancing		x							D1,2-Climb in/out of truck, onto truck to grease rails	
Travelling					x				D1-Driving	

**Job Demands Analysis – Truck driver: Summary Table (continued)**

a. Physical Demands (continued)		Frequency During Shift						Comments
		N	R	I	O	F	C	
Sensory / Perception	Hear/Conversations			x				D1,2-With workers at pickup & dump areas, co-workers on radio/phone, scale operator
	Hear/Other Sounds						x	D1,2-Vehicles, pedestrians, alarms, other workers
	Vision/Far					x		D1-Driving
	Vision/Near						x	D1,2-Driving and load/unload/dumping
	Vision/Colour					x		D1-Driving demands
	Vision/Depth						x	D1,2-Driving, load/unload/dump
	Perception/Spatial				x			D1,2-Checking mirrors when driving/dumping/loading
	Perception/Form		x					D1-Watching for obstacles in poor visibility conditions
	Feeling	x						
	Speech			x				D1,2-With workers at pickup & dump areas, co-workers by phone/radio, scale operator
Work Environment	Inside Work					x		D1,2-Inside vehicle
	Outside Work				x			D2-Load/Unload/Dump, shovelling
	Slippery			x				D1,2-Outside in snowy weather, wet and slippery road conditions
	Congested worksite				x			D1,2-Depends on traffic, time of day, business at dump sites
	Chemical Irritants		x					D2-If pick up contaminated material
	Confined Space Entry	x						
	Vapour Fumes		x					D2-If items in container release fumes
	Noise						x	D1,2-Dump sites, vehicle noise, load controls
	Proximity to moving objects						x	D1,2-Vehicles and other machinery on the roads and at pick/up and dump sites
	Hazardous Machines	x						
	Electrical hazard	x						
	Sharp Tools	x						
	Radiant/Thermal Energy	x						
	Hot/Cold		x					D2-Extremes are rare and weather dependent
	Humid		x					D2-Extremes are rare and weather dependent
	Environmental Dust		x					D2-If near a dusty pick up site
	Organic Substances		x					D2-Shovelling material spilled around container
	Medical Waste	x						
	Blood Products	x						
	Lighting Issues – Direct		x					D1,2-Dark early mornings in winter
	Lighting Issues – Indirect	x						
	Vibration – Whole Body					x		D1-Driving
	Vibration – Hand/Arm	x						

**Job Demands Analysis – Truck driver: Summary Table (continued)**

b. Cognitive and Psychosocial Demands	Frequency During Shift			Comments
	Never / Rare	Infrequent / Occasional	Frequent / Constant	
Degree of Supervision	x			
Time Pressure	x			
Attention to Detail		x		D1,2-Lining up with containers, chaining correctly
Memory Requirements		x		D1,2-Code numbers for each load, how to operate scales, driving directions
Interact with co-workers		x		D1,2-At beginning and end of shift, workers at pick up and dump sites, scale workers
Interact with public	x			
Work Alone			x	
Reading			x	D1,2-Maps, street signs, parking signs, log sheet, etc
Writing	x			D1,2-Log sheet, pre/post-trip sheet
Irregular Hours	x			
Operating Equipment			x	D1,2-Truck and container controls

### **Physical Environment**

The work takes place inside container truck cab, outside on city streets and at transfer stations and other dumping locations.

### **Staffing Levels**

The container truck driver works alone.

### **Tools and Equipment Used**

Truck, shovel, wrenches

### **Other Equipment**

The container truck driver must wear steel toed boots, a safety vest and gloves for non-driving work.

### **Data Collection**

Mandy Gallant, an ergonomic consultant from ErgoRisk Management Group conducted the JDA assessment on January 7<sup>th</sup>, 2009. Data was collected using a tape measure, industrial scale, Chatillon push/pull force gauge, digital camera and through observation and discussion with selected employees and the superintendent.

### **Contact for the on-site assessment**

Troy de Graaf, Superintendent of Street Cleaning was the contact for the on-site assessment.

## **Description of Essential Duties**

This section describes the work tasks that comprise the 2 essential duties of the job. Essential Duty Tables 2 and 3 (located at the end of this report) provide the physical, cognitive and psychosocial demands for performing each of the essential duties.

### **Essential Duty 1: Driving**

The container truck driver is required to drive a container truck (Fig. 1) around the city to various pick up, drop off and dumping locations using whatever route he chooses. At times the driver may have to negotiate the truck into tight spaces either around the city or in the yard.

Prior to leaving the yard in the morning the driver performs a pre-trip inspection of the vehicle, checking tires, lights, fluid levels, brakes, windshield wipers and container controls (Fig. 2). If necessary the driver will fill the vehicle with gas either at the beginning or end of the shift. Drivers tend to keep the same truck each day unless a vehicle has to be turned in for maintenance. At the end of the shift a post-trip inspection is performed and a pre/post trip inspection form is completed.



Fig. 1: Driving container truck.

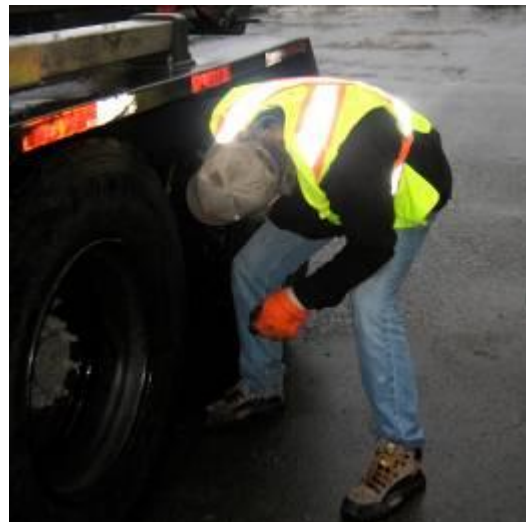


Fig. 2: Bending during pre-trip inspection.

## **Essential Duty 2: Load, Unload and Dump Containers**

The container truck driver's primary responsibility is to pick up and dump loaded containers from various locations around the city and from the city yard. The types of containers vary, contents vary, and dumping locations vary. To pick up a full container, the driver backs the truck up to the container and then gets out to hook up to the container (Fig. 3). Depending on the type of container, hooking it up might require bending and reaching under the end of the container to the hooking bar (Fig. 4).



Fig. 3: Close up of hook and cable.



Fig. 4: Driver reaching under container to hook up.

Once hooked up the driver loads the container either using controls inside the truck cab or the controls outside the cab on the side of the truck (Fig. 5 & 6). Once the container is loaded onto the back of the truck the driver chains up the container (Fig. 7) and drives to the dumping location. Accessing chains and feeding them through under the truck can demand some awkward bending and reaching. Chains are not required if just moving a container around the yard. To perform dumping the driver backs up to the dumping area, opens the rear container doors (Fig. 8) and then tilts up the container with the dump controls either inside the cab or on the outside of the truck. Opening or closing container doors may require some force, especially if there is damage to the container (Fig. 9).





Fig. 5: Load controls on outside of truck.



Fig. 6: Driver loading a container from inside the cab using mirrors and joystick.



Fig. 7: Driver chaining up a container.



Fig. 8: Driver unlatching container door.

When picking up a full container the container truck driver often drops an empty container in its place before leaving to dump the full container. At other times empty containers might be moved around the yard to make room to access the full containers. The process is the same for hooking up full or empty containers, however depending on whether the container has wheels or not, the container may be pulled onto the back of the truck or the truck may be left in neutral and pulled back under the container. The physical demands for the operator are the same in either situation.

At times contents of the container may spill over the side during pick up or movement of the containers. In that case the operator may be required to pick up a piece of debris and put it back in the container, or he may have to perform some shovelling of debris to clear the area before dropping an empty container back into place (Fig. 10). Every few weeks the driver may be required to climb up onto the truck to grease the rails the container slides onto. As well, occasionally a piece of debris is lodged in the container and the driver may have to climb into the container to free it.



Fig. 9: Driver pushing container door closed in transfer station.



Fig. 10: Driver shovelling debris.

### Essential Duty 1: Container Truck Driver - Driving

a. Physical Demands		Frequency During Duty					Weight		Comments
		Never	Rare	Infrequent	Occasional	Frequent	Constant	Usual (kg)	
Strength	Lifting – Floor to Knuckle	x							
	Lifting – Knuckle to Waist	x							
	Lifting – Over Shoulder	x							
	Carrying – with Handles	x							
	Carrying – without Handles	x							
	Pushing – Upper Extremity	x							
	Pushing – Hips/Legs assist	x							
	Pulling – Upper Extremity	x							
	Pulling – Hip/Leg Assist	x							
Mobility	Reach - Shoulder or Above			x					Checking fluids, climbing in/out of truck
	Reach - Below Shoulder		x						Adjust seat controls, checking tires during pre-trip inspection
	Handling						x		Steering wheel, oil dipstick, turn indicator and other truck controls
	Fine finger movements	x							
	Neck – Static Flexion	x							
	Neck – Static Neutral					x			Looking at road ahead
	Neck – Static Extension	x							
	Neck – Static Rotation	x							
	Throwing	x							
	Sitting						x		
	Standing		x						Pre-trip inspection only
	Walking		x						Pre-trip inspection only
	Running/Jumping	x							
	Climbing	x							
	Bending/Stooping		x						Pre-trip inspection only
	Crouching	x							
	Kneeling	x							
	Crawling	x							
	Twisting			x					Shoulder check, getting in/out of vehicle, looking at side mirrors, leaning to controls
	Balancing		x						When climbing in/out of truck
Travelling						x			

### Frequency Rating Definition for % of Duty

The definitions for frequency ratings are contained at the end of the Table (page 13).

**Essential Duty 1: Container Truck Driver – Driving (continued)**

a. Physical Demands (continued)		Frequency During Duty						Comments
		N	R	I	O	F	C	
Sensory / Perception	Hear/Conversations		x					With co-workers or supervisor at beginning and end of day or on cell during day.
	Hear/Other Sounds						x	Traffic noise, sirens, etc
	Vision/Far						x	Driving demands
	Vision/Near						x	Driving demands
	Vision/Colour						x	Driving demands
	Vision/Depth						x	Driving demands
	Perception/Spatial				x			Checking mirrors
	Perception/Form		x					Poor visibility conditions
	Feeling	x						
	Speech		x					With co-workers or supervisor at beginning and end of day or on cell during day.
Work Environment	Inside Work						x	Inside cab of truck
	Outside Work		x					Pre-trip only
	Slippery			x				Depends on road conditions and weather
	Congested worksite				x			Depends on traffic conditions and time of day.
	Chemical Irritants	x						
	Confined Space Entry	x						
	Vapour Fumes			x				Exhaust fumes if windows down when driving
	Noise						x	
	Proximity to moving objects						x	Other vehicles
	Hazardous Machines	x						
	Electrical hazard	x						
	Sharp Tools	x						
	Radiant/Thermal Energy	x						
	Hot/Cold	x						
	Humid	x						
	Environmental Dust		x					If windows down and driving past construction site.
	Organic Substances	x						
	Medical Waste	x						
	Blood Products	x						
	Lighting Issues – Direct		x					Dark mornings in winter, poor weather
Lighting Issues – Indirect	x							
Vibration – Whole Body						x		
Vibration – Hand/Arm	x							

**Essential Duty 1: Container Truck Driver – Driving (continued)**

b. Cognitive and Psychosocial Demands	Frequency During Duty			Comments
	Never / Rare	Infrequent / Occasional	Frequent / Constant	
Degree of Supervision	x			
Time Pressure	x			
Attention to Detail		x		
Memory Requirements		x		Code numbers for each load, how to operate scales, driving directions
Interact with co-workers	x			At beginning and end of shift for few minutes only
Interact with public	x			
Work Alone			x	
Reading			x	Maps, street signs, parking signs, log sheet, etc
Writing	x			Log sheet, pre/post-trip sheet
Irregular Hours	x			
Operating Equipment			x	Container Truck

**Frequency Rating Definitions for % of Duty**

The frequency rating definitions are from the Dictionary of Occupational Titles (DOT, 1991, 4th edition) published by the US Department of Labor.

	Percentage of Duty
<b>Never</b>	0 %
<b>Rare</b>	0-1 %
<b>Infrequent</b>	2-5 %
<b>Occasional</b>	6-33 %
<b>Frequent</b>	34-66 %
<b>Constant</b>	67-100 %

STRENGTH	
Strength Category	Weight Handled
5. Limited	Up to 5 kg.
6. Light	5 kg. to 10 kg.
7. Medium	10 kg. to 20 kg.
8. Heavy	>20 kg

### Essential Duty 2: Container Truck Driver – Load, Unload and Dump Containers

a. Physical Demands		Frequency During Duty					Weight		Comments	
		Never	Rare	Infrequent	Occasional	Frequent	Constant	Usual (kg)		Max (kg)
Strength	Lifting – Floor to Knuckle				x			1-2	20	Spill over from container, hook, shovelling
	Lifting – Knuckle to Waist				x			1-2	20	Spill over from container, hook, shovelling
	Lifting – Over Shoulder	x								
	Carrying – with Handles	x								
	Carrying – without Handles		x					1-2	3	Shovel, spilled debris
	Pushing – Upper Extremity				x			10	20	Closing container doors
	Pushing – Hips/Legs assist		x					5	45	Shovelling, closing stuck doors
	Pulling – Upper Extremity				x			10	20	Opening container doors
	Pulling – Hip/Leg Assist		x					20	35	Opening stuck container doors
Mobility	Reach - Shoulder or Above			x				Opening/closing container doors		
	Reach - Below Shoulder				x			Shovelling, picking up debris or shovelling, hooking up container		
	Handling						x	Chains, controls, hook, container door handles		
	Fine finger movements	x								
	Neck - Static Flexion	x								
	Neck – Static Neutral	x								
	Neck – Static Extension	x								
	Neck – Static Rotation			x				Looking in mirrors to monitor load or dump		
	Throwing		x					Throw debris into container		
	Sitting				x			In cab to operator load or dump controls		
	Standing					x		Hook up containers, open doors, chain up		
	Walking					x		Between cab and rear of truck for hook up, unhook, open doors, etc		
	Running/Jumping	x								
	Climbing		x					Onto truck to grease rails, into back of container if something stuck in there.		
	Bending/Stooping				x			chaining/unchaining, hook/unhook, shovel, pick up debris		
	Crouching		x							
	Kneeling	x								
Crawling	x									
Twisting				x			Load/unload/hook up, twist to see mirrors or behind when dumping/loading from in cab			
Balancing		x					If climbing onto truck to grease rails, into back of container if something stuck.			
Travelling	x									

**Essential Duty 2: Container Truck Driver - Load, Unload & Dump Containers (cont)**

a. Physical Demands (continued)		Frequency During Duty						Comments
		N	R	I	O	F	C	
Sensory / Perception	Hear/Conversations					x		With workers at pickup & dump areas, co-workers at start/end of shift, scale operator
	Hear/Other Sounds						x	Vehicles, alarms, other workers
	Vision/Far				x			Viewing other activity at pickup/drop off sites
	Vision/Near						x	Hook up/load/unload/dumping
	Vision/Colour	x						
	Vision/Depth						x	Hook up/load/unload/dump
	Perception/Spatial				x			Checking mirrors when dumping/loading
	Perception/Form	x						
	Feeling	x						
	Speech			x				With workers at pickup & dump areas, co-workers at start/end of shift, scale operator
Work Environment	Inside Work				x			Inside vehicle to operate load/dump controls
	Outside Work					x		Load/Unload/Dump containers, shovelling
	Slippery		x					Outside in snowy weather
	Congested worksite				x			Depends on time of day, activity level at dump sites and pick up sites
	Chemical Irritants		x					If pick up contaminated material by accident
	Confined Space Entry	x						
	Vapour Fumes		x					If items in container release fumes
	Noise						x	Dump sites, vehicle noise, load controls
	Proximity to moving objects						x	Vehicles and other machinery at pick/up and dump sites
	Hazardous Machines	x						
	Electrical hazard	x						
	Hazardous/Sharp Tools	x						
	Radiant/Thermal Energy	x						
	Hot/Cold		x					Extremes are rare and weather dependent
	Humid		x					Extremes are rare and weather dependent
	Environmental Dust		x					If near a dusty pick up site
	Organic Substances		x					Shovelling material spilled around container
	Medical Waste	x						
	Blood Products	x						
	Lighting – Direct		x					Dark early mornings in winter
Lighting – Indirect	x							
Vibration – Whole Body	x							
Vibration – Hand/Arm	x							

**Essential Duty 2: Container Truck Driver - Load, Unload & Dump Containers (cont)**

b. Cognitive and Psychosocial Demands	Frequency During Duty			Comments
	Never / Rare	Infrequent / Occasional	Frequent / Constant	
Degree of Supervision	x			
Time Pressure	x			
Attention to Detail		x		Fill out log sheet, hook up different containers correctly
Memory Requirements		x		Code numbers for each load, specifics of each container
Interact with co-workers			x	At beginning and end of shift, workers at pick up and dump sites, scale workers
Interact with public	x			
Work Alone			x	
Reading		x		Scale information, log sheet, etc
Writing	x			Log sheet, sheet
Irregular Hours	x			
Operating Equipment			x	Container controls

**Frequency Rating Definitions for % of Duty**

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