

**AXIS**

**REHABILITATION**

*at work*

# TASK ANALYSIS REPORT

**Organisation: PUMA Energy**

**Work Area: Eagle Farm Terminal**

**Job Title: Terminal Operator**

**General Description: The Terminal Operator is responsible for the functioning of the Eagle Farm terminal in ensuring safe receipt, storage and distribution of fuel. The Operator role is variable in physical demand as it can require hours of sitting preparing and planning or hours spent in operational areas operating valves and checking equipment.**

Work activities/sub-tasks may include (see pg 3):

- Load/unload trucks at specialty bays
- Valve operation
- Slops bucket use
- Tank sampling
- Loading arm operation
- Cleaning bunting drains
- Administrative tasks
- Air pump relocation and operation
- Box trailer movement and light vehicle operation

<b>Employees:</b>	Up to 7 full-time operators, shifts variable up to 12 hours.
<b>Working Hours:</b>	24hrs/day.
<b>Work Environment:</b>	Variable dependant on day's tasks – up to 100% in direct sunlight or 90% indoor climate controlled.
<b>PPE:</b>	Long pants, long-sleeve shirt (hi-visibility), safety boots, hard hat, sunglasses, gloves, sunscreen.
<b>Adaptive devices:</b>	Valve "cheat", forklift

The following keys were used to undertake this task analysis.

**Physical Demands:**

Term	Definition—Strength rating represents the strength requirements which are considered to be important for average, successful work performance
<b>Sedentary work</b>	Manual handling <4.5kg of force occasionally and/or <1kg frequently to lift, carry, push, pull, or otherwise move objects, including the human body. Sedentary work involves sitting most of the time, but may involve walking or standing for brief periods of time, occasionally.
<b>Light work</b>	Manual handling <9kg of force occasionally, and/or <4.5kg frequently, and/or <1kg constantly to move objects. Physical demand requirements are in excess of those for Sedentary Work. Even though the weight lifted may be only a negligible amount, a job should be rated Light Work: (1) when it requires walking or standing to a significant degree; or (2) when it requires sitting most of the time but entails pushing and/or pulling of arm or leg controls; and/or (3) when the job requires working at a production rate pace entailing the constant pushing and/or pulling of materials even though the weight of those materials is negligible.
<b>Medium work</b>	Manual handling 9-22kg of force occasionally, and/or 4.5-9kg frequently, and/or >4.5kg constantly to move objects. Physical Demand requirements are in excess of those for Light Work.
<b>Heavy work</b>	Manual handling 22-44kg of force occasionally, and/or 9-22kg of force frequently, and/or 4.5-9kg constantly to move objects. Physical Demand requirements are in excess of those for Medium Work.
<b>Very Heavy work</b>	Exerting >44kg of force occasionally, and/or >22kg of force frequently, and/or >9kg of force constantly to move objects. Physical Demand requirements are in excess of those for Heavy Work.

**Frequency Classifications:**





	Occasional	Frequent	Constant	Definitions #
% time	1-33	34-66	67-100	Sustained > 30 secs at a time
Reps per day	1-100	101-500	500+	Long duration > 30 mins at a time or >2hrs in shift
Reps per hour	0-12	12-63	>63	Repetition > 2 per minute
Reps per minute	1 every 5-15	1 every 1-5	1 or more	Exposure – time spent completing task over whole shift




**Summary:**



	<i>Sedentary</i>	<i>Sedentary - Light</i>	<i>Light</i>	<i>Light - Medium</i>	<i>Medium</i>	<i>Medium - Heavy</i>	<i>Heavy</i>	<i>Very Heavy</i>
<i>Occasional (1-33%)</i>	4.5kgs	7kgs	9kgs	16kgs	23kgs	34kgs	45.5kgs	Over 45.5kgs
<i>Frequent (34-66%)</i>	Negligible	3.5kgs	4.5kgs	7kgs	11.5kgs	16kgs	23kgs	Over 23kgs
<i>Constant (67-100%)</i>	-	-	Neg	2kgs	4.5kgs	7kgs	9kgs	Over 9kgs
	<i>Sit</i>	<i>Sit/stand</i>	<i>Stand/walk</i>	<i>Stand/walk</i>	<i>Stand/walk</i>	<i>Stand/walk</i>	<i>Stand/walk</i>	<i>Stand/walk</i>

References: U.S Department of Labour (1991) Dictionary of Occupational Titles, Fourth Edition  
 # Hazardous Manual Task Code of Practice, WH&S Qld 2011

Physical demands of job and % of work time allocated	Never 0%	Occasional 1- 33%	Frequent 34- 66%	Constant 67-100%	Comments
<b>Whole body movement</b>					
Sitting				✓	Proportion of sitting/standing/walking variable depending on day – can be up to 100% of day standing and walking
Standing				✓	
Walking				✓	
Kneel/squatting			✓		Accessing valves, tank sampling
<b>Lower back movement</b>					
Bending forwards			✓		Accessing valves
Bending backwards	✓				
Twisting		✓			Valves
Stooping		✓			Valves
<b>Neck movement</b>					
Flexion - looking down		✓			Traversing stairs/ladder
Extension - looking up		✓			Traversing stairs/ladder
Rotation		✓			Manipulating loading arms
<b>Upper Limb Movement</b>					
Finger/thumb Manipulation		✓			Administration tasks
Gripping			✓		Valves
Forward Reach		✓			Valves
Overhead Reach		✓			Valves
Side reach	✓				
Wrist side bend	✓				
Wrist extension		✓			Administration tasks
<b>Other demands</b>					
Steps/stairs			✓		Vertical ladder use required
Uneven ground			✓		
Balancing			✓		Stairs, ladders
Vibration – WB or UL	✓				
<b>Weights and forces</b>					
Floor (kg)		20kg			Oil drum
30cm (kg)					
Waist (kg)					
Shoulder (kg)					
Above shoulder (kg)		20kg			Slops bucket
Carrying		20kg			Slops bucket
Pushing (kg force)		30kg-40kg			Box trailer, valves
Pulling (kg force)		40kg			Valves

Job Title: Terminal Operator	
<b>Task 1: Load/unload trucks at speciality bays</b> <b>Total time/shift: up to 4hrs</b> <b>Task duration: 30mins at a time</b>	<b>Physical demand level – Medium work</b>
 	<ul style="list-style-type: none"> <li>• Connecting and disconnecting flexible hoses – 5kg force required. Best practice requires lunge position and bending forward for access.</li> <li>• Manoeuvring hanging arm hose – very little work required to attach</li> <li>• Turning valve – Requires bending forward to access.</li> </ul>
<b>Task 2: Valve operation</b> <b>Total time/shift: up to 4hrs</b> <b>Task duration: 30mins at a time</b>	<b>Physical demand level –Heavy work</b>
 	<ul style="list-style-type: none"> <li>• Turning of valves at various heights and locations around terminal.</li> <li>• May require kneeling, squatting, full forward bending and working at all shoulder heights for access.</li> <li>• For particularly stiff valves a “cheat” tool may be utilised to decrease force required to turn valve.</li> <li>• Some valves are placed in locations where safety rails prevent easy access and require leaning over or ducking underneath rails.</li> </ul>

<p><b>Task 3: Slops bucket use</b> Total time/shift: up to 1hr Task duration: 5mins at a time</p>	<p><b>Physical demand level – Medium work</b></p>
	<ul style="list-style-type: none"> <li>• Emptying slops bucket into bin.</li> <li>• Bucket weighs up to 20kg and may have to be carried for up to 2 minutes.</li> <li>• 20kg bucket is required to be lifted to shoulder height and operator must reach forward into bin.</li> <li>• Requires single arm carry of 20kg (either arm)</li> <li>• To reach bin operator must navigate two steps with a full bucket.</li> </ul>
<p><b>Task 4: Tank sampling</b> Total time/shift: up to 1hr Task duration: 1min at a time</p>	<p><b>Physical demand level – Light work</b></p>
	<ul style="list-style-type: none"> <li>• Levels checked on each tank and occasionally samples are taken.</li> <li>• Sampling bag required to be carried to top of tank (weight approx. 5kg), up full set of stairs (30+) or up a vertical ladder</li> <li>• Pressure valve must be opened – pull open from handle in standing position</li> <li>• Sampling hatch and levels checked / samples taken. Requires squatting/kneeling to ground level and sustaining this position.</li> </ul>
<p><b>Task 5: Loading arm use</b> Total time/shift: up to 10mins Task duration: 2mins at a time</p>	<p><b>Physical demand level – Heavy work</b></p>
	<ul style="list-style-type: none"> <li>• Loading arms are required to be released and moved into position</li> <li>• Requires flexing of lower back / full lunge position to achieve and heavy force to push into place</li> </ul>
<p><b>Task 6: Cleaning bunding drains</b> Total time/shift: up to 3hrs Task duration: 30mins at a time</p>	<p><b>Physical demand level – Medium work</b></p>
	<ul style="list-style-type: none"> <li>• Bunding drains are to be cleaned on a semi-regular basis</li> <li>• Use of rake and shovel to collect debris from the drain</li> <li>• Requires sustained forward bending and twisting</li> </ul>
<p><b>Task 7: Administrative tasks</b> Total time/shift: up to 4hrs Task duration: up to 1hr at a time</p>	<p><b>Physical demand level – Sedentary work</b></p>
	<ul style="list-style-type: none"> <li>• Planning and administrative tasks on computer</li> <li>• 5pt base, three-way adjustable chairs and standard keyboard and mice used</li> <li>• Responsibility of Operator to ensure adequate standing when tasked with high amounts of administrative responsibility for shift</li> </ul>

<p><b>Task 8: Air pump relocation and operation</b> Total time/shift: up to 4 hrs Task duration: up to 30 mins at a time</p>	<p><b>Physical demand level – Heavy work</b></p>
	<ul style="list-style-type: none"> <li>• Air pumps are required to be relocated around site, including in confined spaces</li> <li>• Air pump can be carried on pallet via forklift for most of relocation</li> <li>• Air pump may then have to be lifted over and under large pipes</li> <li>• Pipe is then attached to air pump and dragged over and under pipes</li> </ul>
<p><b>Task 8: Box trailer movement and light vehicle operation for transport to ship terminal</b> Total time/shift: up to 4 hrs Task duration: up to 30 mins at a time</p>	<p><b>Physical demand level – Heavy work</b></p>
	<ul style="list-style-type: none"> <li>• When moving to terminal operators will manually push loaded box trailer to connect to utility vehicle</li> <li>• Utility vehicle is driven to terminal for pumping from ship</li> <li>• Most tasks at terminal recently automated so were not viewed as part of assessment</li> </ul>

This task analysis was prepared for PUMA Energy on 18.04.2015. This data may vary depending on production rates, changes in design or work organisation and staffing levels. This document was prepared by Samuel Hutchins of Axis Rehabilitation *at work* and reviewed by PUMA Energy prior to publication.

U.S Department of Labour (1991) Dictionary of Occupational Titles, Fourth Edition Appendix C, Components of the definition trailer, section IV. Physical Demands – Strength Rating.