



# Job Task Analysis

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<b>Employer:</b>	<b>Stanislaus County</b>
<b>Occupation:</b>	Landfill Equipment Operator
<b>Classification:</b>	I, II, III
<b>Company Contact:</b>	Risk Management 1010 10 <sup>th</sup> Street Modesto, California 95354 (209) 525-5770
<b>Date:</b>	May 2011
<b>Analysis Provided By:</b>	Lyle Andersen, PT, CWCE Andersen Physical Therapy, Inc. 3500 Coffee Road, Suite 3 Modesto, California 95355 (209) 549-4626

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## INTRODUCTION:

A complete job description is available through Stanislaus County Human Resources. The environmental factors, physical and functional demands for this Job Task Analysis were documented by Andersen Physical Therapy, Inc. The methodology for documentation consisted of on-site visits, using various measuring devices such as dynamometers and scales, as well as observation and interviews with employees and managers. A detailed record was made of the physical and functional demands of the job in terms of force pounds, weight, frequency, height, distance, anthropometric measurements, stamina, and degrees of range of motion. The determination of the frequencies of functional activities is based on standards provided by the National Institute for Occupational Safety and Health (NIOSH) and the Work Practice Guide for Manual Lifting (U.S. Department of Commerce, National Technical Information Service).

The Job Task Analysis is organized as follows: General work description; safety requirements; equipment; environmental factors; and physical/functional demands.

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**GENERAL WORK DESCRIPTION:**

The frequency of the following activities may vary according to the physical requirements of the specific job tasks that the employee may be required to perform at random intervals.

Under the general supervision of the department manager, the **Landfill Equipment Operator I and II** operates and services heavy equipment, traffic control and semi-skilled labor. The **Landfill Equipment Operator III** operates as a major assignment all types of equipment assigned to landfill.

**SPECIFIC DUTIES:** Available through the Human Resources Department at the County of Stanislaus.

<http://www.stancounty.com/riskmgmt/risk-dm-jta-class-sub-main.shtm>

**Safety Requirements:** All employees are required to observe company safety procedures and standards to insure individual and collective safety, in addition to avoiding unnecessary risk to oneself, co-workers, customers, and property.

Employee's operating heavy machinery and or commercial vehicles must meet the medical requirements as those required by the CA Department of Motor Vehicles when applying for a commercial driver's license see form DL 51 available on line at <http://dmv.ca.gov/forms/dl/dl51.pdf>.

**Equipment:**

- |                                   |  |
|-----------------------------------|--|
| 1. 2-way radio                    | 20. Pick-up truck                      |
| 2. 6 and 12-pound sledge hammer   | 21. Pneumatic impact wrenches          |
| 3. Backhoe                        | 22. Portable 2", 3" and 4" trash pumps |
| 4. Bolt cutters                   | 23. Portable generator                 |
| 5. Boom truck                     | 24. Power steamer and washer           |
| 6. Business machines              | 25. Power tools                        |
| 7. Cellular phone                 | 26. Roller                             |
| 8. Chainsaw                       | 27. Scale house operations             |
| 9. Computer                       | 28. Scraper                            |
| 10. D-6 dozer                     | 29. Shovels/picks/hoes/wrecking bars   |
| 11. D-8 dozer                     | 30. Tow cables/chains                  |
| 12. Grader                        | 31. Tractor mower                      |
| 13. Grease guns                   | 32. Trash compactor                    |
| 14. Hand mower                    | 33. Trash/fuel trailers                |
| 15. Hand pumps                    | 34. Truck                              |
| 16. Handsaws/claw hammers/pry bar | 35. Water truck                        |
| 17. Keys                          | 36. Weed-eater                         |
| 18. Manlift                       | 37. Welding truck/welder/generator     |
| 19. Mechanic tools                |  |

*All employees within the **Landfill Equipment Operator I, II, & III** position are required to provide physical assistance for all weight and frequency requirement needs of all job tasks in order to maintain a safe work environment. Employees must be physically capable of working in any of the job tasks within the **Landfill Equipment Operator I, II, & III** position.*

**ENVIRONMENTAL FACTORS**



The following percentages are given in terms of an eight-hour workday:

<b>Seldom</b> =	1% - 2%	<b>Frequent</b> =	34% - 66%
<b>Occasional</b> =	3% - 33%	<b>Constant</b> =	67% - 100%

<b>ENVIRONMENTAL FACTORS</b>		<b>MAXIMUM FREQUENCY</b>
1.	Unprotected heights: hillside grade, loading dock, heavy equipment.....	Occasional
2.	Being around moving machinery: vehicle traffic, scraper/earth mover, grader, dozer, compactor, tractor.....	Constant
3.	Exposure to marked changes in temperature and humidity: outside temperatures may seasonally vary between 28-110 degrees.....	Not Applicable
4.	Exposure to dust, fumes, smoke, gases, or other irritating substances (specify): solid waste, ash. <i>Respiratory protection is available</i> .....	Occasional
5.	Driving: heavy equipment, vehicle .....	Constant
6.	Exposure to excessive noise: heavy equipment .....	Constant
	<i>Hearing protection is available</i>	
7.	Exposure to radiant or electrical energy:.....	Not Applicable
8.	Exposure to solvents or chemicals: fuel equipment, refuse and diverted material. <i>Refer to MSDS document.</i>	Seldom
9.	Exposure to slippery or uneven walking surfaces: water, mud, ice, undeveloped ground, embankment, berm.....	Frequent
10.	Working below ground:.....	Not Applicable
11.	Unusual fatigue factors: .....	Not Applicable
12.	Working with explosives:.....	Not Applicable
13.	Excessive vibration: earth mover, impact wrench .....	Occasional
14.	Working with hands in water or other substance:.....	Seldom
	<i>Hand protection is available</i>	
15.	Working proximity:.....	Alone: Occasional
		Closely with others: Constant
16.	Working inside: office, air conditioned, heavy equipment/vehicle.....	Constant
17.	Working outside: spotter, maintenance operator, backhoe.....	Constant

## FUNCTIONAL ACTIVITIES



The frequency of the following activities may vary according to the physical requirements of the specific job tasks the employee may be required to perform at random intervals.

### PHYSICAL AND FUNCTIONAL REQUIREMENTS

<u>FREQUENCY DEFINITIONS</u>	<u>SELDOM</u>	<u>OCCASIONAL</u>	<u>FREQUENT</u>	<u>CONSTANT</u>
Percent of the Day	1-2%	3-33%	34-66%	67-100%
Material Handling	1-4 Reps	5-32 Reps	33-250 Reps	251-2,000 Reps
Non Material Handling	1-4 Reps	5-32 Reps	33-250 Reps	251-2,000 Reps
Repetitive & Static Work	1-50 Reps	51-250 Reps	251-1,000 Reps	1,001-20,000 Reps

1.) **PUSH:** *Pushing activities may require use of the back in conjunction with leg and arm musculature.*

#### MAXIMUM REQUIREMENT

<b>0-10 pounds:</b>	Constant	
<b>11-25 pounds:</b>	Occasional	
<b>26-35 pounds:</b>	Occasional	
<b>36-50 pounds:</b>	Seldom	
<b>51-100 pounds:</b>	Not Required	<b>Maximum Force: 50 Pounds</b>

**Assistive Devices:** 4-Wheel Cart, Hand Truck. Additionally, one or more person(s) assistance is available with forces greater than 50 pounds.

**Comments:** Pushing is utilized with activities such as retrieving, returning, storing, adjusting, transporting and/or operating, equipment, controls or supplies (e.g. tools, levers). The employee exerts up to 50 pounds of force in a horizontal plane between waist and shoulder height of a distance up to 5 feet when performing job tasks (e.g. operate and drive heavy equipment; hand tools including air, manual and electric; open/close door, gate; screen waste refuse and diverted materials).

2.) **PULL:** *Pulling activities may require use of the back in conjunction with leg and arm musculature.*

#### MAXIMUM REQUIREMENT

<b>0-10 pounds:</b>	Constant	
<b>11-25 pounds:</b>	Occasional	
<b>26-35 pounds:</b>	Occasional	
<b>36-50 pounds:</b>	Seldom	
<b>51-100 pounds:</b>	Not Required	<b>Maximum Force: 50 Pounds</b>

**Assistive Devices:** 4-Wheel Cart, Hand Truck. Additionally, one or more person(s) assistance is available with forces greater than 50 pounds.

**Comments:** Pulling is utilized with activities such as retrieving, returning, storing, adjusting, transporting and/or operating, equipment, controls or supplies (e.g. tools, levers). The employee exerts up to 50 pounds of force in a horizontal plane between waist and shoulder height of a distance up to 5 feet when performing job tasks (e.g. operate and drive heavy equipment; hand tools including air, manual and electric, climb in/out of elevated heavy equipment; screen and/or drag refuse and diverted materials). *Pushing is the preferred method of moving carts.*

3.) **STAND-UP LIFT:** *Lifting weighted objects between floor and waist height.***MAXIMUM REQUIREMENT**

<b>0-10 pounds:</b>	Occasional	
<b>11-25 pounds:</b>	Occasional	
<b>26-35 pounds:</b>	Occasional	
<b>36-50 pounds:</b>	Seldom	
<b>51-100 pounds:</b>	Not Required	<b>Maximum Force: 50 Pounds</b>

**Assistive Devices:** One or more person(s) assistance is available with weights greater than 50 pounds.

**Comments:** A stand-up lift is utilized with activities such as retrieving, returning, utilizing, storing, adjusting, moving, and/or transporting solid waste product, equipment and supplies (e.g. service and maintenance of heavy equipment, refuse and diverted material). The employee lifts items weighing between <1 pound and 50 pounds off the floor when performing job tasks. (e.g. miscellaneous scrap, parts, tire, wheel, 1 and 5-gallon bucket, miscellaneous solid waste from customers, furniture, appliances, boxed miscellaneous items; hand and power tools; refuse and diverted material; barricade). *Safe lifting is performed by utilizing a posture of partial squatting and a straight back.*

4.) **LEVEL LIFT:** *Lifting weighted objects from between waist and chest height level for a maximum horizontal distance of up to four feet.***MAXIMUM REQUIREMENT**

<b>0-10 pounds:</b>	Occasional	
<b>11-25 pounds:</b>	Occasional	
<b>26-35 pounds:</b>	Occasional	
<b>36-50 pounds:</b>	Seldom	
<b>51-100 pounds:</b>	Not Required	<b>Maximum Force: 50 Pounds</b>

**Assistive Devices:** One or more person(s) assistance is available with weights greater than 50 pounds.

**Comments:** A level lift is utilized with activities such as retrieving, returning, utilizing, storing, adjusting, moving, and/or transporting solid waste product, equipment and supplies (e.g. service and maintenance of heavy equipment, refuse and diverted material). The employee lifts items weighing between <1 pound and 50 pounds when performing job tasks. (e.g. miscellaneous scrap, parts, tire, wheel, 1 and 5-gallon bucket, miscellaneous solid waste from customers; barricade, furniture, appliances, boxed miscellaneous items; hand and power tools; refuse and diverted material).

5.) **WEIGHT CARRY:** *Carrying weighted objects between waist and chest height beyond a distance of four feet.***MAXIMUM REQUIREMENT**

<b>0-10 pounds:</b>	Seldom	
<b>11-25 pounds:</b>	Seldom	
<b>26-35 pounds:</b>	Seldom	
<b>36-50 pounds:</b>	Seldom	
<b>51-100 pounds:</b>	Not Required	<b>Maximum Force: 50 Pounds</b>

**Assistive Devices:** One or more person(s) assistance is available with weights greater than 50 pounds.

**Comments:** Weight carry is utilized with activities such as retrieving, returning, utilizing, storing, adjusting, moving, and/or transporting solid waste product, equipment and supplies (e.g. service and maintenance of heavy equipment, refuse and diverted material). The employee lifts items weighing between <1 pound and 50 pounds when performing job tasks. (e.g. miscellaneous scrap, parts, tire, wheel, 1 and 5-gallon bucket, miscellaneous solid waste from customers, boxed miscellaneous items; hand and power tools; refuse and diverted material; barricade).

6.) **OVERHEAD LIFT/PULL DOWN:** *Lifting weighted object from/to chest and overhead height level.*

**MAXIMUM REQUIREMENT**

<b>0-10 pounds:</b>	Occasional	
<b>11-25 pounds:</b>	Seldom	
<b>26-100 pounds:</b>	Not Required	<b>Maximum Force:</b> <u>25</u> Pounds

**Assistive Devices:** A vertical ladder, step ladder or step stool is available to bring items to eye or shoulder level. Additionally, one or more person(s) assistance is available with weights greater than 25 pounds.

**Comments:** Overhead lift/pull down is utilized with activities such as retrieving, returning, storing and/or transporting equipment and supplies (e.g. tool). The employee lifts items weighing between <1 pound and 25 pounds to a maximum height of 72 inches when performing job tasks (e.g. climb in/out of elevated heavy equipment; service and repair of elevated equipment). *Variables to overhead reaching will be the employee's height and anthropometric reach.*

7.) **OVERHEAD REACH:**

**MAXIMUM FREQUENCY:** Occasional

**Comments:** Overhead reach is performed to a maximum height of 72 inches when storing, operating and/or utilizing equipment (e.g. grab safe handholds in order to enter and exit heavy equipment; operate overhead controls in heavy equipment; maintenance, service and repair of elevated equipment). *A ladder (appropriate height) or step stool may be utilized to bring items to eye or shoulder level. Variables to overhead reaching will be the employee's height and anthropometric reach.*

8.) **FORWARD REACH:**

**MAXIMUM FREQUENCY:** Constant

**Comments:** Forward reach is performed up to a distance of 28 inches when manipulating, handling, operating, adjusting equipment (e.g. operate heavy equipment controls, pre-trip inspection; service, maintenance and repairs of equipment; refuse and diverted material; waste screening; traffic control). *The degree of elbow extension required for reaching will vary according to the employee's anthropometric reach.*

9.) **STOOP:**

**MAXIMUM FREQUENCY:** Occasional

**Comments:** Stooping is performed when retrieving, returning, storing, and/or transporting solid waste product, equipment or supplies (e.g. pre-trip inspection; service, maintenance and repair of heavy equipment; waste screening for refuse and diverted material). *Variable to stooping will be the employee's height. Stooping of the head, trunk and knees can be minimized or avoided by substituting alternate positions of squatting, kneeling or bending when performing job tasks.*

10.) **SQUAT:** (Unloaded)

**MAXIMUM  
FREQUENCY:** Seldom

**Comments:** Squatting is performed when retrieving, returning, storing, and/or transporting, equipment or supplies (e.g. pre-trip inspection; service, maintenance and repair of heavy equipment; waste screening). *Squatting may be minimized or avoided by substituting alternate positions of bending or kneeling. Partial squatting is a preferred lifting posture.*

11.) **FORWARD BEND:**

**MAXIMUM  
FREQUENCY:** Frequent

**Comments:** Bending forward at the waist is performed when retrieving, returning, storing, and/or transporting equipment, supplies (e.g. pre-trip inspection; service, maintenance and repair of heavy equipment; waste screening for refuse and diverted material). Maximum forward trunk flexion required is 60 degrees. *Employee may minimize or avoid excessive forward bending of the trunk up to 80 degrees by using alternate positions of bending at the hips, kneeling, half kneeling, stooping, sitting or squatting.*

12.) **TWIST:**

**MAXIMUM  
FREQUENCY:** Frequent

**Comments:** Twisting at the waist is performed when retrieving, returning, storing, adjusting, transporting operating and/or utilizing controls, equipment and supplies (e.g. operate heavy equipment for safety observation; operate control levers; drive vehicle; waste screening for refuse and diverted material). *Twisting at the waist may be minimized by turning the whole body, including the feet.*

13.) **TURN:**

**MAXIMUM  
FREQUENCY:** Occasional

**Comments:** Turning is performed when retrieving, returning, and/or transporting equipment, and supplies (e.g. service, inspection, maintenance or repair; waste screening; handle refuse and diverted material).

14.) **KNEEL:**

**MAXIMUM  
FREQUENCY:** Seldom

**Comments:** Kneeling is performed when retrieving, returning, adjusting, and/or equipment, supplies (e.g. inspection, repair, service and maintenance of heavy equipment; change cutting edges on heavy equipment). *Kneeling may be minimized or avoided by substituting alternate positions of bending, squatting, or half kneeling.*

15.) **CRAWL:**

**MAXIMUM  
FREQUENCY:** Seldom

**Comments:** Crawling is performed when adjusting and/or preparing equipment (e.g. inspection, repair service and maintenance of heavy equipment).

16.) **STAIR CLIMB:**

**MAXIMUM  
FREQUENCY:** Occasional

**Comments:** Stair climb is required in order to perform job tasks (e.g. to/from elevated heavy equipment; office).

17.) **LADDER CLIMB:**

**MAXIMUM  
FREQUENCY:** Occasional

**Comments:** Ladder climbing is performed onto/off of safety ladders or steps to access equipment or supplies (e.g. heavy equipment, fuel tank) located up to 8 feet above floor level (e.g. climb in/out of heavy equipment to operate inspect, repair, service and maintain equipment). *Variables to overhead climbing will vary according to the employee's height and anthropometric reach.*

18.) **WALK:**

**MAXIMUM  
FREQUENCY:** Frequent

**Comments:** Walking is performed when performing job tasks (e.g. walk to/from meetings; survey, monitor worksite; to/from service shop/worksite/equipment/office; pre-trip check; customer service). Walking length varies between 3 feet and 600+ feet depending on job task.

19.) **SIT:**

**MAXIMUM  
FREQUENCY:** Constant

**Comments:** Sitting is performed for a maximum of 120-minute intervals when operating equipment (e.g. sit for meetings; operate heavy equipment, drive truck throughout the facility and/or county; scale house operation).

20.) **STAND:** (Static)

**MAXIMUM  
FREQUENCY:** Frequent

**Comments:** Static standing is performed for a maximum of 15-minute intervals when adjusting, observing and/or repairing equipment (e.g. stand to spot traffic, screen waste; repair, inspection, service and maintenance of heavy equipment; meetings with collaborating agencies and/or colleagues; customer service).



21.) **BALANCE:**

MAXIMUM FREQUENCY:	
	Frequent

*Comments:* Adequate balance is required for safe walking, standing, climbing, reaching and lifting.

22.) **HAND/FOOT CONTROL:**

<u>MAXIMUM REQUIREMENT</u>	
<b>HAND:</b>	
<b>Right:</b>	Constant
<b>Left:</b>	Constant
<b>Both:</b>	Constant
<b>Either:</b>	Not Required
<b>FOOT:</b>	
<b>Right:</b>	Constant
<b>Left:</b>	Constant
<b>Both:</b>	Frequent
<b>Either:</b>	Not Required

*Comments:* Hand controls are utilized to operate equipment (e.g. heavy equipment, truck, fuel equipment, pump oil, drum pump, door knob, latch, air nozzle) when adjusting, transporting and/or utilizing equipment and supplies (e.g. levers for heavy equipment elevation, loading, accelerating, articulation, steering; fueling, maintenance and service of equipment). Foot controls are utilized to operate equipment (e.g. equipment that requires adjusting levers for acceleration and deceleration).

23.) **UPPER AND LOWER EXTREMITY COORDINATION:**

<u>MAXIMUM REQUIREMENT</u>	
<b>Simple Grasp:</b>	Constant
<b>Firm Grasp:</b>	Frequent
<b>Fine Manipulation:</b>	Occasional
<b>Eye/Hand Coordination:</b>	Constant
<b>Hand/Foot Coordination:</b>	Constant

*Comments:* Grasping and coordination activities are performed when adjusting, utilizing, and operating equipment (e.g. heavy equipment/truck, waste, tool).

**Simple grasping** is utilized to perform job tasks (e.g. lift and manipulate objects weighing less than 5 pounds; switches, buttons, levers; hand/power tool operation; drive/operate steering wheel).

**Firm grasping** is utilized to perform job tasks (e.g. lift and handle objects weighing 5 pounds or greater; open/close door; drive/operate steering wheel; climb into/out of heavy equipment, hand/power tool operation).

**Fine manipulation** is utilized to perform job tasks (e.g. keyboard/mouse, handwrite, lock and key; control levers; buttons, switch/knob).

**Eye/hand coordination** is utilized to perform job tasks (e.g. keyboard/mouse, handwrite, lock and key; control levers; buttons, switch/knob; drive vehicle; operate heavy equipment; hand/power tool).

**Hand/foot coordination** is utilized to perform job tasks (e.g. operate heavy equipment/vehicle).

*Depending on individual hand dominance, one hand may be used more frequently than the other when performing job tasks.*

24.) **CERVICAL (NECK) MOVEMENT:**

	<b><u>MAXIMUM REQUIREMENT</u></b>
<b>Static Neutral Position:</b>	Frequent
<b>Flexing:</b>	Frequent
<b>Rotating:</b>	Frequent
<b>Extending:</b>	Occasional

*Comments:* Neck movement is required when performing job tasks (e.g. operate heavy equipment, drive vehicle; spot traffic; screen waste for refuse and diverted material; desktop work; worksite observation and surveillance).  
*Participation in the observation of the work environment allows for safe working conditions. Full cervical range of motion is required to safely perform the job tasks.*

{End of Report}



# Stanislaus County

## JOB TASK ANALYSIS SUMMARY

<u>FREQUENCY DEFINITIONS</u>	<u>SELDOM</u>	<u>OCCASIONAL</u>	<u>FREQUENT</u>	<u>CONSTANT</u>
Percent of the Day	1-2%	3-33%	34-66%	67-100%
Material Handling	1-4 Reps	5-32 Reps	33-250 Reps	251-2,000 Reps
Non Material Handling	1-4 Reps	5-32 Reps	33-250 Reps	251-2,000 Reps
Repetitive & Static Work	1-50 Reps	51-250 Reps	251-1,000 Reps	1,001-20,000 Reps

The following is a summary of the physical demands of the Job Task Analysis that were obtained for the position of:

### LANDFILL EQUIPMENT OPERATOR I, II, III

Functional Activities	Maximum Requirements	Functional Activities	Maximum Requirements
<i>Push (Force)</i> <sup>1</sup>	50 pounds	<i>Stair Climb</i> <sup>1</sup>	Occasional
<i>Pull (Force)</i> <sup>1</sup>	50 pounds	<i>Ladder Climb</i> <sup>1</sup>	Occasional
<i>Stand Up Lift</i> <sup>1</sup>	50 pounds	<i>Walk</i> <sup>1</sup>	Frequent
<i>Level Lift</i> <sup>1</sup>	50 pounds	<i>Sit</i> <sup>1</sup>	Constant
<i>Weight Carry</i> <sup>1</sup>	50 pounds	<i>Stand (Static)</i> <sup>1</sup>	Frequent
<i>Overhead Lift/Pull Down</i>	25 pounds	<i>Balance</i> <sup>1</sup>	Frequent
<i>Overhead Reach</i> <sup>1</sup>	Occasional	<i>Hand Control</i> <sup>1</sup>	Constant
<i>Forward Reach</i> <sup>1</sup>	Constant	<i>Foot Control</i> <sup>1</sup>	Constant
<i>Stoop</i> <sup>1</sup>	Occasional	<i>Simple Grasp</i> <sup>1</sup>	Constant
<i>Squat (Unloaded)</i> <sup>1</sup>	Seldom	<i>Firm Grasp</i> <sup>1</sup>	Frequent
<i>Forward Bend</i> <sup>1</sup>	Frequent	<i>Fine Manipulation</i> <sup>1</sup>	Occasional
<i>Twist</i> <sup>1</sup>	Frequent	<i>Eye/Hand Coordination</i> <sup>1</sup>	Constant
<i>Turn</i> <sup>1</sup>	Occasional	<i>Hand/Foot Coordination</i> <sup>1</sup>	Constant
<i>Kneel</i> <sup>1</sup>	Seldom	<i>Cervical (neck) Movement</i> <sup>1</sup>	Frequent
<i>Crawl</i> <sup>1</sup>	Seldom		

<sup>1</sup> The critical demands of the job.

*Lyle Andersen, PT*

Date: \_\_\_\_\_

Lyle Andersen, PT, CWCE  
Preparer Signature

GEORGE ANGUSICH

*G. Angusich* Date: *8-1-13*

Contact Person  
Title  
*Manager I*

Date: \_\_\_\_\_

Contact Person  
Title

Contact Person  
Title

LA/au