CHAPTER 10 ASSIGNING MATERIALS

INFOCUS

WPL_J409

Microsoft Project has three types of resources: ***work***, ***costs***, and ***materials***. Work resources are used for assigning labour and equipment, costs resources are used for special costs such as travel, and material resources are used for assigning and tracking materials that are consumed during the project.

Material resources need to be assigned to tasks much the same way as work resources need to be assigned to tasks. The methods of assignment, however, differ between them.

When a new resource is added to the project resource pool it must be clearly identified as either a ***work*** resource or a ***material*** resource.

The resource type you choose determines which other fields are available for that resource and how it can be assigned.

Material resources can generally only be assigned in a ***variable material consumption*** method or in a ***fixed material consumption*** method. With the ***variable material consumption*** method the material is assigned as a unit with a usage rate based on a time period. With ***fixed material consumption*** the total consumption is added in the ***Work*** field of a task without any notion of a duration.

In this session you will:

- ✓ learn how to assign fixed material consumption
- ✓ learn how to contour material consumption
- ✓ learn how to supplement materials in a project
- ✓ learn how to assign variable usage materials
- ✓ learn how to add more materials to a task
- ✓ learn how to view material quantities and levels.

ASSIGNING FIXED MATERIAL CONSUMPTION

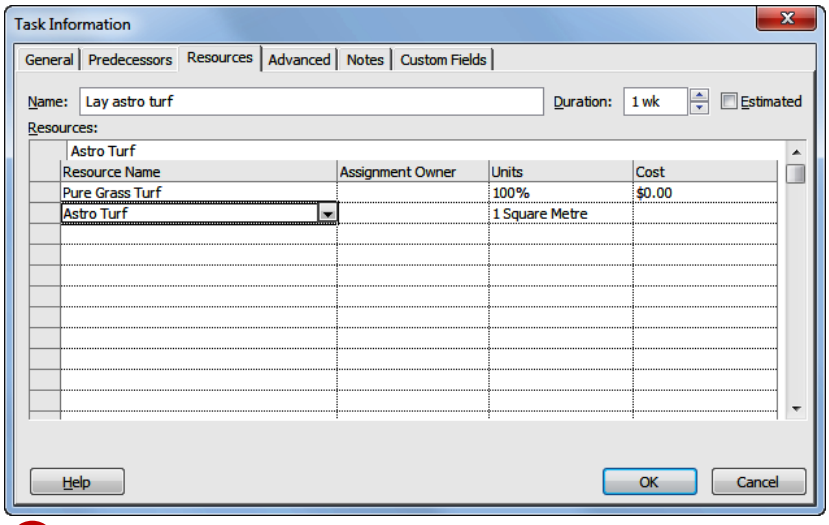
Project Manager, Scott Harris, has indicated that two materials will be consumed – the turf laid on the oval and the paint. Since there is a fixed amount of both required, these can be entered as ***fixed material consumption*** items. These are entered into the work field of the resource assignment in the same way that hours are entered for a ***Work*** resource.

Try This Yourself:

Open File

Before starting this exercise you MUST open the file J409 Materials_1.mpp...

1. Double click on the ***Lay astro turf task*** to display the ***Task Information*** dialog box and click on the ***Resources*** tab
2. Click below ***Pure Grass Turf***, click on the drop arrow and click on ***Astro Turf***
3. Click on ***1 Square Metre*** in ***Units***, type **17850** and click on **[OK]**
4. Double click on ***Paint rooms, fixtures, fittings, etc*** in the ***Gantt Chart*** to display the ***Task Information*** dialog box
5. Click immediately below ***Painter***, click on the drop arrow and click on ***Paint***
6. Click on ***1 Litre***, type **1500** and click on **[OK]**



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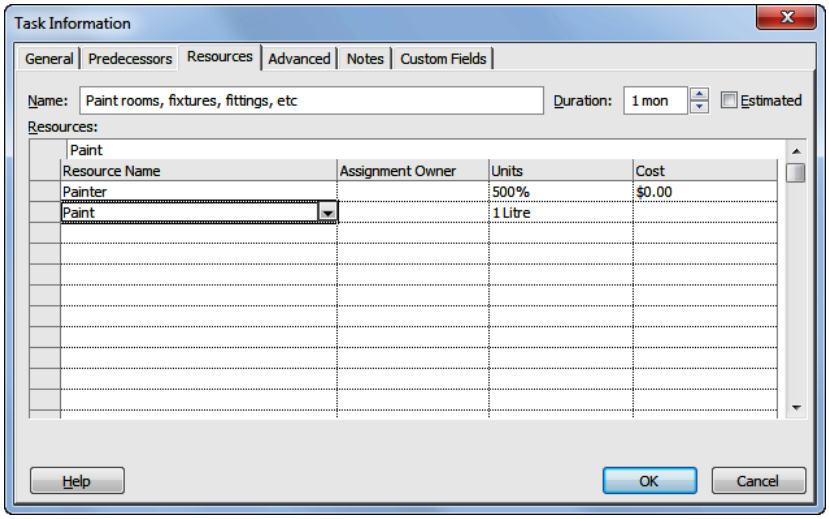

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For Your Reference…

To ***assign fixed material*** consumption:

1. Double click on the task and click on the ***Resources*** tab
2. Click on the ***Resource Name*** drop arrow and choose the appropriate material
3. Enter the quantity in ***Units***

Handy to Know…

- Notice that Microsoft Project automatically added descriptive labels (e.g. litres, square metre, etc) after the quantities that you have entered. These are the labels from the ***Material*** field in the resource pool. Whatever you typed in this field will be used by Microsoft Project as the descriptor.

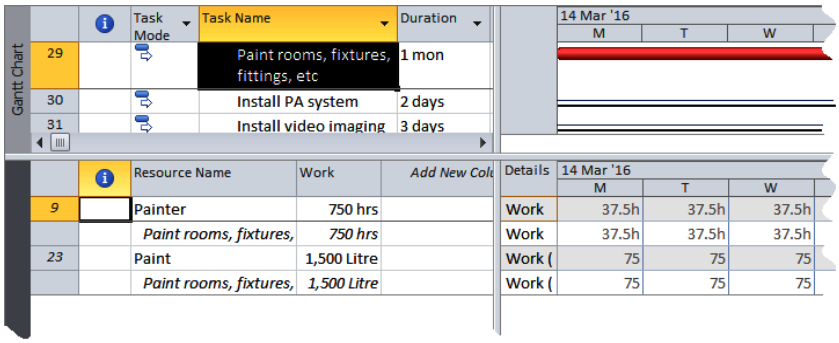
CONTOURING MATERIALS USAGE

When you enter ***fixed material consumption*** amounts Microsoft Project will ***contour*** the usage over the duration of the task. The default methodology is a flat line where an equal usage is assigned to every hour of the duration of the task. Just like work resources, however, you can get in and change the ***contouring*** of the assignment to suit the needs of your project.

Try This Yourself:

Same File *Continue using the previous file with this exercise, or open the file J409 Materials_2.mpp...*

1. Click on the ***View*** tab and click on ***Details*** to split the screen
2. Click on the drop arrow ▾ in ***Details*** and click on ***Resource Usage*** to display the resource usage details in the lower form
3. Click on ***Paint rooms, fixtures, fittings, etc*** in the top pane, click on the ***Task*** tab on the ***Ribbon*** and click on ***Scroll to Task***
4. Click on the first ***75*** (white background) in the ***Resource Usage*** timeline, type **25** and press Tab to move to the next day
5. Repeat step ***4*** and enter the values as shown – the total should show 1,500 when you have finished
6. Click on the ***View*** tab on the ***Ribbon*** and click on ***Details*** to return to a single pane view



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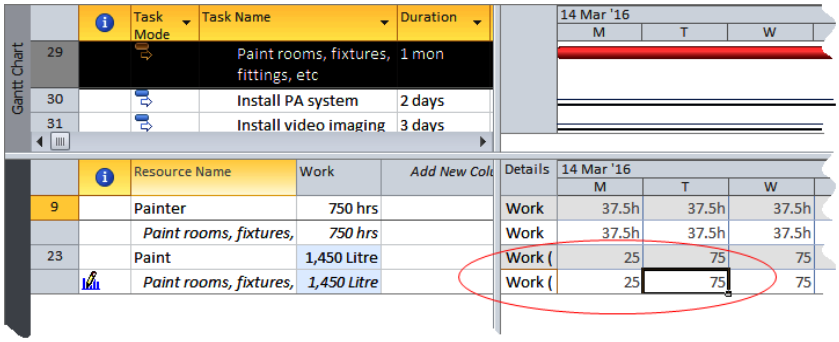

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Day	Date	Litres
Tue	15/3	30
Wed	16/3	35
Thu	17/3	45
Fri	18/3	50
Mon	21/3	70
Tue	22/3	70
Wed	23/3	80
Thu	24/3	80
Fri	25/3	80
Mon	28/3	90

Day	Date	Litres
Tue	29/3	90
Wed	30/3	100
Thu	31/3	100
Fri	1/4	100
Mon	4/4	130
Tue	5/4	130
Wed	6/4	100
Thu	7/4	80
Fri	8/4	*15*

For Your Reference…

To ***contour material usage***:

1. Display the ***Resource Usage*** form
2. Click on the task and scroll to it on the timeline
3. Type the new values into the timeline cells

Handy to Know…

- Once costs are entered for materials, Project will allow you to monitor the cost of resources. This can be used to project cash flows. In many situations however, materials are really only used after some preparation work and therefore should be contoured towards the later part of the task.

ADDING MORE MATERIAL ASSIGNMENTS

Material resources are the supplies or other consumable items used to complete tasks in a project. Information about resources is maintained in a resource list, which can be created using the Resource Sheet. This list of resources can be added to at any stage during the project.

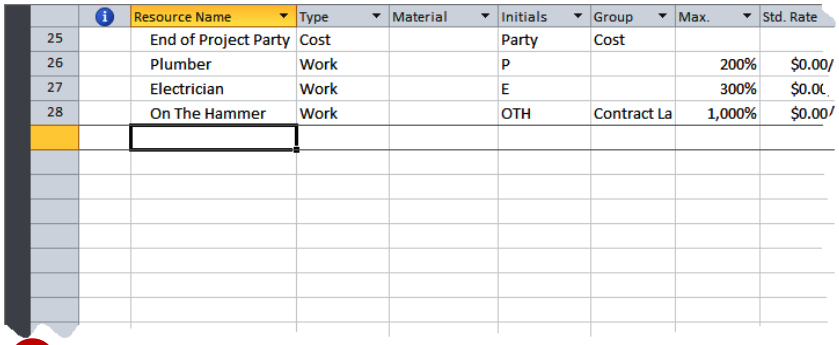
Try This Yourself:

Same File *Continue using the previous file with this exercise, or open the file J409 Materials_3.mpp...*

1. Click on the ***View*** tab on the ***Ribbon*** and click on ***Resource Sheet*** to see the resource pool

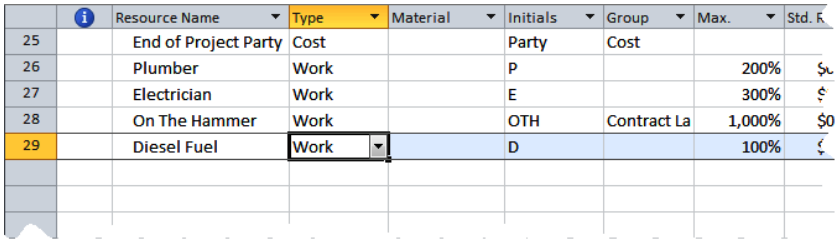
   We need to add unleaded petrol and diesel to the project…

2. Scroll to the bottom of the list of resources and click in the next available ***Resource Name*** cell (below ***On The Hammer***)
3. Type **Diesel Fuel** and press Tab to jump to ***Type***
4. Type **M** for ***Material*** and press Tab to jump to ***Material***
5. Type **Litre** and press Tab to jump to ***Initials***
6. Type **DF** and press Tab to jump to ***Group***
7. Type **Fuel** and press Enter
8. Repeat steps ***2*** through to ***7*** and add the petrol resource as shown



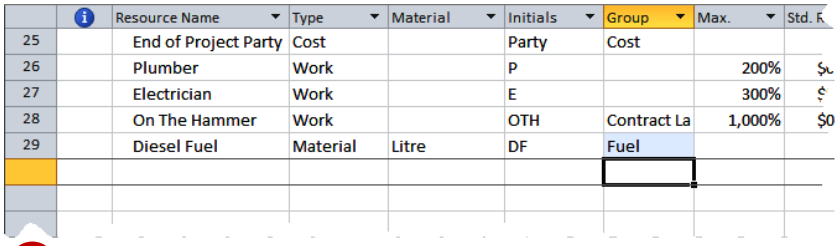
	Resource Name	Type	Material	Initials	Group	Max.	Std. Rate
25	End of Project Party	Cost		Party	Cost		
26	Plumber	Work		P		200%	$0.00/
27	Electrician	Work		E		300%	$0.0(
28	On The Hammer	Work		OTH	Contract La	1,000%	$0.00/

2



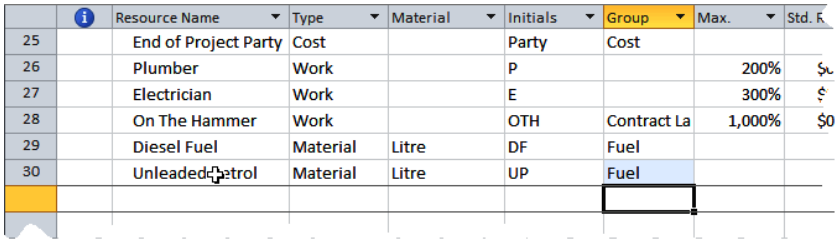
	Resource Name	Type	Material	Initials	Group	Max.	Std. R
25	End of Project Party	Cost		Party	Cost		
26	Plumber	Work		P		200%	$(
27	Electrician	Work		E		300%	$
28	On The Hammer	Work		OTH	Contract La	1,000%	$0
29	Diesel Fuel	Work		D		100%	$

3



	Resource Name	Type	Material	Initials	Group	Max.	Std. R
25	End of Project Party	Cost		Party	Cost		
26	Plumber	Work		P		200%	$(
27	Electrician	Work		E		300%	$
28	On The Hammer	Work		OTH	Contract La	1,000%	$0
29	Diesel Fuel	Material	Litre	DF	Fuel		

7



	Resource Name	Type	Material	Initials	Group	Max.	Std. R
25	End of Project Party	Cost		Party	Cost		
26	Plumber	Work		P		200%	$(
27	Electrician	Work		E		300%	$
28	On The Hammer	Work		OTH	Contract La	1,000%	$0
29	Diesel Fuel	Material	Litre	DF	Fuel		
30	Unleaded Petrol	Material	Litre	UP	Fuel		

8

For Your Reference…

To ***add more*** material resources:

1. Click on ***View***, then ***Resource Sheet***
2. Click in the next available ***Resource Name*** cell
3. Type in the necessary details eg. *Resource Name*, *Type* etc

Handy to Know…

- You can sort a resource by any of its columns simply by clicking on the small arrow that appears to the right of the ***field*** (column) heading.

ASSIGNING VARIABLE USAGE MATERIAL

Unlike the turf and the paint Scott Harris has no idea how much fuel will be used during the life of the project. He might be able to calculate this but it really makes no sense to do so. These material resources can therefore be assigned as ***variable material consumption*** resources, where they are assigned at a certain consumption rate per hour.

Try This Yourself:

Same File *Continue using the previous file with this exercise, or open the file J409 Materials_4.mpp...*

1. Click on the ***View*** tab on the ***Ribbon*** and click on ***Details*** to split the screen if necessary
2. Click on the drop arrow for ***Details*** and click on ***Task Sheet*** – this view will show the tasks that a resource is assigned to
3. Click on ***Grader*** in the upper pane to see all of the tasks for the grader
4. Double-click on ***Clear and level site*** in the lower pane, and click on the ***Resources*** tab

   Notice that there are two graders used for this task…
5. Click in the ***Resource Name*** cell below ***Supervisor***, click on the drop arrow and click on ***Diesel Fuel***
6. Type **16/h** in ***Units***, and press Enter
7. Click on **[OK]**
8. Repeat steps ***3*** to ***7*** to add the additional fuel materials as shown

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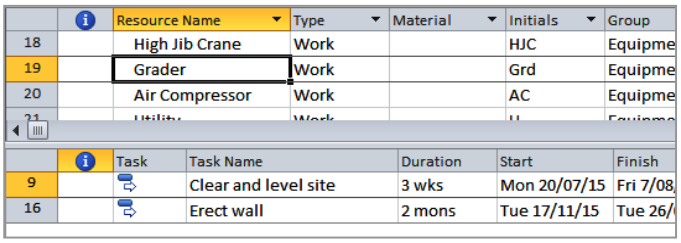
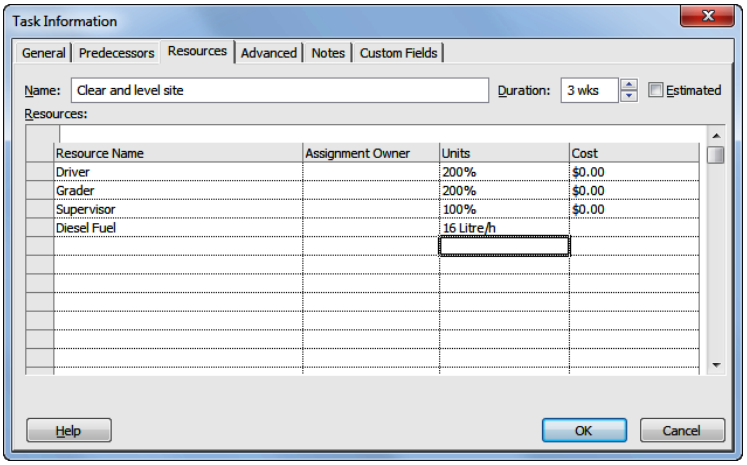


	Resource Name	Type	Material	Initials	Group
18	High Jib Crane	Work		HJC	Equipme
19	Grader	Work		Grd	Equipme
20	Air Compressor	Work		AC	Equipme

	Task	Task Name	Duration	Start	Finish
9		Clear and level site	3 wks	Mon 20/07/15	Fri 7/08
16		Erect wall	2 mons	Tue 17/11/15	Tue 26/

6



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Grader		
Erect Wall	Diesel Fuel	8/h
High Jib Crane		
Erect Steelwork	Diesel Fuel	12/h
Install roofing superstructure	Diesel Fuel	12/h
Install roof retracting mechanism	Diesel Fuel	12/h
Utility		
Erect Steelwork	Unleaded Petrol	4/h
Install roofing superstructure	Unleaded Petrol	4/h
Erect seating tiers	Unleaded Petrol	4/h
Air Compressor		
Erect seating tiers	Diesel Fuel	6/h

For Your Reference…

To ***assign variable material*** consumption:

1. Double-click on the task, then click on the ***Resources*** tab
2. Select the material to assign
3. Type the unit and follow it with ***/h*** to indicate hourly usage, then click on **[OK]**

Handy to Know…

- Expressions such as ***16/h*** or ***2/d*** are defined as 16 ***per*** hour or 2 ***per*** day. In our example above Microsoft Project will enter ***16/h*** as 16 litres/h which means the graders together use 16 litres per hour of working time.

ADDING TO A MATERIAL ASSIGNMENT

You may need to apply the same material resource several times in the same task. For example, the ***Erect wall*** task requires the use of a grader and the air compressor, both of which use diesel fuel. We would like to assign the appropriate fuel for both of these items. Unfortunately, Microsoft Project doesn't allow you to add the same resource twice to a task!

Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file J409 Materials_5.mpp...

1. Click on ***Air Compressor*** in the upper pane to see all of the tasks in the lower pane

   We've already entered the fuel assignment for the grader…

2. Double-click on ***Erect wall*** to display the ***Task Information*** dialog box

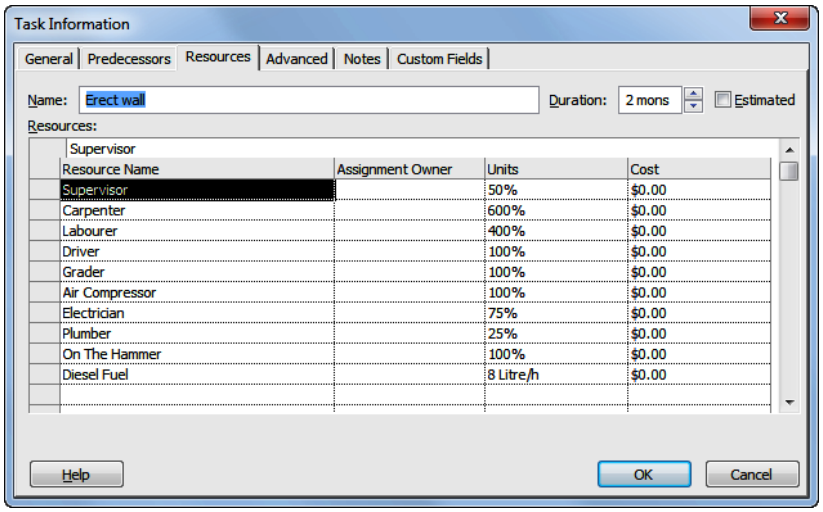
   Notice that Diesel Fuel already appears here. The compressor uses 6 litres per hour. We can adjust the present unit rate to include this usage…

3. Click on ***8 Litre/h*** in ***Unit*** for ***Diesel Fuel***

4. Type **14/h** and press Enter

5. Click on **[OK]** to record this entry

6. Repeat steps ***2*** through to ***5*** and increase the usage of ***Diesel Fuel*** for the ***Install roofing superstructure*** task that uses the air compressor to **18/h**



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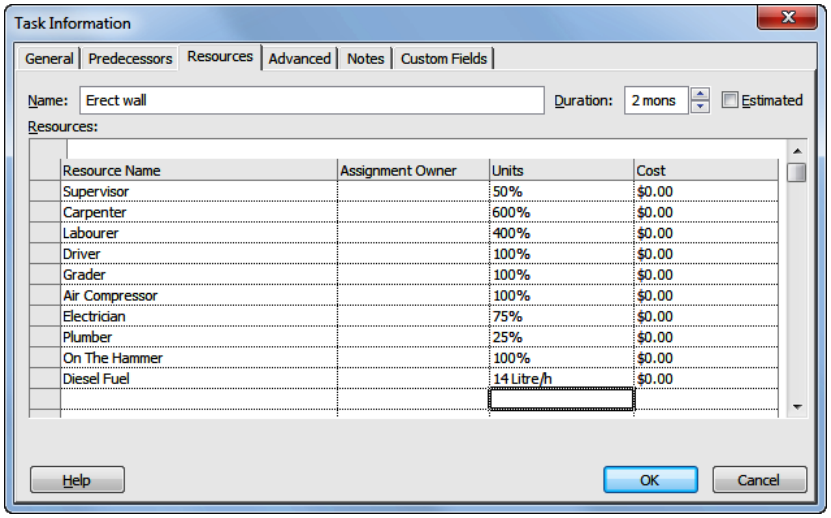

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For Your Reference…

To ***add*** to a ***material assignment***:

1. Double-click on the task that has the material resource already assigned, then click on the ***Resource*** tab
2. Adjust the units for the material resource
3. Click on **[OK]**

Handy to Know…

- Don't be fooled! Microsoft Project will appear to let you enter the same assignment twice. You can happily type it away into the ***Task Information*** dialog box. However, when you click on **[OK]** the previous assignment will be wiped away and replaced with the one you've just typed!

CHECKING WORK FOR MATERIALS

Microsoft Project allows you to view the tasks that material resources have been applied to in exactly the same way as you view work resources. The easiest view to use is the ***Task Entry*** view as it shows you detailed information about the resource assignment in the lower pane.

Try This Yourself:

Same File *Continue using the previous file with this exercise, or open the file J409 Materials_6.mpp...*

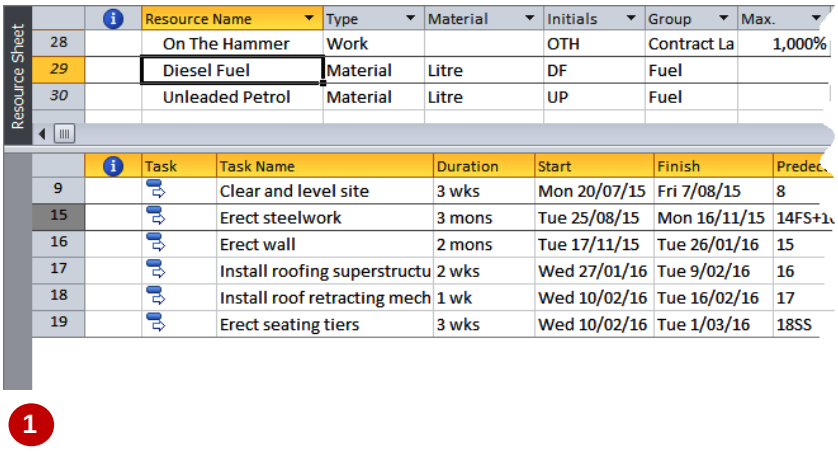
1. Scroll to and click on ***Diesel Fuel*** in the top pane to see all of the tasks that use this resource in the lower pane

   While this is useful it doesn't provide a guide to actual usage or quantities…

2. Click on the ***View*** tab on the ***Ribbon***, click on the drop arrow for ***Details*** and click on ***Resource Usage*** to see the proposed fuel usage for each task

3. Click on some of the other materials in the top pane to see quantities required and usage in the lower pane

4. Click on the ***View*** tab on the ***Ribbon*** and click on ***Gantt Chart***, then click on ***Details*** in ***Split View*** to return to a single view



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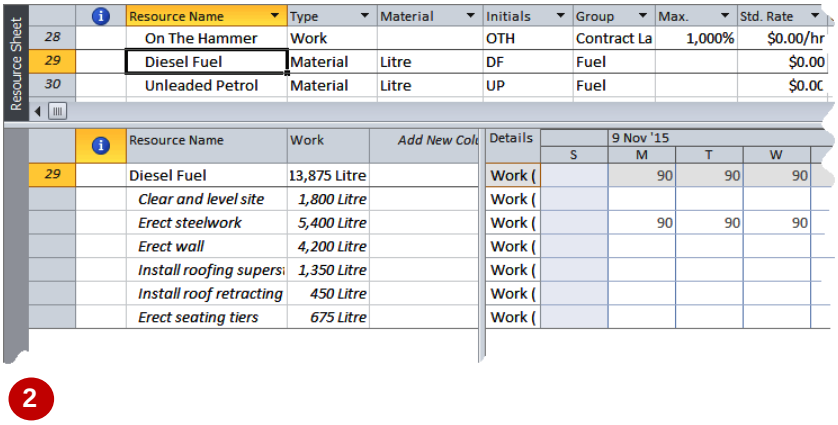

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For Your Reference…

To check for ***material resource quantities***:

1. Split the view with resources at the top and resource usage at the bottom
2. Click on the material in the top pane to see the usage and quantities in the bottom pane for each task

Handy to Know…

- The ***Resource Usage*** view has the added benefit of showing you the quantities required on a regular and periodic basis. This is great for ordering purposes.

NOTES: