Many hosted P6 environments, such as Oracle Hosting, restrict access to your P6 Database and your Oracle Primavera Cloud (OPC) Database for Dashboard and Report Development and Data Analysis

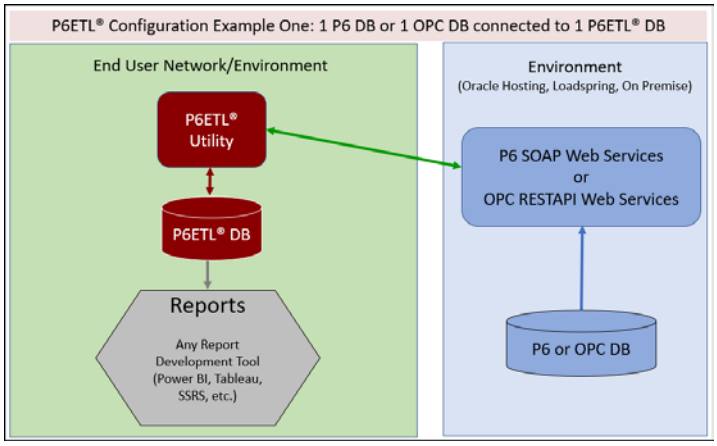
# P6ETL® for BI Reporting Solves that Problem!

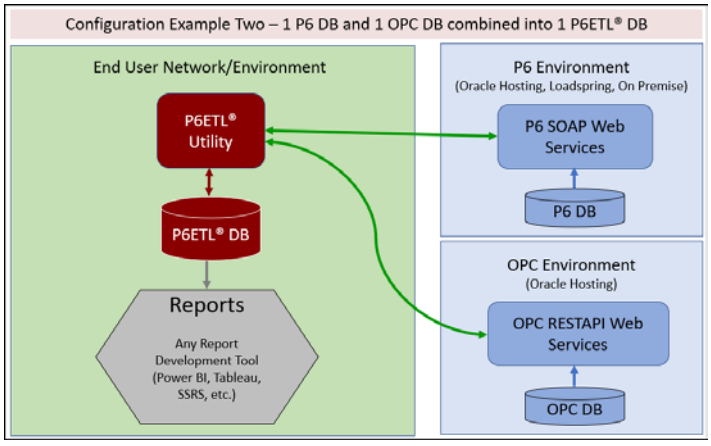
## Overview

P6ETL® for BI Reporting is a software utility that extracts P6 data and/or Oracle Primavera Cloud (OPC) data from a hosted environment using Web Services and loads the data into the P6ETL® Database (DB). The P6ETL® DB is a Microsoft SQL Server DB. Once the P6 or OPC data are loaded into the P6ETL® DB, BI dashboards and reports can be created by connecting to the P6ETL® DB using any BI dashboard/report development tool that supports Microsoft SQL Server (MSSQL).

The P6ETL® DB scheme is very similar to the P6 Reporting Database scheme created during the publishing step in P6 EPPM however P6ETL® is not dependent on the P6 EPPM's publishing step. P6ETL® extracts data directly from the P6 or OPC DB using Web Services.

**Two Typical Configurations**




## Features

**For P6**, P6ETL® populates 60 tables in the P6ETL® DB. Using these 60 tables, users can create robust BI dashboards and reports using tools such as Power BI. See Power BI Report Examples below. The 60 tables are:

| | | | |
|---|---|---|---|
| • P6ACTIVITY | • P6CALENDAR | • P6PROJECTFUNDING | • P6RISKMATRIXSCORETYPE |
| • P6ACTIVITYCODE | • P6COSTACCOUNT | • P6PROJECTNOTE | • P6RISKRESPONSEACTION |
| • P6ACTIVITYCODEASSIGNMENT | • P6EPS | • P6PROJECTRESOURCE | • P6RISKRESPONSEACTIONIMPACT |
| • P6ACTIVITYCOMMENT | • P6EPSHIERARCHY | • P6PROJECTSPENDINGPLAN | • P6RISKRESPONSEPLAN |
| • P6ACTIVITYEXPENSE | • P6EXPENSECATEGORY | • P6RELATIONSHIP | • P6RISKSCOREMATRIX |
| • P6ACTIVITYNOTE | • P6FINANCIALPERIOD | • P6REPORTDATE | • P6RISKSCORETYPE |
| • P6ACTIVITYPERIODACTUAL | • P6FUNDINGSOURCE | • P6RESASSIGNMENTPERIODACTUAL | • P6RISKTHRESHOLDLEVEL |
| • P6ACTIVITYRISK | • P6LOCATION | • P6RESOURCEASSIGNMENT | • P6RISKTYPE |
| • P6ACTIVITYSPREAD | • P6NOTEBOOKTOPIC | • P6RESOURCEASSIGNMENTSPREAD | • P6ROLE |
| • P6ACTIVITYSTEP | • P6OBS | • P6RESOURCECODE | • P6UDFTYPE |
| • P6BASELINETYPE | • P6OVERHEADCODE | • P6RESOURCECODEASSIGNMENT | • P6USEROBS |
| • P6BLACTIVITY | • P6PROJECT | • P6RESOURCES | • P6USERS |
| • **P6BLACTIVITYSPREAD(1)** | • P6PROJECT_UDFVALUE | • P6RISK | • P6WBS |
| • P6BLPROJECT | • P6PROJECTBUDGETCHANGELOG | • P6RISKIMPACT | • P6WBSCATEGORY |
| • **P6BLRESOURCEASSIGNMENTSPREAD(1)** | • P6PROJECTCODEASSIGNMENT | • P6RISKMATRIXSCORE | • P6WBSHIERARCHY |

**(1) Only available in the P6ETL® DB. These tables do not exist in the P6 Reporting DB.**

**For OPC**, P6ETL® populates 21 tables in the P6ETL® DB. Additional tables will be added in the future. Using these 21 tables, users can create BI dashboards and reports using tools such as Power BI. The 21 tables are:

| | | | |
|---|---|---|---|
| • P6ACTIVITY | • P6EPS (Workspaces in OPC) | • P6PROJECTCASHFLOWS | • P6RESOURCECODEASSIGNMENT |
| • P6ACTIVITYCODEASSIGNMENT | • P6EPSHIERARCHY | • P6PROJECTCODEASSIGNMENT | • P6RESOURCES |
| • P6BASELINETYPE | • P6LOCATIONS | • P6RELATIONSHIP | • P6UDFTYPE |
| • P6BLACTIVITY | • P6PROJECT | • P6REPORTDATE | • P6WBS |
| • P6BLPROJECT | • P6PROJECT_UDFVALUE | • P6RESOURCEASSIGNMENT | • P6WBSHIERARCHY |
| • P6CALENDAR | | | |

## Features (cont.)

- **Extracts P6 and OPC Data from Hosted Environments**
  P6ETL® extracts P6 and/or OPC data from hosted environments such as Oracle Hosting, OCI, Loadspring, and even your own on-premise environment - and then P6ETL® loads the P6 and/or OPC data into the P6ETL® DB. The primary requirement for P6ETL® is that the hosted environment must be running the P6 SOAP Web Services for P6 and OPC RESTAPI Web Services for OPC. Web Services are a standard component in the hosted environment for enterprise editions.

- **Robust Database Scheme that mimics the P6 Reporting Database found in P6 EPPM**
  The P6ETL® DB is a robust reporting DB and it is based on the same reporting DB that BI Publisher developers use when developing BI Publisher Data Models. HOWEVER, P6ETL® is not dependent on the publishing step in P6 EPPM. P6ETL® uses Web Services to extract data directly from the P6 or OPC DB.

  **For P6**, the P6ETL® DB has all the calculated and time-phased data needed for advanced report development. And the column names in the P6ETL® DB match the column names used on P6 layouts created in P6 PPM and/or P6 EPPM.

  **For OPC**, the same table names and column names used for the P6 data are reused for OPC data however, there are a few additional columns for OPC data. Currently, Oracle did not have the OPC Web Services for time-phased data.

- **Combine Multiple P6 and/or OPC Databases into a Single P6ETL® Database**
  To simplify report development, P6ETL® can combine 2 or more P6 and OPC DB's into a single P6ETL® DB for portfolio-level and enterprise-wide consolidated BI reporting.

- **Split One P6 or OPC Database into Multiple P6ETL® Databases**
  For those situations where users need to provide P6 or OPC data to partners or clients for specific projects, P6ETL® can extract specific projects from P6 or OPC - and then load the project data into separate P6ETL® DB's.

- **Snapshot**
  P6ETL® has a Snapshot feature that can be configured to create daily, weekly, and/or monthly snapshots of both global and project data. Snapshots are similar to baselines. Using the Snapshot data, reports can be developed to compare project data between the current active projects and any previous Snapshot for those projects. With Snapshot data, reports can be developed to identify trends and to analyze projects over time.

- **Project Filtering**
  Instead of loading all project data into the P6ETL® DB, P6ETL® has several filtering options that can be applied to control which projects and baselines are extracted from P6 and OPC and loaded into the P6ETL® DB. For example, a filter can be created that only extracts projects under a specific EPS or Workspace node. Or apply an additional Project Code filter to further narrow down the list of projects to be loaded into the P6ETL® DB.

- **Automatically Synchronize the P6ETL® Database**
  After the P6ETL® DB is initially loaded, scheduled jobs are configured to update the P6ETL® DB on a daily-basis or throughout the day (depending on the number and size of the projects to be updated).

  P6ETL® runs in batch mode, not real-time mode, therefore the data in the P6ETL® DB could be several hours older than the data in the P6 or OPC Production DB. However, if certain projects, such as turnaround projects, need to be updated more frequently, jobs can be configured for those special projects to run every 15 or 30 minutes(depending on the number and size of those special projects).

## Power BI Example Reports

With the purchase of P6ETL® for BI Reporting, customers will be given these 6 Power BI example reports along with SQL query examples to help them with report development.

### Report 1 - Resource Progress Report

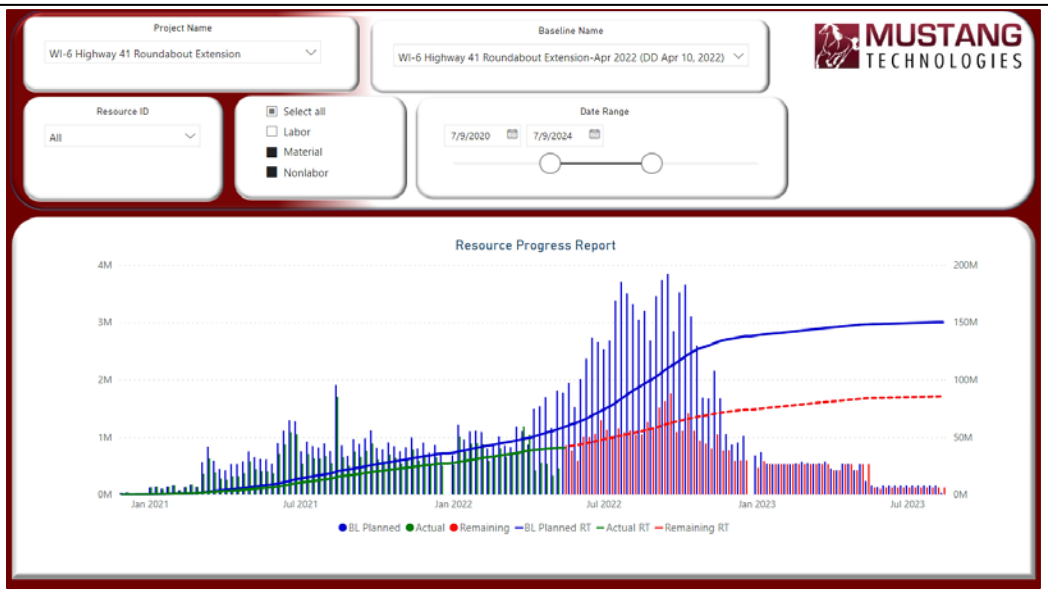
This report tracks the progress of the current project's resources against one of the project's BL's

To run the report: First, the user selects a current project using the **Project Name** filter. Next, the user selects one of the project's baselines using the **Baseline Name** filter.

The BLUE line and bars represent the planned baseline. The GREEN line and bars represent the actuals. The RED line and bars represent the remaining work.

By comparing the BLUE and RED lines, users can quickly determine if a project is on budget

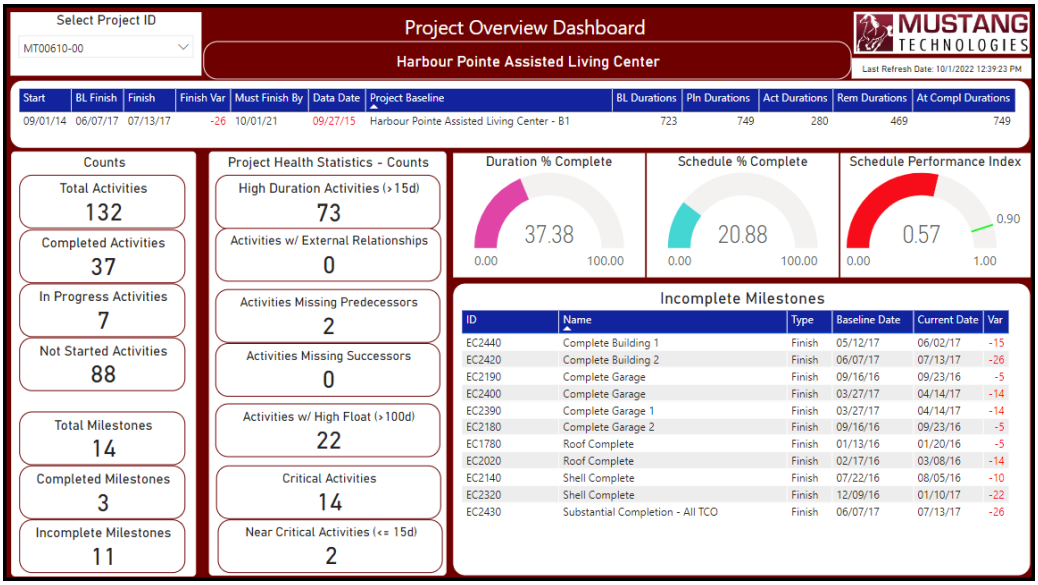
Using the **Resource ID, Labor Type,** and **Date Range** filters, users can narrow the chart's results




### Report 2 - Project Overview Dashboard

This dashboard provides an overview of a project and a few project health statistics such as activities with missing predecessors and/or successors.

To run the report: First, select a project using the **Select Project ID** filter. Next, the user can view the activities under each metric under the Counts sections by clicking on the metric.

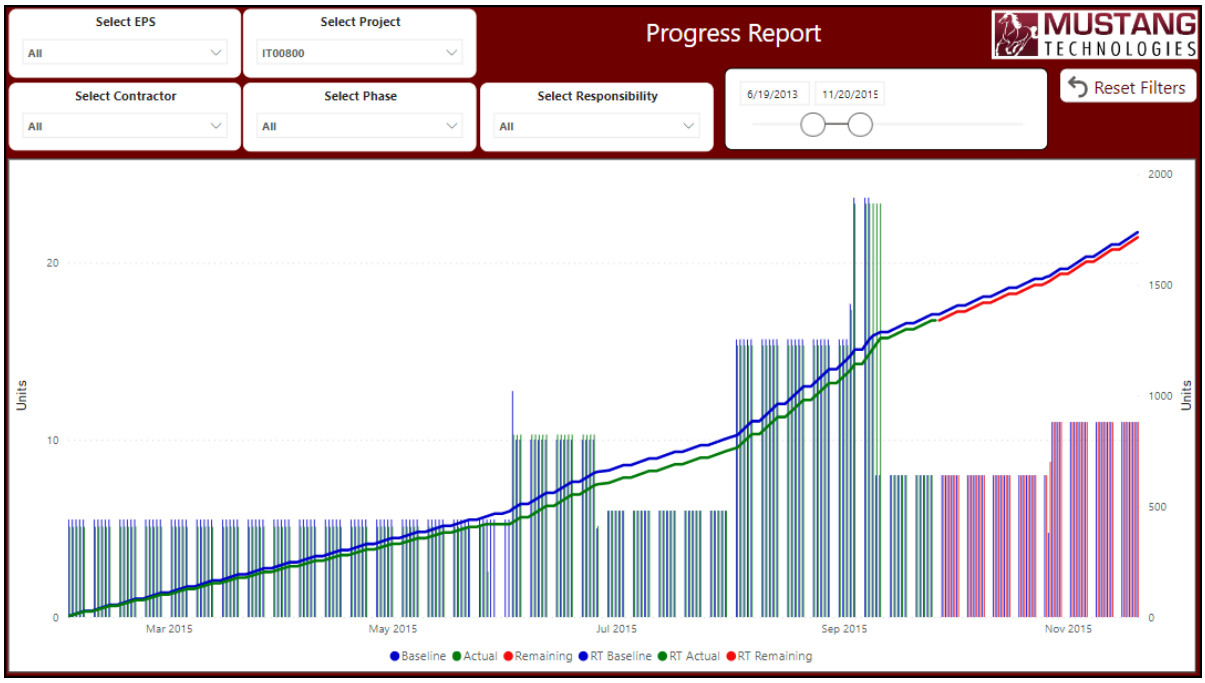


## Report 3 - Progress Report

This report tracks a project's progress using activity labor units.

The time-phased data on this report is by the day therefore the bars represent the labor units for each day of the project. The report displays the baseline, actual, and remaining labor units by day as well as the running total for each (via the S-Curve) .

Users can narrow the results of the chart by selecting activity codes such as Contractor, Phase, and/or Responsibility.



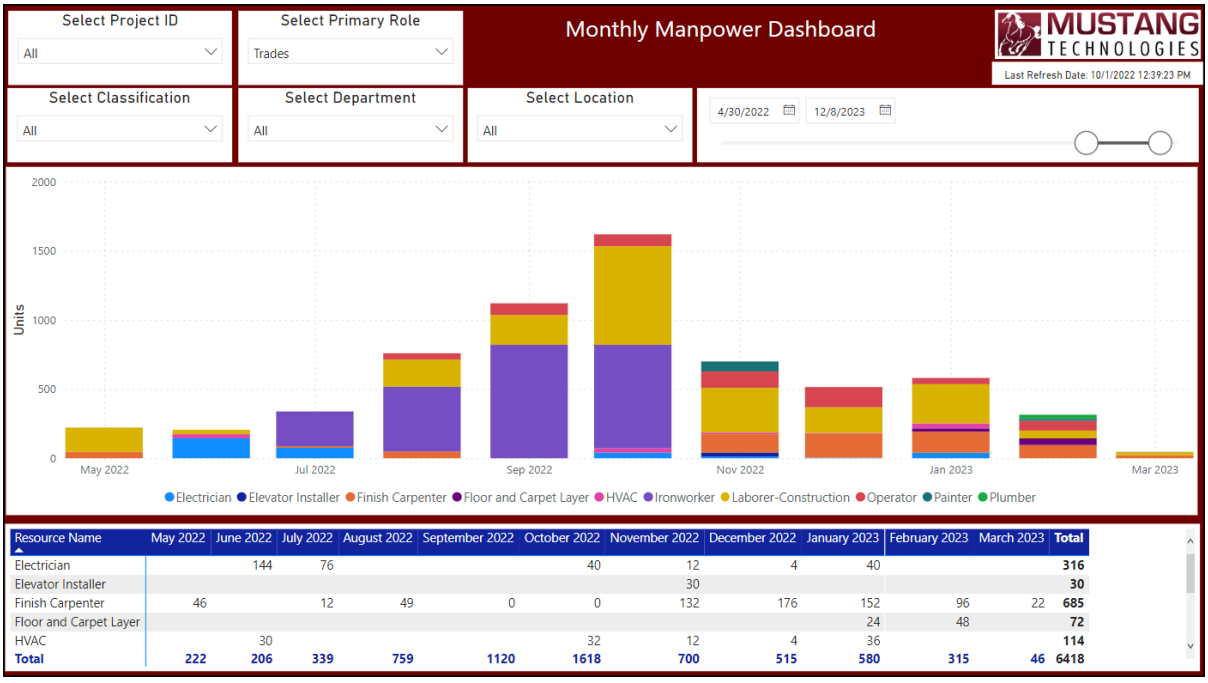

## Report 4 – Monthly Manpower Dashboard

This dashboard shows the manpower requirements for each month for a single project, multiple projects, or all projects.

Users can narrow the results by selecting a Primary Role or a Resource Code such as Classification, Department and/or Location.

The table, below the chart, displays the manhours per month by Resource Name.

In addition, users can narrow the timeframe of the dashboard by adjusting the time-scale slicer.



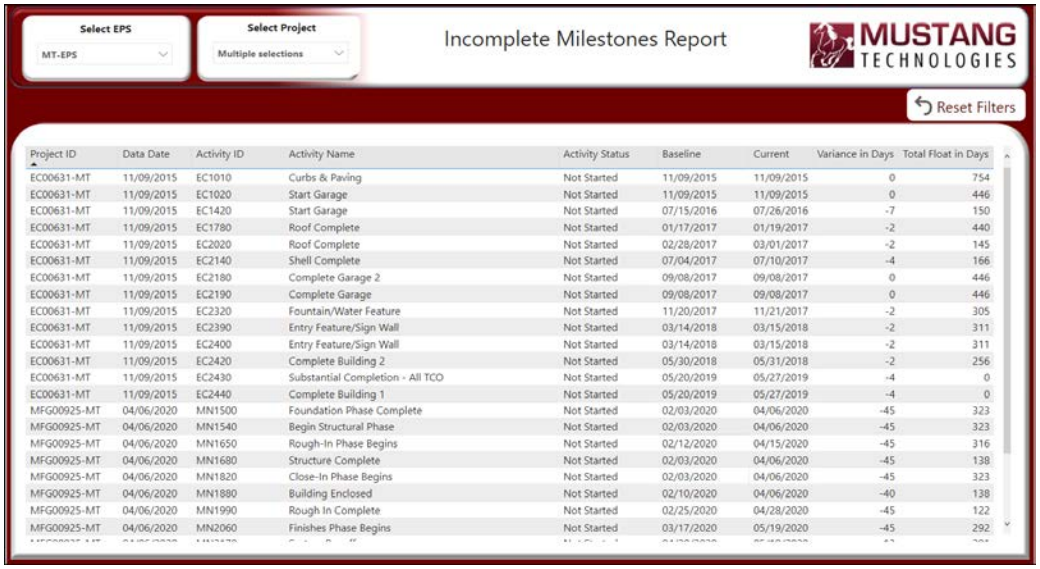

| Resource Name | May 2022 | June 2022 | July 2022 | August 2022 | September 2022 | October 2022 | November 2022 | December 2022 | January 2023 | February 2023 | March 2023 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Electrician | | 144 | 76 | | | 40 | 12 | 4 | 40 | | | 316 |
| Elevator Installer | | | | | | | 30 | | | | | 30 |
| Finish Carpenter | 46 | | 12 | 49 | 0 | 0 | 132 | 176 | 152 | 96 | 22 | 685 |
| Floor and Carpet Layer | | | | | | | | | 24 | 48 | | 72 |
| HVAC | | 30 | | | | 32 | 12 | 4 | 36 | | | 114 |
| **Total** | **222** | **206** | **339** | **759** | **1120** | **1618** | **700** | **515** | **580** | **315** | **46** | **6418** |

Report 5 - Incomplete Milestones Report

This report has all the incomplete Start and Finish Milestones for all projects.

Using the **Select EPS** and **Select Project** filters, users can select a subset of activities by selecting 1 or more EPS nodes and/or projects.

The results can be exported to an EXCEL file.




| Project ID | Data Date | Activity ID | Activity Name | Activity Status | Baseline | Current | Variance in Days | Total Float in Days |
|---|---|---|---|---|---|---|---|---|
| EC00631-MT | 11/09/2015 | EC1010 | Curbs & Paving | Not Started | 11/09/2015 | 11/09/2015 | 0 | 754 |
| EC00631-MT | 11/09/2015 | EC1020 | Start Garage | Not Started | 11/09/2015 | 11/09/2015 | 0 | 446 |
| EC00631-MT | 11/09/2015 | EC1420 | Start Garage | Not Started | 07/15/2016 | 07/26/2016 | -7 | 150 |
| EC00631-MT | 11/09/2015 | EC1780 | Roof Complete | Not Started | 01/17/2017 | 01/19/2017 | -2 | 440 |
| EC00631-MT | 11/09/2015 | EC2020 | Roof Complete | Not Started | 02/28/2017 | 03/01/2017 | -2 | 145 |
| EC00631-MT | 11/09/2015 | EC2140 | Shell Complete | Not Started | 07/04/2017 | 07/10/2017 | -4 | 166 |
| EC00631-MT | 11/09/2015 | EC2180 | Complete Garage 2 | Not Started | 09/08/2017 | 09/08/2017 | 0 | 446 |
| EC00631-MT | 11/09/2015 | EC2190 | Complete Garage | Not Started | 09/08/2017 | 09/08/2017 | 0 | 446 |
| EC00631-MT | 11/09/2015 | EC2320 | Fountain/Water Feature | Not Started | 11/20/2017 | 11/21/2017 | -2 | 305 |
| EC00631-MT | 11/09/2015 | EC2390 | Entry Feature/Sign Wall | Not Started | 03/14/2018 | 03/15/2018 | -2 | 311 |
| EC00631-MT | 11/09/2015 | EC2400 | Entry Feature/Sign Wall | Not Started | 03/14/2018 | 03/15/2018 | -2 | 311 |
| EC00631-MT | 11/09/2015 | EC2420 | Complete Building 2 | Not Started | 05/30/2018 | 05/31/2018 | -2 | 256 |
| EC00631-MT | 11/09/2015 | EC2430 | Substantial Completion - All TCO | Not Started | 05/20/2019 | 05/27/2019 | -4 | 0 |
| EC00631-MT | 11/09/2015 | EC2440 | Complete Building 1 | Not Started | 05/20/2019 | 05/27/2019 | -4 | 0 |
| MFG00925-MT | 04/06/2020 | MN1500 | Foundation Phase Complete | Not Started | 02/03/2020 | 04/06/2020 | -45 | 323 |
| MFG00925-MT | 04/06/2020 | MN1540 | Begin Structural Phase | Not Started | 02/03/2020 | 04/06/2020 | -45 | 323 |
| MFG00925-MT | 04/06/2020 | MN1650 | Rough-In Phase Begins | Not Started | 02/12/2020 | 04/15/2020 | -45 | 316 |
| MFG00925-MT | 04/06/2020 | MN1680 | Structure Complete | Not Started | 02/03/2020 | 04/06/2020 | -45 | 138 |
| MFG00925-MT | 04/06/2020 | MN1820 | Close-In Phase Begins | Not Started | 02/03/2020 | 04/06/2020 | -45 | 323 |
| MFG00925-MT | 04/06/2020 | MN1880 | Building Enclosed | Not Started | 02/10/2020 | 04/06/2020 | -40 | 138 |
| MFG00925-MT | 04/06/2020 | MN1990 | Rough In Complete | Not Started | 02/25/2020 | 04/28/2020 | -45 | 122 |
| MFG00925-MT | 04/06/2020 | MN2060 | Finishes Phase Begins | Not Started | 03/17/2020 | 05/19/2020 | -45 | 292 |

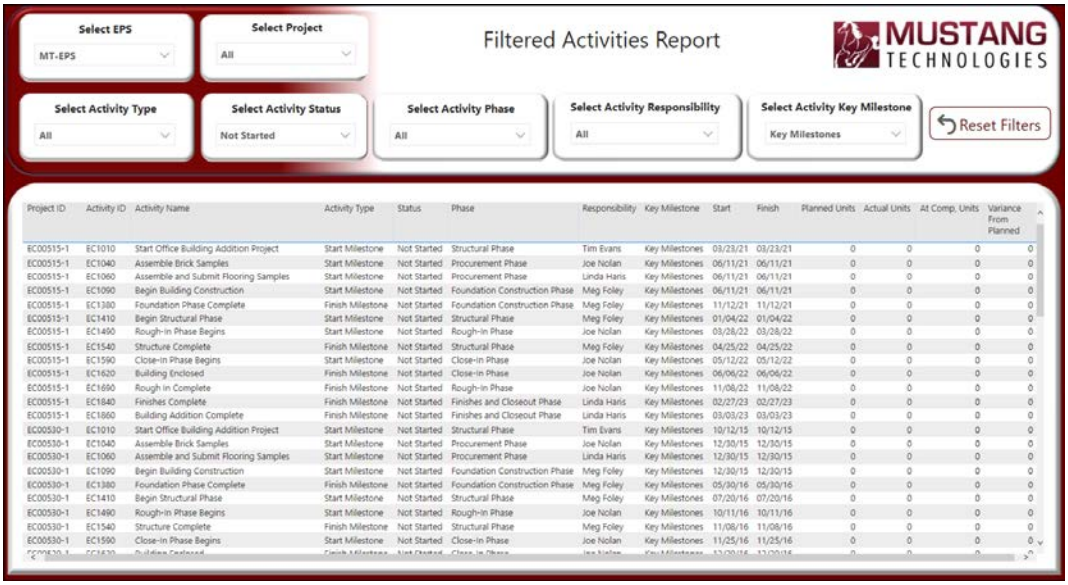
Report 6 - Filtered Activities Report

This report has all activities from all projects.

Using the EPS, Project, Activity Type and Activity Status filters, users can select a subset of activities by selecting 1 or more EPS nodes, Projects, Activity Types and/or Activity Statuses.

And if activities were assigned one of the 3 activity codes (Phase, Responsibility, and/or Key Milestone), users can further refine their selection by selecting activity codes too.

The results can be exported to an EXCEL file.




| Project ID | Activity ID | Activity Name | Activity Type | Status | Phase | Responsibility | Key Milestone | Start | Finish | Planned Units | Actual Units | At Comp. Units | Variance From Planned |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EC00515-1 | EC1010 | Start Office Building Addition Project | Start Milestone | Not Started | Structural Phase | Tim Evans | Key Milestones | 03/23/21 | 03/23/21 | 0 | 0 | 0 | 0 |
| EC00515-1 | EC1040 | Assemble Brick Samples | Start Milestone | Not Started | Procurement Phase | Joe Nolan | Key Milestones | 06/11/21 | 06/11/21 | 0 | 0 | 0 | 0 |
| EC00515-1 | EC1060 | Assemble and Submit Flooring Samples | Start Milestone | Not Started | Procurement Phase | Linda Haris | Key Milestones | 06/11/21 | 06/11/21 | 0 | 0 | 0 | 0 |
| EC00515-1 | EC1090 | Begin Building Construction | Start Milestone | Not Started | Foundation Construction Phase | Meg Foley | Key Milestones | 06/11/21 | 06/11/21 | 0 | 0 | 0 | 0 |
| EC00515-1 | EC1380 | Foundation Phase Complete | Finish Milestone | Not Started | Foundation Construction Phase | Meg Foley | Key Milestones | 11/12/21 | 11/12/21 | 0 | 0 | 0 | 0 |
| EC00515-1 | EC1410 | Begin Structural Phase | Start Milestone | Not Started | Structural Phase | Meg Foley | Key Milestones | 01/04/22 | 01/04/22 | 0 | 0 | 0 | 0 |
| EC00515-1 | EC1490 | Rough-in Phase Begins | Start Milestone | Not Started | Rough-in Phase | Joe Nolan | Key Milestones | 03/28/22 | 03/28/22 | 0 | 0 | 0 | 0 |
| EC00515-1 | EC1540 | Structure Complete | Finish Milestone | Not Started | Structural Phase | Meg Foley | Key Milestones | 04/25/22 | 04/25/22 | 0 | 0 | 0 | 0 |
| EC00515-1 | EC1590 | Close-in Phase Begins | Start Milestone | Not Started | Close-in Phase | Joe Nolan | Key Milestones | 05/12/22 | 05/12/22 | 0 | 0 | 0 | 0 |
| EC00515-1 | EC1620 | Building Enclosed | Finish Milestone | Not Started | Close-in Phase | Joe Nolan | Key Milestones | 06/06/22 | 06/06/22 | 0 | 0 | 0 | 0 |
| EC00515-1 | EC1690 | Rough In Complete | Finish Milestone | Not Started | Rough-in Phase | Joe Nolan | Key Milestones | 11/08/22 | 11/08/22 | 0 | 0 | 0 | 0 |
| EC00515-1 | EC1840 | Finishes Complete | Finish Milestone | Not Started | Finishes and Closeout Phase | Linda Haris | Key Milestones | 02/27/23 | 02/27/23 | 0 | 0 | 0 | 0 |
| EC00515-1 | EC1860 | Building Addition Complete | Finish Milestone | Not Started | Finishes and Closeout Phase | Linda Haris | Key Milestones | 03/03/23 | 03/03/23 | 0 | 0 | 0 | 0 |
| EC00530-1 | EC1010 | Start Office Building Addition Project | Start Milestone | Not Started | Structural Phase | Tim Evans | Key Milestones | 10/12/15 | 10/12/15 | 0 | 0 | 0 | 0 |
| EC00530-1 | EC1040 | Assemble Brick Samples | Start Milestone | Not Started | Procurement Phase | Joe Nolan | Key Milestones | 12/30/15 | 12/30/15 | 0 | 0 | 0 | 0 |
| EC00530-1 | EC1060 | Assemble and Submit Flooring Samples | Start Milestone | Not Started | Procurement Phase | Linda Haris | Key Milestones | 12/30/15 | 12/30/15 | 0 | 0 | 0 | 0 |
| EC00530-1 | EC1090 | Begin Building Construction | Start Milestone | Not Started | Foundation Construction Phase | Meg Foley | Key Milestones | 12/30/15 | 12/30/15 | 0 | 0 | 0 | 0 |
| EC00530-1 | EC1380 | Foundation Phase Complete | Finish Milestone | Not Started | Foundation Construction Phase | Meg Foley | Key Milestones | 05/30/16 | 05/30/16 | 0 | 0 | 0 | 0 |
| EC00530-1 | EC1410 | Begin Structural Phase | Start Milestone | Not Started | Structural Phase | Meg Foley | Key Milestones | 07/20/16 | 07/20/16 | 0 | 0 | 0 | 0 |
| EC00530-1 | EC1490 | Rough-in Phase Begins | Start Milestone | Not Started | Rough-in Phase | Joe Nolan | Key Milestones | 10/11/16 | 10/11/16 | 0 | 0 | 0 | 0 |
| EC00530-1 | EC1540 | Structure Complete | Finish Milestone | Not Started | Structural Phase | Meg Foley | Key Milestones | 11/08/16 | 11/08/16 | 0 | 0 | 0 | 0 |
| EC00530-1 | EC1590 | Close-in Phase Begins | Start Milestone | Not Started | Close-in Phase | Joe Nolan | Key Milestones | 11/25/16 | 11/25/16 | 0 | 0 | 0 | 0 |

The above six Power BI example reports are provided "as is" without warranty or support.

P6ETL® users, with Power BI report development experience, can modify and enhance these reports using SQL, DAX, and/or Power Query without any financial obligation to Mustang. The above reports were created using P6 data, not OPC data. Oracle has not completed the Web Services for OPC therefore the data for the **Resource Progress Report** is not available. However, an experienced Power BI report developer could spread the OPC data in the Power BI report to create an S-Curve report.

**For a presentation, please contact Mustang Technologies at (920) 883-9048 or email us at info@MustangTechnologies.com**
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