WORK PLAN
LONG-TERM MONITORING AND REMEDIAL ACTION OPERATIONS AT SITE SSOO5 AIR FORCE PLANT 59, JOHNSON CITY, NEW YORK

Contract Number: FA8903-15-F-0038
Project Number: ACHQ20157001
CDRL A005

Prepared for

Air Force Civil Engineer Center

Prepared by

HydroGeoLogic, Inc.

Revision 1
December 2015

HGL
HydroGeoLogic, Inc

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This document was prepared by HydroGeoLogic, Inc. and has received the appropriate technical review and approval.

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LIST OF ACRONYMS AND ABBREVIATIONS

AFCEC	Air Force Civil Engineer Center
AFP 59	Air Force Plant 59
CoC	chain-of-custody
DoD	Department of Defense
ERPIMS	Environmental Restoration Program Information Management System
FSP	Field Sampling Plan
HGL	HydroGeoLogic, Inc.
IDW	investigation-derived waste
LTM	Long-Term Monitoring
MCL	maximum contaminant level
MS	matrix spike
MSD	matrix spike duplicate
RAO	Remedial Action Operations
TAL	TestAmerica Laboratory
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
USEPA	U.S. Environmental Protection Agency
VOC	volatile organic compounds
WP	work plan

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WORK PLAN
LONG-TERM MONITORING AND
REMEDIAL ACTION OPERATIONS AT SITE SS005
AIR FORCE PLANT 59, NEW YORK

1.0 INTRODUCTION

This Work Plan (WP) describes the procedures and techniques that will be used to conduct a one-time groundwater monitoring event in support of long-term monitoring (LTM) and remedial action operations (RAO) at Air Force Plant 59 (AFP 59) in Johnson City, New York (Figure 1.1). HydroGeoLogic, Inc. (HGL) has prepared this WP under contract to the Air Force Civil Engineer Center (AFCEC) as part of the requirements for Contract FA8903-15-R-0087. This WP contains the proposed project scope and objectives, reporting requirements, and Project Schedule (Appendix A).

1.1 PROPOSED PROJECT ACTIVITIES

The following activities will be completed during the execution of this task order:

1. Preparation of this WP and other supporting documents.
2. One round of groundwater sampling of 6 on-site AFP59 monitoring wells (SW-3, DW-3, SW-7, SW-4, DW-1, and SW-1) and 5 off-site monitoring wells (URS-3D, URS-2D, URS-2S, URS-5S, and BM-121). Samples will be analyzed for volatile organic compounds (VOC) (USEPA Method 8260B) and 1,4-Dioxane (USEPA Method 8270C, low-level).
3. Collection of one groundwater sample at the Johnson City (Camden Street) Municipal Well Field. The sample will be from a well before treatment. The sample will be analyzed for VOCs (USEPA Method 8260B) and 1,4-Dioxane (USEPA Method 522).
4. Preparation of an Abbreviated Monitoring Report presenting the data collected during the field investigation.

1.2 SUMMARY OF PREVIOUS INVESTIGATIONS

For a summary of previous investigations at AFP 59, refer to the *Final Work Plan for the Vapor Intrusion Investigation, Monitoring Well Abandonment, Groundwater Monitoring, and Fire Suppression Reservoir Investigation, AFP 59, Johnson City, New York* (AECOM, 2009a).

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2.0 PROJECT SCOPE AND OBJECTIVES

2.1 OBJECTIVES

The LTM objectives for this project are to sample and evaluate VOC levels in groundwater that are above current maximum contaminant level (MCL) standards.

2.2 SAMPLE ANALYSIS SUMMARY

The proposed laboratory analyses for the groundwater samples are based on the types of chemicals used at AFP 59 and the chemicals previously detected in samples collected in the study area. A summary of the proposed laboratory analyses, including the number of environmental samples and quality assurance/quality control (QA/QC) samples, is provided below in Table 2-1.

Table 2-1
Sample Analysis Summary

Method	Matrix	Samples	Equipment Blanks	Ambient Blanks	Trip Blanks	Field Duplicates	MS/MSD Samples	Total Samples
USEPA Method 8260B	Groundwater	12	1	1	1	1	2	18
USEPA Method 8270C (low level) (1,4-dioxane)	Groundwater	11	1	0	0	2	2	16
USEPA Method 522	Groundwater	1	0	0	0	0	0	1

The monitoring well groundwater samples will be analyzed for VOCs (U.S. Environmental Protection Agency [USEPA] Method SW8260B) and 1,4-dioxane (USEPA Method 8270C low level). The Johnson City Municipal Well groundwater sample will be analyzed for VOCs (USEPA Method SW8260B) and 1,4-dioxane (USEPA Method 522). The samples collected for USEPA Method 8260B and USEPA Method 8270C (low-level) analyses will be analyzed by TestAmerica Laboratories (TAL). The sample collected for USEPA Method 522 analysis will be analyzed by GEL Laboratories.

Groundwater QA/QC samples will be collected as described in the Quality Assurance Project Plan (QAPP) (AECOM, 2009b). The QA/QC samples will be collected at the following rates:

- Trip Blanks – One trip blank will be sent with each cooler.
- Ambient Blanks – One ambient blank will be collected during groundwater sampling.
- Duplicate Samples – One duplicate will be collected from a groundwater sampling location that represents a target frequency of approximately 10 percent of project samples.

- Equipment Blanks – One equipment blank will be collected from groundwater sampling equipment.
- Matrix Spike (MS)/Matrix Spike Duplicate (MSD) – Two MS/MSD samples (one MS sample, one MSD sample) will be collected from a groundwater sampling location that represents a target frequency of approximately 5 percent of project samples.

Groundwater duplicate and MS/MSD sample identification codes are described below. An example identification code for QA/QC samples not related to sampling location (i.e., trip blanks, ambient blanks and equipment blanks) follows:

- **Trip Blanks** = TBMMDDYY; if more than one trip blank is required in 1 day, an A or B will be used to distinguish between blanks.
- **Ambient Blanks** = ABMMDDYY; if more than one ambient blank is required in 1 day, an A or B will be used to distinguish between blanks, and a note will be made in the logbook and chain of custody (CoC) describing location and conditions that warranted collection of second sample.
- **Equipment Blanks** = EBMMDDYY; if more than one equipment blank is required in 1 day, an A, B, C, etc., will be used to distinguish between blanks, and a note will be made in the logbook and CoC to describe the equipment sampled.

3.0 PROJECT TASKS

This section describes the required field and laboratory tasks to be completed during this event.

3.1 LONG-TERM MONITORING TASKS

The objectives of the LTM sampling activities will be achieved through field sampling, which will include the following activities: (1) mobilization to and from the site by HGL personnel; (2) sampling of 11 groundwater monitoring wells; (3) sampling of one Johnson City well field (before treatment) and (4) disposal of investigative-derived wastes (IDW). A brief description of each field activity is provided in the following sections.

3.1.1 Mobilization

Groundwater sampling for all 11 on-site and off-site monitoring wells and one municipal well field location (one well before treatment) will be accomplished during one field mobilization. Activities associated with the initiation of the field investigation (e.g., securing identification badges and vehicle passes, and identifying and staging areas for equipment) will be coordinated with the facility point-of-contact.

3.1.2 Groundwater Sampling

Groundwater samples will be collected using the procedures found in the AFP 59 *Field Sampling Plan (FSP*) (HGL, 2015). Up to 12 groundwater samples will be collected and analyzed at a fixed, off-site laboratory for VOCs (USEPA Method 8260B) and 1,4-Dioxane (USEPA Method 8270C, low-level). Monitoring well locations are presented on Figure 3.1.

Groundwater samples will be obtained from 6 on-site AFP 59 monitoring wells (SW-3, DW-3, SW-7, SW-4, DW-1, and SW-1) and 5 off-site monitoring wells (URS-3D, URS-2D, URS-2S, URS-5S, and BM-121). An additional groundwater sample will be collected from the Municipal Well Field. The additional sample will be from one Johnson City Municipal Well Field well before treatment and analyzed at a fixed, off-site laboratory for VOCs (USEPA Method 8260B) and 1,4-Dioxane (USEPA Method 522). HGL will contact each of the property owners and facility operators (in accordance with past sampling practices at the site) prior to mobilization. HGL personnel will meet with each resident to answer additional questions if deemed necessary.

3.1.3 Waste Containment

HGL will use low-flow sampling for all 11 monitoring wells to limit the volume of purge water generated. The water sample collected from the Johnson City Municipal well field will be collected from a sample valve. Purge water will be disposed of by pouring directly onto the ground in the vicinity of each monitoring well for the on-site wells. Purge water will be collected and disposed of properly from the off-site residential area wells. HGL also will limit the use of disposable materials to the extent practicable.

3.1.4 Site Personnel

Table 3-1 lists anticipated project personnel.

Table 3-1
Personnel Responsibilities

Title	Name
AFCEC Contracting Officer Representative	Eliud Burgos
AFCEC Team Leader	George Walters
AFCEC Remedial Project Manager	Corey Lam
HGL Project Manager	Peter Dacyk
HGL Site Manager	Mike Jackson
Analytical Laboratory-Groundwater	TestAmerica Laboratories
Analytical Laboratory-Groundwater	GEL Laboratories
Health and Safety Professional	Steve Davis
Site Health and Safety Officer	Mike Jackson

3.2 SUBCONTRACTORS

The laboratories selected for this project based on cost and technical merit are TAL (located in North Canton, Ohio) and GEL Laboratories (located in Charleston, SC). TAL and GEL Laboratories will provide analytical data for the samples in a 3-week (21 working days) turnaround time and are Department of Defense (DoD) Environmental Laboratory Accreditation Program-certified laboratories. TAL and GEL Laboratories meet all applicable certification requirements and data quality and reporting requirements outlined in the QAPP (AECOM, 2009b).

4.0 DATA ASSESSMENT, RECORDS, AND REPORTING REQUIREMENTS

4.1 DATA ASSESSMENT

HGL will validate and review the analytical data generated from the analyses of the groundwater samples. HGL will receive data from the laboratory as an electronic deliverable that is consistent with the U.S. Air Force's Environmental Restoration Program Information Management System (ERPIMS) format. Each ERPIMS deliverable will be submitted utilizing the validation and delivery requirements established in ERP tools. ERPIMS submissions will be made using the ERPIMS 5.0 software suite and will be accompanied by a transmittal letter that will address any warnings generated during the validation process along with a Data Usability Summary Report and an electronic data delivery.

4.2 ABBREVIATED MONITORING REPORT

Upon receipt and validation of analytical data, HGL will prepare and submit an Abbreviated Monitoring Report that will fully document the groundwater monitoring activities completed and detail the findings of the data analysis. Based on the findings of the data analysis, recommendations for further investigation may or may not be included in the report. Draft and Final Abbreviated Monitoring Reports will be submitted by e-mail or compact disk and will be uploaded to the AFCEC Contractor Data Upload Tool website. The Abbreviated Monitoring Report will be consistent with past deliverables submitted for the project.

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5.0 REFERENCES

AECOM, 2009a. *Final Work Plan for the Vapor Intrusion Investigation, Monitoring Well Abandonment, Groundwater Monitoring, and Fire Suppression Reservoir Investigation, AFP 59, Johnson City, New York.* August.

AECOM, 2009b. *Final Quality Assurance Project Plan Vapor Intrusion Investigation, Groundwater Monitoring Activities, and Well Abandonment at Air Force Plant 59 Johnson City, New York.* August.

HydroGeoLogic, Inc. (HGL), 2015. *Field Sampling Plan for Basewide Long-Term Monitoring at AFP 59, Johnson City, New York.* October.

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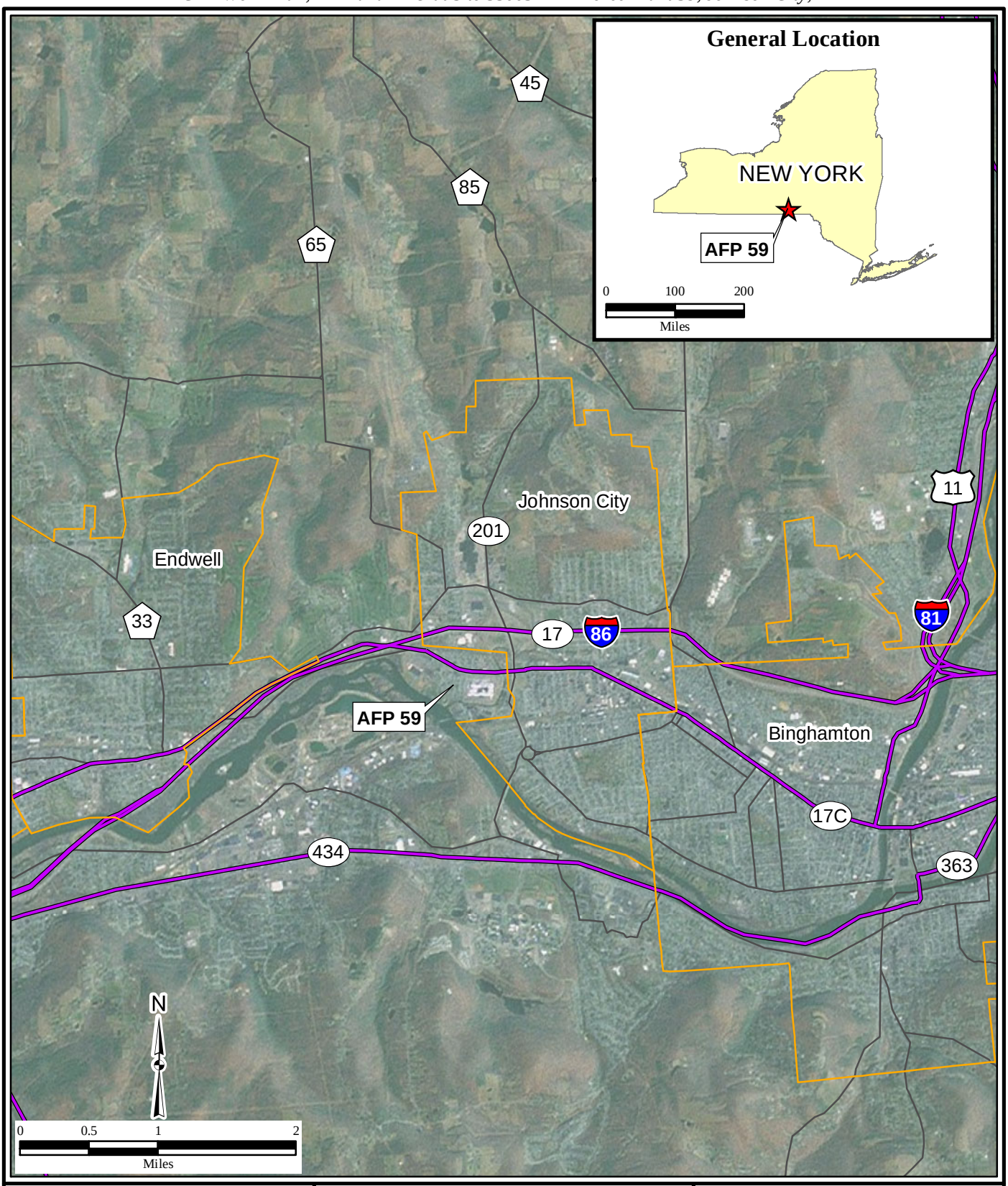
FIGURES



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9/25/2013 CNL
Source: HGL, ArcGIS Online Imagery

Legend

- Major Road
- Highway
- City Limit

Figure 1.1
Site Location

Figure 3.1
Monitoring Well Locations

Legend

- AFP 59 Monitoring Well
- Offsite Monitoring Well
- URS-9S — Monitoring Well Identification
- Road

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Source: HGL, AECOM
ArcGIS Online Imagery

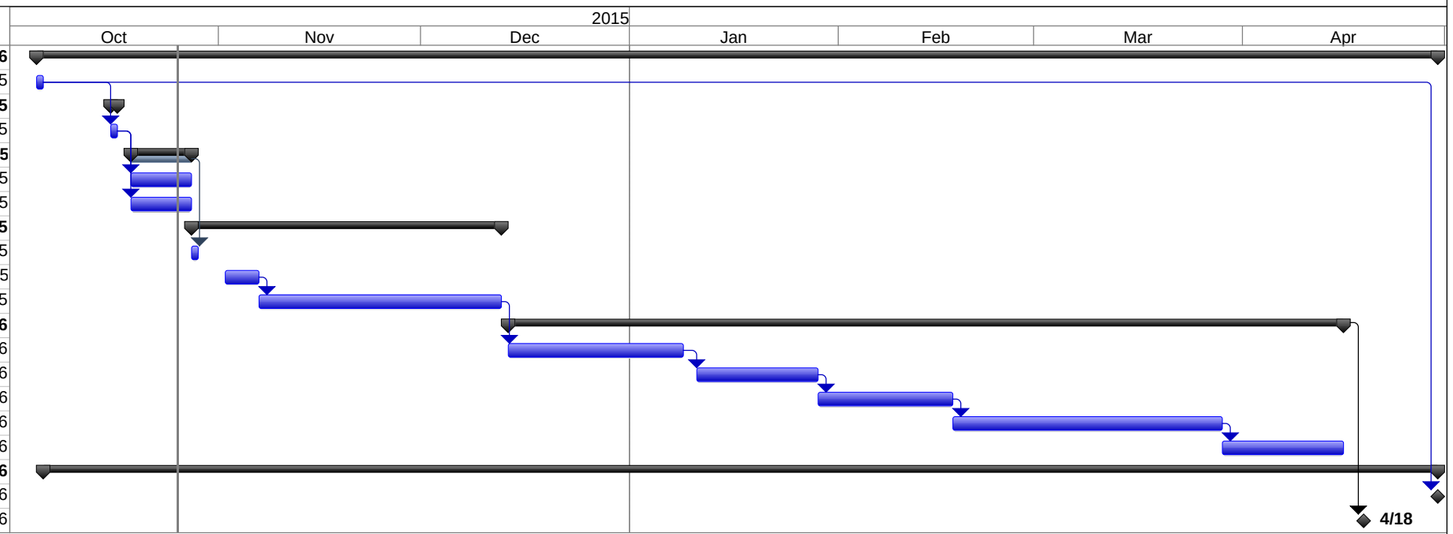
HGL HydroGeoLogic, Inc

APPENDIX A

PROJECT SCHEDULE

Air Force Plant 59
Appendix A - Project Schedule

ID	Task Name	Duration	Start	Finish
1	**LTM AFP-59**	**150 days**	**Mon 10/5/15**	**Fri 4/29/16**
2	Notice to Proceed	1 day	Mon 10/5/15	Mon 10/5/15
3	**Project Meetings**	**1 day**	**Fri 10/16/15**	**Fri 10/16/15**
4	Kickoff Meeting	1 day	Fri 10/16/15	Fri 10/16/15
5	**Planning Documents**	**7 days**	**Mon 10/19/15**	**Tue 10/27/15**
6	Work Plan Addendum (Draft, Final)	7 days	Mon 10/19/15	Tue 10/27/15
7	Sampling and Analysis Plan Addendum (Draft, Final)	7 days	Mon 10/19/15	Tue 10/27/15
8	**LTM Field Work**	**33 days**	**Wed 10/28/15**	**Sat 12/12/15**
9	Field Preparation	1 day	Wed 10/28/15	Wed 10/28/15
10	LTM Sampling and Analysis	5 days	Mon 11/2/15	Fri 11/6/15
11	Data Validation/Management/ERPIMS	36 edays	Fri 11/6/15	Sat 12/12/15
12	**Reports**	**90 days**	**Mon 12/14/15**	**Fri 4/15/16**
13	Prepare Draft Long-Term Monitoring Report	20 days	Mon 12/14/15	Fri 1/8/16
14	Air Force Review of Draft Long-Term Monitoring Report	14 days	Mon 1/11/16	Thu 1/28/16
15	Prepare Final Long-Term Monitoring Report	14 days	Fri 1/29/16	Wed 2/17/16
16	Regulatory Review of Long-Term Monitoring Report	28 days	Thu 2/18/16	Mon 3/28/16
17	Final (Revised) Long-Term Monitoring Report	14 days	Tue 3/29/16	Fri 4/15/16
18	**CPSMR**	**149 days**	**Tue 10/6/15**	**Fri 4/29/16**
19	CPSMRs	149 days	Tue 10/6/15	Fri 4/29/16
20	Project Closeout	1 day	Mon 4/18/16	Mon 4/18/16



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Date: Mon 10/26/15

Task	Rolled Up Progress	Inactive Task	Manual Summary Rollup	Deadline
Milestone	Split	Inactive Milestone	Manual Summary	
Summary	External Tasks	Inactive Summary	Start-only	
Rolled Up Task	Project Summary	Manual Task	Finish-only	
Rolled Up Milestone	Group By Summary	Duration-only	Progress	