

Attachment 5 – Schedule

A detailed project schedule based for each project has been included in this attachment. The tasks shown in each project schedule match the tasks listed in the workplan (Attachment 3) and the Budget (Attachment 4). All schedules were developed based on experience with similar projects completed by the proponents, Authority, or other agencies within the region, and are therefore believed to be reasonable. All five of the projects listed in the application will be ready to begin construction prior to October 2014. A rollup schedule showing one line per project to identify the start and completion dates is included as **Figure 5-1**. Work that has occurred, or will occur prior to grant award is not shown on the schedule, however as noted in the workplan some of the task items that are underway will continue. Even though the on-going monitoring tasks will continue for years after completion of construction, to simplify the printed schedule included in this application, those tasks are only included until the end of the calendar year in which the construction of that project will be complete.

Project A: FID – Southwest Groundwater Banking Project

A Gantt chart schedule for the project is included as **Figure 5-2**. The schedule shows the major tasks needed to complete the project. The schedule shows milestones, major deliverables and linkages between tasks. The schedule tasks are consistent with those used in the Work Plan and Budget. Several items for the project have already been completed and the project is ready for implementation in accordance with the grant deadlines. FID and JID continue to move forward with the project, and it is anticipated to be ready the anticipated October 2013 grant award. The schedule is based on the time required for completion of similar projects. The project is anticipated to be complete by June 2015.

Project B: Laguna Irrigation District – Recharge Basin 11 Project

A Gantt chart schedule for the project is included as **Figure 5-3**. The schedule shows the major tasks needed to complete the project. The schedule shows milestones, major deliverables and linkages between tasks. The schedule tasks are consistent with those used in the Work Plan and Budget.

The first task will include purchasing the land, which is expected to occur quickly since the District has a land appraisal and the owner has already signed an agreement to sell the land according to the appraisal value. The design and construction will require approximately 9 months. Canal work will have to be performed outside of the irrigation season so it does not interfere with normal water deliveries. Basin work could be performed any time of year, but may be best in the winter or spring when the soils have some residual moisture to assist with levee compaction. The District will perform most of the construction work and only the monitoring wells will be competitively bid.

Based on a review of permitting requirements and potential environmental issues, no major delays due to environmental documentation or permitting are anticipated. No time will be needed to develop financing since the cost share will be provided by in-kind construction services. The District considers

the schedule reasonable based on their experience constructing similar projects. It is anticipated that all work can be completed by the end of October 2015.

Project C: Bakman Water Supply Reliability and Conservation Project

A Gantt chart schedule for the project is included as **Figure 5-4**. The schedule shows the major tasks needed to complete the project. The schedule shows milestones, major deliverables and linkages between tasks. The schedule tasks are consistent with those used in the Work Plan and Budget.

Bakman has a previously approved Nitrate Blending Plan from CDPH, and has performed initial calculations related to blending and prepared a preliminary design concept for the wellhead treatment and blending equipment. A quote for the GAC vessels has been obtained based on the sizing calculations. Bakman has already installed several hundred meters. As part of the collaborative effort with other agencies, Bakman has also engaged multiple meter vendors and received quotes for meters, SCADA and AMR equipments. A meter vendor has also committed to pricing reductions. Bakman staff understand the timing required for meter installation, and the schedule has been prepared based on their experience and equipment lead time.

It is anticipated that all work can be completed by the end of December 2015.

Project D: San Joaquin Water Supply Reliability & Conservation Project

A Gantt chart schedule for the project is included as **Figure 5-5**. The schedule shows the major tasks needed to complete the project. The schedule shows milestones, major deliverables and linkages between tasks. The schedule tasks are consistent with those used in the Work Plan and Budget.

The City has engaged CDPH regarding the rehabilitation and re-operation of Well #4, and has received an initial quotation for the work required by a reputable well driller in the area that is experienced with similar projects. As part of the collaborative effort with other agencies, the City has also engaged meter vendors and is in the process of considering meter type and data collection methods. The schedule includes time for the City's engineer to finalize requirements for the meter installation and the well rehabilitation. The project is expected to be exempt from CEQA, and have limited permitting requirements as discussed in Attachment 3 – Workplan, so construction is expected to begin well before October 2014.

It is anticipated that all work can be completed by the end of October 2015.

Project E: City of Kerman Residential Water Meter Project

A Gantt chart schedule for the project is included as **Figure 5-6**. The schedule shows the major tasks needed to complete the project. The schedule shows milestones, major deliverables and linkages between tasks. The schedule tasks are consistent with those used in the Work Plan and Budget.

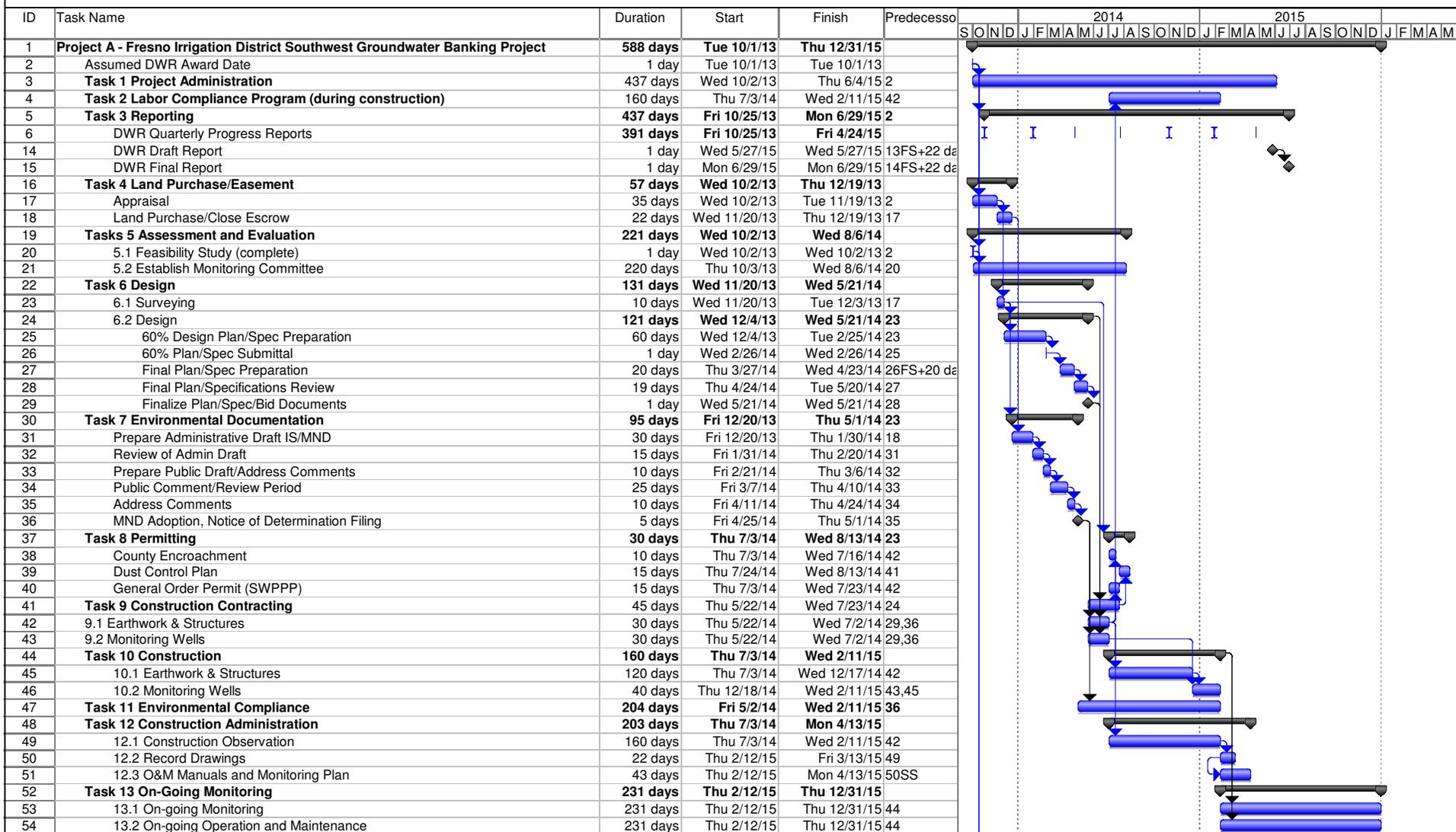
The City of Kerman has already installed several hundred meters, nearly 60% of the City. As part of the collaborative effort with other agencies, the City has also engaged multiple meter vendors and received quotes for meters, SCADA and AMR equipments. Kerman staff understands the timing required for meter installation, and the schedule has been prepared based on their experience and equipment lead time. The project is expected to be exempt from CEQA, and have limited permitting requirements as discussed in Attachment 3 – Workplan, so construction is expected to begin well before October 2014.

It is anticipated that all work can be completed by the end of October 2015.

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Figure 5-2



Project: Attachment 5 - Schedule
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Task		Summary		Rolled Up Progress		Project Summary	
Progress		Rolled Up Task		Split		Group By Summary	
Milestone		Rolled Up Milestone		External Tasks		Deadline	

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Figure 5-3

ID	Task Name	Duration	Start	Finish	Predecessor	2014												2015																							
						S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M			
55	Project B - Laguna Irrigation District - Recharge Basin 11 Project	588 days	Tue 10/1/13	Thu 12/31/15		[Gantt bar for Project B - Laguna Irrigation District - Recharge Basin 11 Project]																																			
56	Assumed DWR Award Date	1 day	Tue 10/1/13	Tue 10/1/13		[Gantt bar for Assumed DWR Award Date]																																			
57	Task 1 Project Administration	541 days	Wed 10/2/13	Wed 10/28/15	2	[Gantt bar for Task 1 Project Administration]																																			
58	Task 2 Labor Compliance Plan	215 days	Thu 7/3/14	Wed 4/29/15	86	[Gantt bar for Task 2 Labor Compliance Plan]																																			
59	Task 3 Reporting	524 days	Fri 10/25/13	Wed 10/28/15		[Gantt bar for Task 3 Reporting]																																			
60	DWR Quarterly Progress Reports	391 days	Fri 10/25/13	Fri 4/24/15		[Gantt bar for DWR Quarterly Progress Reports]																																			
68	DWR Draft Report	23 days	Wed 5/27/15	Fri 6/26/15	67FS+22 da	[Gantt bar for DWR Draft Report]																																			
69	DWR Final Report	66 days	Wed 7/29/15	Wed 10/28/15	68FS+22 da	[Gantt bar for DWR Final Report]																																			
70	Task 4 Assessment and Evaluation	391 days	Wed 11/20/13	Wed 5/20/15		[Gantt bar for Task 4 Assessment and Evaluation]																																			
71	4.1 Project Surveying	10 days	Wed 11/20/13	Tue 12/3/13	97	[Gantt bar for 4.1 Project Surveying]																																			
72	4.2 Liberty Canal Hydraulic Analysis	22 days	Wed 11/20/13	Thu 12/19/13	97	[Gantt bar for 4.2 Liberty Canal Hydraulic Analysis]																																			
73	4.3 Post Construction Geologic Evaluations	15 days	Thu 4/30/15	Wed 5/20/15	90	[Gantt bar for 4.3 Post Construction Geologic Evaluations]																																			
74	Task 5 Final Design	151 days	Wed 11/20/13	Wed 6/18/14		[Gantt bar for Task 5 Final Design]																																			
75	Geotechnical Investigation	44 days	Wed 11/20/13	Mon 1/20/14	97	[Gantt bar for Geotechnical Investigation]																																			
76	Preliminary Plans - 60% Plans/Specs	66 days	Wed 12/4/13	Wed 3/5/14	71	[Gantt bar for Preliminary Plans - 60% Plans/Specs]																																			
77	Preliminary Plans - 90% Plans/Specs	22 days	Thu 3/27/14	Fri 4/25/14	76FS+15 da	[Gantt bar for Preliminary Plans - 90% Plans/Specs]																																			
78	Final Plans and Specs	23 days	Mon 5/19/14	Wed 6/18/14	77FS+15 da	[Gantt bar for Final Plans and Specs]																																			
79	Task 6 Environmental Documentation	177 days	Wed 11/20/13	Thu 7/24/14		[Gantt bar for Task 6 Environmental Documentation]																																			
80	6.1 CEQA Initial Study	89 days	Wed 11/20/13	Mon 3/24/14	97	[Gantt bar for 6.1 CEQA Initial Study]																																			
81	6.2 Cultural Resources Survey	44 days	Tue 3/25/14	Fri 5/23/14	80	[Gantt bar for 6.2 Cultural Resources Survey]																																			
82	6.3 Biological Survey	44 days	Mon 5/26/14	Thu 7/24/14	81	[Gantt bar for 6.3 Biological Survey]																																			
83	Task 7 Permitting	15 days	Thu 6/19/14	Wed 7/9/14		[Gantt bar for Task 7 Permitting]																																			
84	Storm Water Pollution Prevention Plan	15 days	Thu 6/19/14	Wed 7/9/14	78	[Gantt bar for Storm Water Pollution Prevention Plan]																																			
85	Dust Control Plan	10 days	Thu 6/19/14	Wed 7/2/14	78	[Gantt bar for Dust Control Plan]																																			
86	County Permit (Road Encroachments)	10 days	Thu 6/19/14	Wed 7/2/14	78	[Gantt bar for County Permit (Road Encroachments)]																																			
87	Task 8 Construction Contracting (Wells Only)	25 days	Thu 7/10/14	Wed 8/13/14	83	[Gantt bar for Task 8 Construction Contracting (Wells Only)]																																			
88	Task 9 Construction	215 days	Thu 7/3/14	Wed 4/29/15		[Gantt bar for Task 9 Construction]																																			
89	9.1 Basin/Canal Earthwork and Structures	150 days	Thu 7/3/14	Wed 1/28/15	86	[Gantt bar for 9.1 Basin/Canal Earthwork and Structures]																																			
90	9.2 Monitoring Wells	65 days	Thu 1/29/15	Wed 4/29/15	89	[Gantt bar for 9.2 Monitoring Wells]																																			
91	Task 10 Env. Compliance & Mitigation (if required)	215 days	Thu 7/3/14	Wed 4/29/15	86	[Gantt bar for Task 10 Env. Compliance & Mitigation (if required)]																																			
92	Task 11 Construction Administration	230 days	Thu 7/3/14	Wed 5/20/15		[Gantt bar for Task 11 Construction Administration]																																			
93	Construction Staking	41 days	Thu 7/3/14	Thu 8/28/14	86	[Gantt bar for Construction Staking]																																			
94	Construction Oversight	215 days	Thu 7/3/14	Wed 4/29/15	86	[Gantt bar for Construction Oversight]																																			
95	Compaction Testing	43 days	Thu 7/3/14	Mon 9/1/14	86	[Gantt bar for Compaction Testing]																																			
96	Record Drawings	15 days	Thu 4/30/15	Wed 5/20/15	90	[Gantt bar for Record Drawings]																																			
97	Task 12 Land Acquisition	35 days	Wed 10/2/13	Tue 11/19/13	2	[Gantt bar for Task 12 Land Acquisition]																																			
98	Task 13 On-Going Monitoring	176 days	Thu 4/30/15	Thu 12/31/15		[Gantt bar for Task 13 On-Going Monitoring]																																			
99	13.1 On-going Monitoring	176 days	Thu 4/30/15	Thu 12/31/15	88	[Gantt bar for 13.1 On-going Monitoring]																																			
100	13.2 On-going Operation and Maintenance	176 days	Thu 4/30/15	Thu 12/31/15	88	[Gantt bar for 13.2 On-going Operation and Maintenance]																																			

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Task		Summary		Rolled Up Progress		Project Summary	
Progress		Rolled Up Task		Split		Group By Summary	
Milestone		Rolled Up Milestone		External Tasks		Deadline	

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Figure 5-4

ID	Task Name	Duration	Start	Finish	Predecessor	2014												2015																							
						S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M			
101	Project C - Bakman WC - Water Supply Reliability and Conservation Project	661 days	Tue 10/1/13	Tue 4/12/16		[Gantt chart bar for Project C]																																			
102	Assumed DWR Award Date	1 day	Tue 10/1/13	Tue 10/1/13		[Gantt chart bar for Assumed DWR Award Date]																																			
103	Task 1 Administration	540 days	Wed 10/2/13	Tue 10/27/15	102	[Gantt chart bar for Task 1 Administration]																																			
104	Task 2 Labor Compliance Program	450 days	Wed 4/2/14	Tue 12/22/15	134	[Gantt chart bar for Task 2 Labor Compliance Program]																																			
105	Task 3 Reporting	572 days	Fri 10/25/13	Mon 1/4/16		[Gantt chart bar for Task 3 Reporting]																																			
106	DWR Quarterly Progress Reports	526 days	Fri 10/25/13	Fri 10/30/15		[Gantt chart bar for DWR Quarterly Progress Reports]																																			
115	DWR Quarterly Progress Reports 9	1 day	Fri 10/30/15	Fri 10/30/15		[Gantt chart bar for DWR Quarterly Progress Reports 9]																																			
116	DWR Draft Report	1 day	Wed 12/2/15	Wed 12/2/15	115FS+22 c	[Gantt chart bar for DWR Draft Report]																																			
117	DWR Final Report	1 day	Mon 1/4/16	Mon 1/4/16	116FS+22 c	[Gantt chart bar for DWR Final Report]																																			
118	Task 4 Assessment and Evaluation	60 days	Wed 10/2/13	Tue 12/24/13	2	[Gantt chart bar for Task 4 Assessment and Evaluation]																																			
119	Task 5 Final Design	80 days	Wed 12/25/13	Tue 4/15/14	118	[Gantt chart bar for Task 5 Final Design]																																			
120	5.1 Wellhead Improvement	80 days	Wed 12/25/13	Tue 4/15/14		[Gantt chart bar for 5.1 Wellhead Improvement]																																			
121	Draft Drawings and Specifications	40 days	Wed 12/25/13	Tue 2/18/14		[Gantt chart bar for Draft Drawings and Specifications]																																			
122	CDPH/Bakman Review	20 days	Wed 2/19/14	Tue 3/18/14	121	[Gantt chart bar for CDPH/Bakman Review]																																			
123	Final Drawings/Specs	20 days	Wed 3/19/14	Tue 4/15/14	122	[Gantt chart bar for Final Drawings/Specs]																																			
124	5.2 Meter	50 days	Wed 12/25/13	Tue 3/4/14		[Gantt chart bar for 5.2 Meter]																																			
125	Prepare Draft Meter Bid Packet/Specs	40 days	Wed 12/25/13	Tue 2/18/14	118	[Gantt chart bar for Prepare Draft Meter Bid Packet/Specs]																																			
126	Final Meter Bid Packet/Specs	10 days	Wed 2/19/14	Tue 3/4/14	125	[Gantt chart bar for Final Meter Bid Packet/Specs]																																			
127	Task 6 Environmental Documents	40 days	Wed 2/19/14	Tue 4/15/14	121	[Gantt chart bar for Task 6 Environmental Documents]																																			
128	Task 7 Permitting	50 days	Wed 4/16/14	Tue 6/24/14	119	[Gantt chart bar for Task 7 Permitting]																																			
129	CDPH Permit Approval	50 days	Wed 4/16/14	Tue 6/24/14	126	[Gantt chart bar for CDPH Permit Approval]																																			
130	SWPPP	10 days	Wed 4/16/14	Tue 4/29/14	126	[Gantt chart bar for SWPPP]																																			
131	Dust Control Plan	10 days	Wed 4/16/14	Tue 4/29/14	126	[Gantt chart bar for Dust Control Plan]																																			
132	Task 8 Construction Contracting	100 days	Wed 3/5/14	Tue 7/22/14		[Gantt chart bar for Task 8 Construction Contracting]																																			
133	8.1 Wellhead Treatment Bid	20 days	Wed 6/25/14	Tue 7/22/14	129	[Gantt chart bar for 8.1 Wellhead Treatment Bid]																																			
134	8.2 Meter Bid/Order	20 days	Wed 3/5/14	Tue 4/1/14	126	[Gantt chart bar for 8.2 Meter Bid/Order]																																			
135	Task 9 Construction	450 days	Wed 4/2/14	Tue 12/22/15		[Gantt chart bar for Task 9 Construction]																																			
136	9.1 Wellhead Improvements	100 days	Wed 7/23/14	Tue 12/9/14	133	[Gantt chart bar for 9.1 Wellhead Improvements]																																			
137	9.2 Meter Installation	450 days	Wed 4/2/14	Tue 12/22/15	134	[Gantt chart bar for 9.2 Meter Installation]																																			
138	Task 10 Environmental Compliance/Mitigation/Enhancement	450 days	Wed 7/23/14	Tue 4/12/16	133	[Gantt chart bar for Task 10 Environmental Compliance/Mitigation/Enhancement]																																			
139	Task 11 Construction Administration	480 days	Wed 4/2/14	Tue 2/2/16		[Gantt chart bar for Task 11 Construction Administration]																																			
140	Construction Observation	450 days	Wed 4/2/14	Tue 12/22/15	134	[Gantt chart bar for Construction Observation]																																			
141	Record Drawings	30 days	Wed 12/23/15	Tue 2/2/16	137	[Gantt chart bar for Record Drawings]																																			
142	Task 12 On-Going Monitoring	47 days	Wed 12/23/15	Thu 2/25/16		[Gantt chart bar for Task 12 On-Going Monitoring]																																			
143	On-going Monitoring	47 days	Wed 12/23/15	Thu 2/25/16	137	[Gantt chart bar for On-going Monitoring]																																			
144	On-going Operation and Maintenance	47 days	Wed 12/23/15	Thu 2/25/16	137	[Gantt chart bar for On-going Operation and Maintenance]																																			

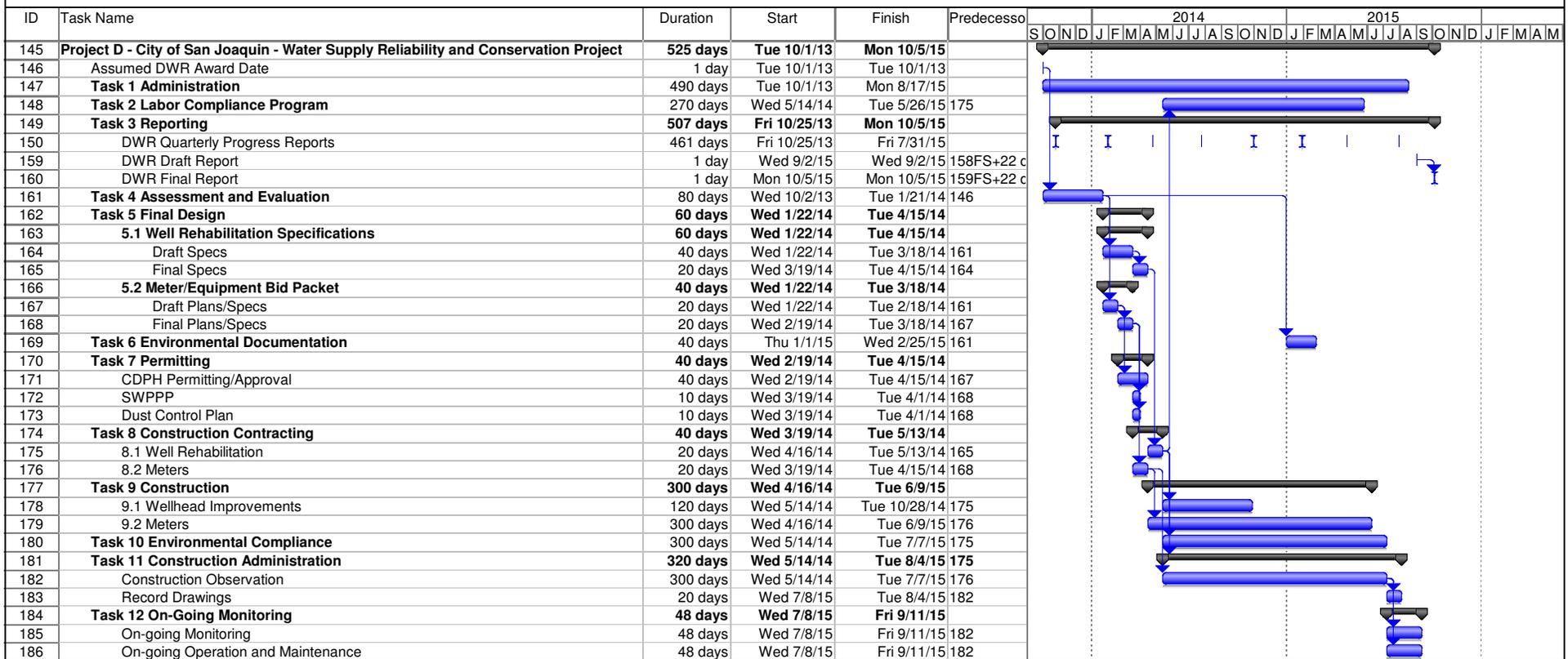
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Task		Summary		Rolled Up Progress		Project Summary	
Progress		Rolled Up Task		Split		Group By Summary	
Milestone		Rolled Up Milestone		External Tasks		Deadline	

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Figure 5-5



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Task		Summary		Rolled Up Progress		Project Summary	
Progress		Rolled Up Task		Split		Group By Summary	
Milestone		Rolled Up Milestone		External Tasks		Deadline	

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Figure 5-6

ID	Task Name	Duration	Start	Finish	Predecessor	2014												2015																							
						S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M			
187	Project E - City of Kerman - Residential Water Meter Project	588 days	Tue 10/1/13	Thu 12/31/15		[Gantt chart showing project summary bar from 10/1/13 to 12/31/15]																																			
188	Assumed DWR Award Date	1 day	Tue 10/1/13	Tue 10/1/13		[Milestone diamond at 10/1/13]																																			
189	Task 1 Administration	500 days	Wed 10/2/13	Tue 9/1/15	188	[Summary bar from 10/2/13 to 9/1/15]																																			
190	Task 2 Labor Compliance Program	200 days	Wed 3/19/14	Tue 12/23/14	209	[Summary bar from 3/19/14 to 12/23/14]																																			
191	Task 3 Reporting	507 days	Fri 10/25/13	Mon 10/5/15		[Summary bar from 10/25/13 to 10/5/15]																																			
192	DWR Quarterly Progress Reports	461 days	Fri 10/25/13	Fri 7/31/15		[Summary bar from 10/25/13 to 7/31/15]																																			
201	DWR Draft Report	1 day	Wed 9/2/15	Wed 9/2/15	200FS+22 c	[Milestone diamond at 9/2/15]																																			
202	DWR Final Report	1 day	Mon 10/5/15	Mon 10/5/15	201FS+22 c	[Milestone diamond at 10/5/15]																																			
203	Task 4 Assessment and Evaluation	40 days	Wed 10/2/13	Tue 11/26/13	188	[Summary bar from 10/2/13 to 11/26/13]																																			
204	Task 5 Final Design	40 days	Wed 11/27/13	Tue 1/21/14	203	[Summary bar from 11/27/13 to 1/21/14]																																			
205	Task 6 Environmental Documentation	10 days	Thu 1/1/15	Wed 1/14/15	203	[Summary bar from 1/1/15 to 1/14/15]																																			
206	Task 7 Permitting	10 days	Wed 1/22/14	Tue 2/4/14		[Summary bar from 1/22/14 to 2/4/14]																																			
207	SWPPP	10 days	Wed 1/22/14	Tue 2/4/14	204	[Summary bar from 1/22/14 to 2/4/14]																																			
208	Dust Control Plan	10 days	Wed 1/22/14	Tue 2/4/14	204	[Summary bar from 1/22/14 to 2/4/14]																																			
209	Task 8 Construction Contracting	40 days	Wed 1/22/14	Tue 3/18/14	204	[Summary bar from 1/22/14 to 3/18/14]																																			
210	Task 9 Construction	300 days	Wed 3/19/14	Tue 5/12/15	209	[Summary bar from 3/19/14 to 5/12/15]																																			
211	Task 10 Environmental Compliance	300 days	Wed 3/19/14	Tue 5/12/15	209	[Summary bar from 3/19/14 to 5/12/15]																																			
212	Task 11 Construction Administration	340 days	Wed 3/19/14	Tue 7/7/15		[Summary bar from 3/19/14 to 7/7/15]																																			
213	On-going Operation and Maintenance	300 days	Wed 3/19/14	Tue 5/12/15	209	[Summary bar from 3/19/14 to 5/12/15]																																			
214	Record Drawings	40 days	Wed 5/13/15	Tue 7/7/15	213	[Summary bar from 5/13/15 to 7/7/15]																																			
215	Task 12 On-Going Monitoring	167 days	Wed 5/13/15	Thu 12/31/15		[Summary bar from 5/13/15 to 12/31/15]																																			
216	On-going Monitoring	167 days	Wed 5/13/15	Thu 12/31/15	210	[Summary bar from 5/13/15 to 12/31/15]																																			
217	On-going Operation and Maintenance	167 days	Wed 5/13/15	Thu 12/31/15	210	[Summary bar from 5/13/15 to 12/31/15]																																			

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Task		Summary		Rolled Up Progress		Project Summary	
Progress		Rolled Up Task		Split		Group By Summary	
Milestone		Rolled Up Milestone		External Tasks		Deadline	