



*Practical Solutions
In Groundwater Science*

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Via Electronic Mail

December 4, 2015

Mr. Darryl Crossman, City Manager
City of Litchfield Park
214 W. Wigwam Boulevard
Litchfield Park, AZ 85340

Re: Monthly Update, PGA-North Superfund Site

Dear Mr. Crossman:

As requested, following is a brief update on activities at the Phoenix-Goodyear Airport (PGA) North Superfund Site for the period from October 2015 through early November 2015.

LITCHFIELD PARK WELL & TIERRA VERDE LAKE SAMPLING

Crane Co. sampled the City supply well on November 10th. Clear Creek Associates collected split samples from the well and a sample from Tierra Verde lake as part of the November sampling event. Clear Creek's results were non-detect (<1 ug/L) for TCE from the well and lake, and 1.02 ug/L and non-detect (<0.50) for perchlorate from the well and lake, respectively. Crane Co.'s results are not yet available. The next sampling event of the City's well by Crane Co. is scheduled for February 2015.

Crane Co is currently conducting an evaluation of its overall monitoring program. Crane Co. is recommending reducing the sampling frequency of the park supply well from quarterly to annual sampling for TCE and annual sampling for perchlorate based on historical results. Additional discussion are planned on the propose changes prior to finalization and implementation in March 2016.

Based on well construction details and historical monitoring results, Crane Co.'s proposed reduction in sampling at the park supply well is not unreasonable provided water level monitoring and system operations data continue to demonstrate that hydraulic containment is maintained in the northern portion of the Site. Clear Creek can provide sampling support to the City if additional data are desired from a risk management perspective. One approach would be for Clear Creek to modify its approach from a "split sampling" effort to monitoring in an off-period. This would provide for semi-annual sampling of the park well without increasing the current level of effort for the City.

RECENT MONITOR WELL RESULTS

Figure 1, attached, is a summary of recent monitoring results for the northern portion of the Site. The results from the October 2015 sampling event are generally consistent with prior results. Notable findings or exceptions for the October results are summarized below.

- At EPA MW-13A (South of I-10 and west of Litchfield Road) TCE was detected at 740 ug/L, up from the previous months' concentration of 708 ug/L. This is generally consistent with the historical trend observed at this well attributed to seasonal variations in regional pumping patterns.
- At EPA MW-63A, located on the west side of Litchfield Road, approximately 500 feet north of Van Buren, TCE concentrations were observed at 38.9 ug/L, up from the previous months' concentration of 30.2 ug/L. Overall, the trend at this location remains an increasing trend. New extraction well EA-10 has been installed along Van Buren in the vicinity of former extraction well EA-04 to enhance on-site capture. EA-10 has been integrated into the MTS automated control system.
- At EPA MW-48A, located on the east side of Litchfield Road, approximately ¼-mile south of Interstate 10, TCE concentrations were observed at 186 ug/L, up from the prior month's result of 136 ug/L. Although seasonal variability has been observed in EPA MW-48A, historical trends have shown a gradual decline in peak concentrations since 2013.
- At EPA MW-51A, located in the Pebble Creek community located along W Robson Circle North, northwest of 147th Lane, TCE concentrations were at 4.6 ug/L, consistent with the prior month's result of 4.1 ug/L. Future results will be evaluated to confirm the trend; however, concentrations appear to have declined to below the aquifer water quality standard of 5 ug/L.
- At EPA MW-11A, located on La Vista Drive (approximately 0.1 mi south of Van Buren) ¼-mile east of Litchfield Road, TCE concentrations were <0.19 ug/L, which is consistent with historical results.
- At EPA MW-7A, located on Loma Linda west of La Jolla, TCE concentrations were 48.9 ug/L, down from the prior month's concentration of 59.7 ug/L. Seasonal variations related to regional pumping patterns are observed in this location, however, an overall increasing trend is observed in this well due to the past injection of untreated water to the south of the site.

- At EPA MW-10A, located approximately 850 north of EPA MW-7A, TCE concentrations were 7.2 and 11 ug/L. Seasonal variations related to regional pumping patterns are observed in this well, however, an overall decreasing trend is observed in this well from its peak concentration of 130 ug/L observed in December 2012.
- TCE concentrations (14.1 ug/L in October) at recently installed monitoring well EPA MW-15A (located on San Xavier Avenue east of Litchfield Road) indicate that the footprint of the TCE plume in the southeast portion of the site that resulted from the inadvertent discharge of partially treated water is larger than previously thought. Crane Co. is proposing to install several additional monitor wells in the area to define the extent of the plume.

CONDUIT WELL UPDATE

Monitoring results for irrigation well 27C collected from Subunit A sample (above the inflatable packer) were 3.8 ug/L, consistent with the prior months' result. Concentrations in Subunit A have been below the aquifer water quality standard of 5 ug/L for several months and continue to decline slightly. TCE concentrations in the deeper (Subunit C) sample were 4.9 ug/L in October, also consistent with the prior months' result of 4.4 ug/L. TCE concentrations in the deeper port appear to have stabilized near to slightly below the aquifer water quality standard or 5 ug/L.

SOURCE AREA INVESTIGATION & REMEDIATION

EPA is expected to approve Crane' Co.s response to comments on the source area laboratory treatability study work plan. A call to discuss the installation of the initial soil brings is expected to occur in early January.

During the November technical meeting, Crane Co. reported that they had initiated work to install an additional infiltration gallery on the former Unidynamics property. Crane Co.'s objective is to increase the lateral distribution of recharge water on-site in an effort to reduce the downward vertical gradient for Subunit A to Subunit C. It was also noted that perchlorate concentrations in on-site monitor wells in the vicinity of the existing vegetated plots have increased suggesting that the surficial recharge associated with the vegetated plots / infiltration gallery is flushing residual perchlorate from the unsaturated zone. The surficial recharge is being conducted up-gradient of the on-site extraction system so the perchlorate is expected to be captured and removed by the Main Treatment System.

GROUNDWATER INVESTIGATION

Work to install new monitor well EPA MW-65A (located south of the former Unidynamics facility) is scheduled to begin the week of December 7. EPA MW-65A is one of the additional wells Crane Co. has proposed to install to define the extent of the TCE plume in the southeast portion of the Site as discussed above.

PLUME CONTAINMENT

Hydraulic containment in the north and northeast portions of the Site is being maintained by the combined operation of the groundwater extraction and reinjection systems. Approximately 5% of the water extracted from the EA-06/EA-07 treatment system was utilized by Goodyear for park irrigation; this is consistent with the usage seen last year. Average flow rates in the injection wells for October were 195 gpm, 246 gpm, and 153 gpm in IA-11, IA-12 and IA-15, respectively, (Figure 2). The average reported flow rates for IA-07 and IA-08 for October were 178 and 143gpm, respectively, which are generally consistent with the previous months' rates (Figure 2). Groundwater elevations in the vicinity of injection well IA-12 were generally consistent with the previous month's monitoring event, with the exception of well EPA MW-59A, which had a water level increase (Figure 3). Average flow rates, based on operational uptime, for the off-site extraction wells are shown on Figure 4. The operational uptime for the EA-06/EA-07 treatment system was consistent with the prior month. The average reported flow rates for EA-06 and EA-07 for October were 395 gpm and 207 gpm, respectively. The average reported flow rate for EA-07 for October was down slightly from the previous months' flow rate. The average reported flow rate for EA-08 for October was 328 gpm, consistent with the previous months' flow rate. Operation of new on-site extraction well EA-10 and new injection well IA-09, located in Loma Linda Park, have been transitioned to automated mode from manual mode.

* * * * *

Sincerely,
Clear Creek Associates, PLC

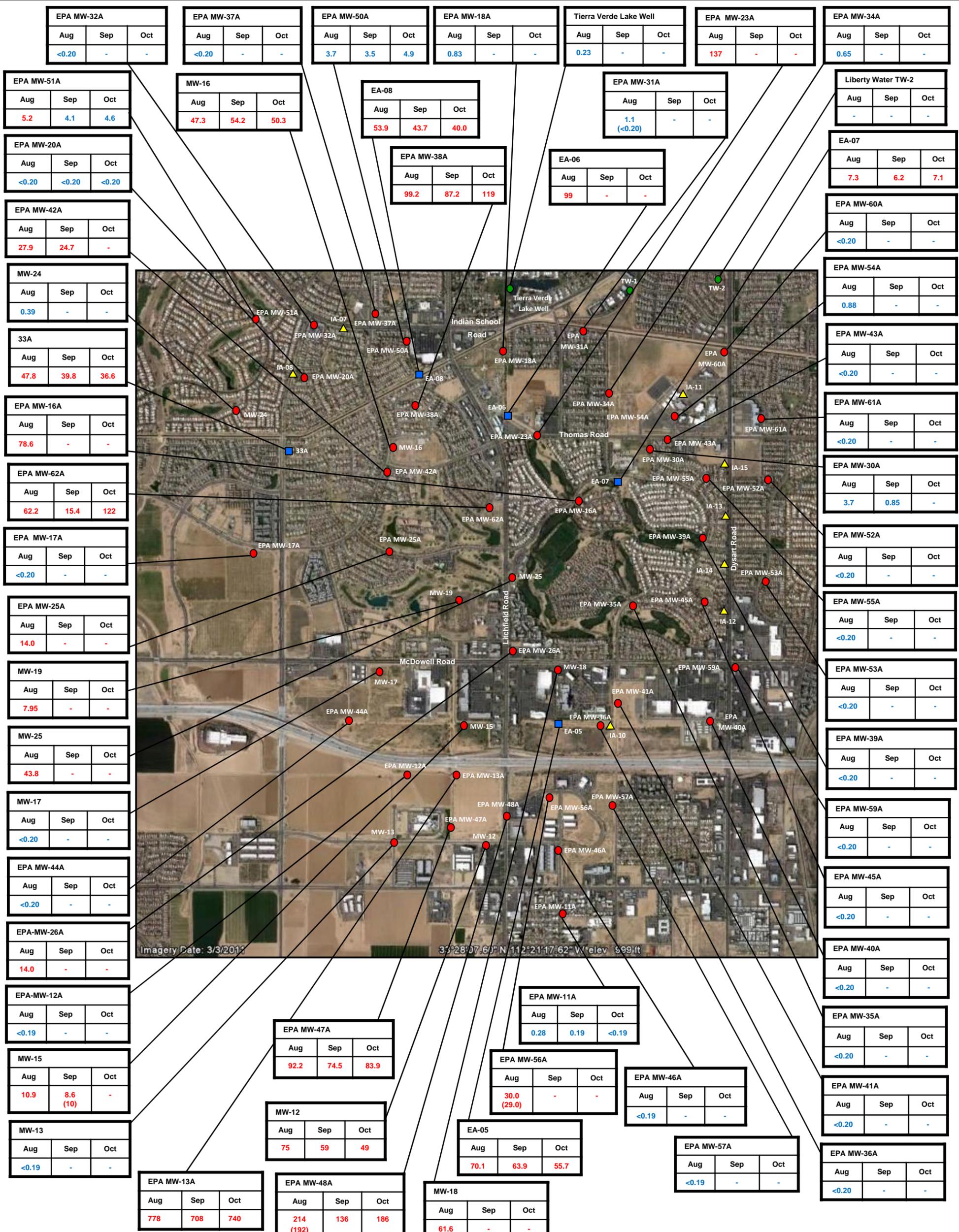


Thomas R. Suriano, R.G.
Principal Hydrogeologist

Attachments:

- Figure 1: Recent Analytical Results
- Figure 2: Average Injection Rates
- Figure 3: Groundwater Elevations in Monitor Wells near IA-12
- Figure 4: Average Extraction Rates

- cc: (e-copies)
- Sonny Culbreth – City of Litchfield Park
 - Carla Reece – City of Litchfield Park
 - Terri Roth – City of Litchfield Park
 - Susan Goodwin – City Attorney
 - Woody Scoutten – EPS Group



EPA MW-32A			
Aug	Sep	Oct	
<0.20	-	-	

EPA MW-37A			
Aug	Sep	Oct	
<0.20	-	-	

EPA MW-50A			
Aug	Sep	Oct	
3.7	3.5	4.9	

EPA MW-18A			
Aug	Sep	Oct	
0.83	-	-	

Tierra Verde Lake Well			
Aug	Sep	Oct	
0.23	-	-	

EPA MW-23A			
Aug	Sep	Oct	
137	-	-	

EPA MW-34A			
Aug	Sep	Oct	
0.65	-	-	

EPA MW-51A			
Aug	Sep	Oct	
5.2	4.1	4.6	

MW-16			
Aug	Sep	Oct	
47.3	54.2	50.3	

EA-08			
Aug	Sep	Oct	
53.9	43.7	40.0	

EPA MW-31A			
Aug	Sep	Oct	
1.1 (<0.20)	-	-	

Liberty Water TW-2			
Aug	Sep	Oct	
-	-	-	

EPA MW-20A			
Aug	Sep	Oct	
<0.20	<0.20	<0.20	

EPA MW-38A			
Aug	Sep	Oct	
99.2	87.2	119	

EA-06			
Aug	Sep	Oct	
99	-	-	

EA-07			
Aug	Sep	Oct	
7.3	6.2	7.1	

EPA MW-42A			
Aug	Sep	Oct	
27.9	24.7	-	

EPA MW-60A			
Aug	Sep	Oct	
<0.20	-	-	

MW-24			
Aug	Sep	Oct	
0.39	-	-	

EPA MW-54A			
Aug	Sep	Oct	
0.88	-	-	

33A			
Aug	Sep	Oct	
47.8	39.8	36.6	

EPA MW-43A			
Aug	Sep	Oct	
<0.20	-	-	

EPA MW-16A			
Aug	Sep	Oct	
78.6	-	-	

EPA MW-61A			
Aug	Sep	Oct	
<0.20	-	-	

EPA MW-62A			
Aug	Sep	Oct	
62.2	15.4	122	

EPA MW-30A			
Aug	Sep	Oct	
3.7	0.85	-	

EPA MW-17A			
Aug	Sep	Oct	
<0.20	-	-	

EPA MW-52A			
Aug	Sep	Oct	
<0.20	-	-	

EPA MW-25A			
Aug	Sep	Oct	
14.0	-	-	

EPA MW-55A			
Aug	Sep	Oct	
<0.20	-	-	

MW-19			
Aug	Sep	Oct	
7.95	-	-	

EPA MW-53A			
Aug	Sep	Oct	
<0.20	-	-	

MW-25			
Aug	Sep	Oct	
43.8	-	-	

EPA MW-39A			
Aug	Sep	Oct	
<0.20	-	-	

MW-17			
Aug	Sep	Oct	
<0.20	-	-	

EPA MW-59A			
Aug	Sep	Oct	
<0.20	-	-	

EPA MW-44A			
Aug	Sep	Oct	
<0.20	-	-	

EPA MW-45A			
Aug	Sep	Oct	
<0.20	-	-	

EPA-MW-26A			
Aug	Sep	Oct	
14.0	-	-	

EPA MW-40A			
Aug	Sep	Oct	
<0.20	-	-	

EPA-MW-12A			
Aug	Sep	Oct	
<0.19	-	-	

EPA MW-11A			
Aug	Sep	Oct	
0.28	0.19	<0.19	

EPA MW-35A			
Aug	Sep	Oct	
<0.20	-	-	

EPA MW-47A			
Aug	Sep	Oct	
92.2	74.5	83.9	

EPA MW-56A			
Aug	Sep	Oct	
30.0 (29.0)	-	-	

EPA MW-41A			
Aug	Sep	Oct	
<0.20	-	-	

MW-15			
Aug	Sep	Oct	
10.9	8.6 (10)	-	

EPA MW-46A			
Aug	Sep	Oct	
<0.19	-	-	

EPA MW-41A			
Aug	Sep	Oct	
<0.20	-	-	

MW-13			
Aug	Sep	Oct	
<0.19	-	-	

EA-05			
Aug	Sep	Oct	
70.1	63.9	55.7	

EPA MW-57A			
Aug	Sep	Oct	
<0.19	-	-	

EPA MW-36A			
Aug	Sep	Oct	
<0.20	-	-	

EPA MW-13A			
Aug	Sep	Oct	
778	708	740	

EPA MW-48A			
Aug	Sep	Oct	
214 (192)	136	186	

MW-18			
Aug	Sep	Oct	
61.6	-	-	

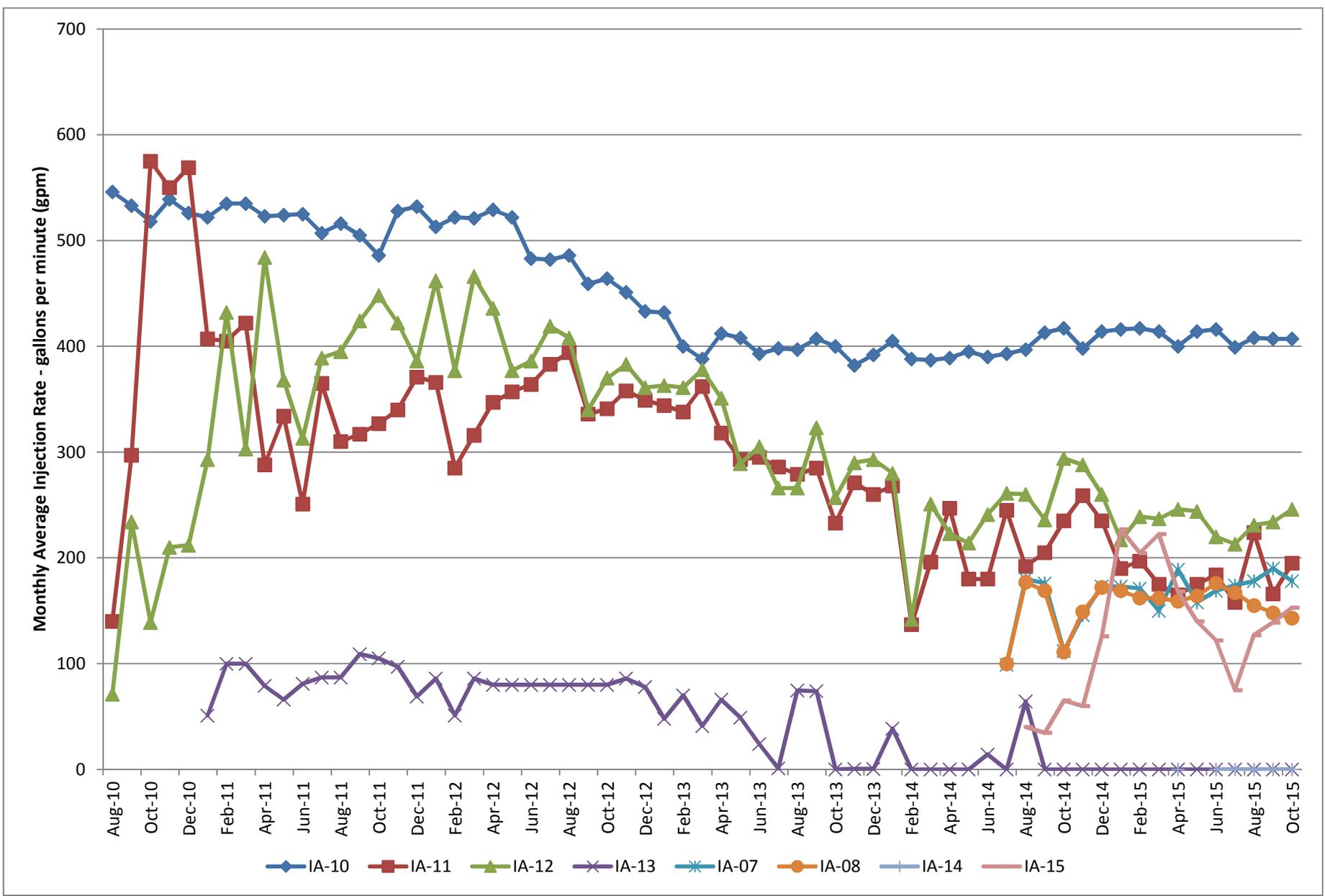
EXPLANATION

- Monitoring well location
 - Production well location
 - Extraction well location
 - ▲ Injection well location
 - Sep Sample Date (Month)
 - 20 TCE concentration in µg/L by EPA Method 8260B.
- Notes: Duplicate samples in parentheses. Results in Red are in excess of 5 µg/L. Results in Blue are less than 5 µg/L.



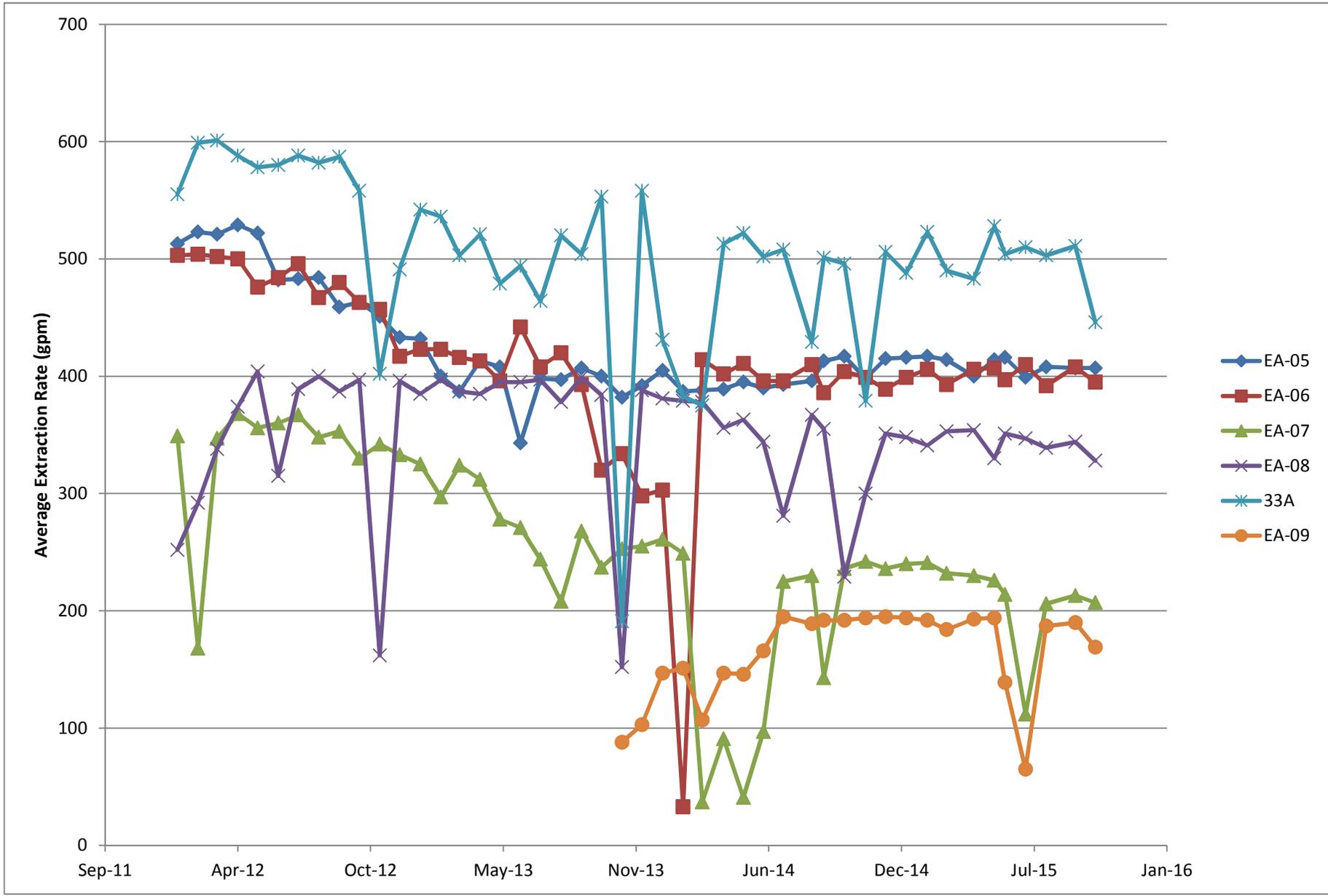
Recent Analytical Results
PGA-North Site
 Goodyear, Arizona
 Figure 1





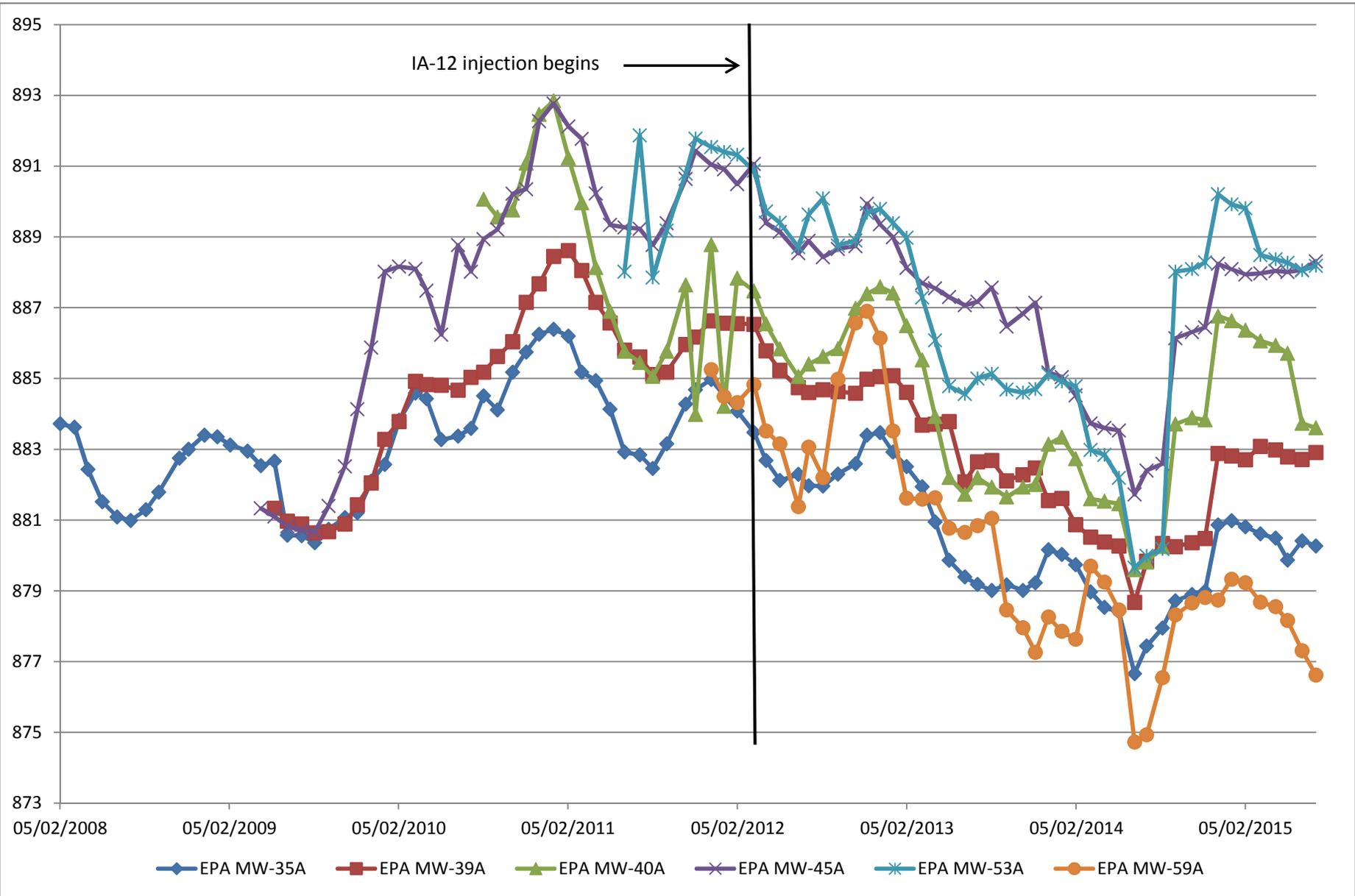
PGA-North Average Injection Rates

Approved TRS	Date	Author GJM	Date 11/23/15	File Name Injection Rates_2	Figure 2
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PGA-North Average Extraction Rates

Approved TRS	Date	Author GJM	Date 11/23/15	File Name Injection Rates_2	Figure 4
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Groundwater Elevations in Monitor Wells Near IA-12

Approved	Date	Author	Date	File Name	Figure
TRS		GJM	11/23/15	Injection Rates_2	3

Dear Mayor Schoaf and Mr. Crossman,

In accordance with the agreement between the City of Litchfield Park and Crane Co., please find relevant portions of the October 2015 Groundwater Monthly Report and Remediation System Performance Summary as it pertains to the northeast and northwest portions of the Subunit A trichloroethene (TCE) plume associated with the Phoenix-Goodyear Airport-North (PGA-North) Superfund Site in Goodyear, Arizona.

The northeast area Subunit A TCE plume groundwater remediation systems consist of three groundwater extraction wells (EA-05, EA-06, and EA-07), and six groundwater injection wells (IA-10, IA-11, IA-12, IA-13, IA-14, and IA-15). These remediation systems were installed to remove TCE mass from groundwater, maintain an effective hydraulic barrier west of Dysart Road, protect the water supply wells in the area, reduce TCE concentrations in the area, and ultimately restore the Subunit A aquifer. The groundwater pumped from extraction well EA-05 is treated at the EA-05 groundwater treatment system (GTS) and re-injected into injection well IA-10. The groundwater pumped from extraction wells EA-06 and EA-07 is treated at the EA-06 GTS and currently re-injected into injection wells IA-11, IA-12, and IA-15. Injection wells IA-11 and IA-12 came online in August 2010, injection well IA-13 came online in January 2011, and injection well IA-15 came online August 2014 with all flow from IA-13 diverted to this well. Injection well IA-14 is installed and connected to the system, but currently is not being used due to the effective hydraulic barrier that is currently being provided by primarily three injection wells IA-11, IA-12, and IA-15.

The northwest area Subunit A TCE plume groundwater remediation systems consist of two groundwater extraction wells (33A and EA-08) and two groundwater injection wells (IA-07 and IA-08). Extraction well 33A came online in 1997, and extraction well EA-08 came online in December 2011. The groundwater pumped from 33A is treated at the 33A GTS, and is used for irrigation by the Palm Valley Lakes Golf Course, or is discharged to the Roosevelt Irrigation District (RID) canal. The groundwater pumped from EA-08 is treated at the EA-08 GTS, and is conveyed to injection wells IA-07 and IA-08 to provide a hydraulic barrier in the northwest area, protect water supply wells, and reduce the size of the plume.

The average groundwater extraction and injection rates for the northeast and northwest area remediation system wells during October 2015 are summarized below:

Northeast Area

- EA-05 – 407 gallons per minute (gpm)
- EA-06 – 395 gpm

- EA-07 – 207 gpm

- IA-10 – 407 gpm
- IA-11 – 195 gpm
- IA-12 – 246 gpm
- IA-15 – 153 gpm

Northwest Area

- EA-08 – 328 gpm
- 33A – 446 gpm
- IA-07 – 178 gpm
- IA-08 – 143 gpm

A. Treatment Systems and TCE Mass Removal

EA-05 GTS

During this reporting period, approximately 16.4 million gallons (Mgals) of groundwater was extracted and treated at the EA-05 GTS; removing 7.6 pounds of TCE.

EA-06 GTS

During this reporting period, approximately 24.3 Mgals of groundwater was extracted from extraction wells EA-06 and EA-07, and treated at the EA-06 GTS; removing 12.8 pounds of TCE.

EA-08 GTS

During this reporting period, approximately 13.2 Mgals of groundwater was extracted and treated at the EA-08 GTS; removing 4.4 pounds of TCE.

33A GTS

During this reporting period, approximately 18.0 Mgals of groundwater was extracted and treated at the 33A GTS; removing approximately 5.5 pounds of TCE.

B. Northeast Area Subunit A Groundwater Quality and Plume Extent

The August/October 2015 analytical results indicate that the northeast portion of the Subunit A TCE plume continues to be delineated by monitor wells EPA MW-18A, EPA MW-30A, EPA MW-31A, EPA MW-34A, EPA MW-35A, EPA MW-36A, EPA MW-39A, EPA MW-40A, EPA MW-41A, EPA MW-43A, EPA MW-45A, EPA MW-52A, EPA MW-53A, EPA MW-54A, EPA MW-55A, EPA MW-59A, EPA MW-60A, EPA MW-61A, and IR-34B (Figure 1). Groundwater samples collected from these wells continue to exhibit TCE concentrations that are either below the laboratory detection limit or are less than the United States Environmental Protection Agency (EPA) Maximum Contaminant Level (MCL) of 5 µg/L.

In the IA-12 area, since injection of treated groundwater commenced in August 2010, TCE concentration trends for key performance monitor wells continue to indicate that the Subunit A plume continues to be reduced in size. For example:

- Historically, TCE concentrations in EPA MW-35A, (Figure 2) typically peaked during the winter and spring months in response to rising groundwater levels related to the reduced pumping schedules from local irrigation and supply wells. In February 2010, TCE was reported at a concentration of 48 µg/L in EPA MW-35A. However, since the injection of treated water began into injection wells IA-12, IA-13, and most recently IA-15 (August 2014), TCE concentrations have been reduced by two orders of magnitude in this well, and continue to remain low; the most recent (August 2015) TCE concentration for this well was below the laboratory detection limit of 0.20 µg/L.

- In IR-34B TCE was reported at a concentration of 180 µg/L in July 2009. However since the initiation of injection of treated water into wells IA-11, IA-12, IA-13, and most recently IA-15, TCE concentrations have been reduced. . The most recent (October 2015) TCE concentration for this well is 5.0 µg/L, which is equal to the MCL.
- In monitor wells EPA MW-39A, EPA MW-40A, EPA MW-45A, EPA MW-55A and EPA MW-59A the most recent (August 2015) TCE concentrations have remained below the laboratory detection limit of 0.20 µg/L.

Similarly, in the area of injection well IA-11 and IA-15, TCE concentrations have decreased in monitor wells EPA MW-30A, EPA MW-43A, and EPA MW-54A. For example:

- In monitor well EPA MW-30A, concentrations have decreased from 29 µg/L in August 2010 to 0.85 J µg/L (below the MCL) in September 2015;
- In monitor well EPA MW-43A, concentrations have decreased from 6.3 µg/L in August 2010 to below the laboratory detection limit of 0.20 µg/L in August 2015.
- In monitor well EPA MW-54A, concentrations have decreased from 28 µg/L in October 2010 to 0.88 J µg/L (below the MCL) in August 2015.

The TCE concentration trends for northeast area wells continue to demonstrate that the plume in this area is defined and has continued to decrease in size as a result of the extraction operations at EA-05, EA-06, and EA-07 and the reinjection of treated groundwater into injection wells IA-10, IA-11, IA-12, and IA-15.

C. Northwest Area Subunit A Groundwater Quality and Plume Extent

The August/October 2015 analytical results indicate that the northwest portion of the Subunit A TCE plume is delineated by monitor wells MW-17, EPA MW-17A, EPA MW-20A, EPA MW-21A, EPA MW-32A, EPA MW-37A, EPA MW-50A, and MW-24 (Figure 1). Groundwater samples collected from these wells exhibit TCE concentrations that are either below the laboratory detection limit or are less than the EPA MCL of 5 µg/L.

In the EA-08 GTS area, since the startup of extraction well EA-08 in December 2011, TCE concentrations in key performance monitor well (EPA MW-50A) continue to indicate TCE mass in the area has been reduced. For example:

- In sentinel monitor well EPA MW-50A, TCE concentrations have decreased from 19 µg/L in October 2010 to 4.9 µg/L in October 2015 (Figure 1).

In the 33A GTS area, northwest area sentinel wells continue to indicate that the plume is defined to concentrations less than the laboratory reporting limit, or less than the MCL.

- In monitor well EPA MW-51A, TCE concentration was 4.6 µg/L in October 2015 (Figure 1). As the injection of treated water to injection wells IA-07 and IA-08 continue, TCE concentrations in this well

may occasionally increase to levels slightly above the MCL, but over time concentrations are expected to be reduced.

- In interior monitor well MW-16, the October 2015 TCE concentration was 50.3 µg/L (Figure 1). Due to the interior location of the well, the aquifer dynamics in this area, and the historic high TCE mass in the area, TCE concentrations may remain above the MCL and may occasionally spike as shown in Figure 3.

D. Groundwater Elevations and Flow Directions

Northeast Area

The October 2015 groundwater elevations in key northeast area monitor wells (EPA MW-30A, EPA MW-34A, EPA MW-35A, EPA MW-39A, EPA MW-43A, EPA MW-45A, EPA MW-54A, and EPA MW-55A) continue to indicate an effective hydraulic barrier and groundwater mound west of Dysart Road that is maintained by the injection of treated groundwater into injection wells IA-11, IA-12, and IA-15 (Figure 4 and Figure 5). Additionally, groundwater elevations and the local potentiometric surface calculated for October 2015 continue to demonstrate that the operation of the extraction and injection wells in this area are maintaining groundwater flow directions away from the Litchfield Park and COA water supply wells in the area and toward extraction wells EA-06 and EA-07 (Figure 6).

Northwest Area

In the northwest area, the extraction operations at 33A, EA-08, and injection wells IA-07 and IA-08 are the dominant potentiometric features. Groundwater elevations in key monitor wells PZ-16, PZ-17, EPA MW-3A, EPA MW-20A, EPA MW-32A, and EPA MW-37A continue to indicate that an effective hydraulic barrier has been developed in the northwest area by the injection of treated water into IA-07 and IA-08 (Figure 7). The small gap in hydraulic capture that had previously existed between extraction wells 33A and EA-08 has been eliminated by the injection of treated water into these wells.

E. Activities Planned for December 2015

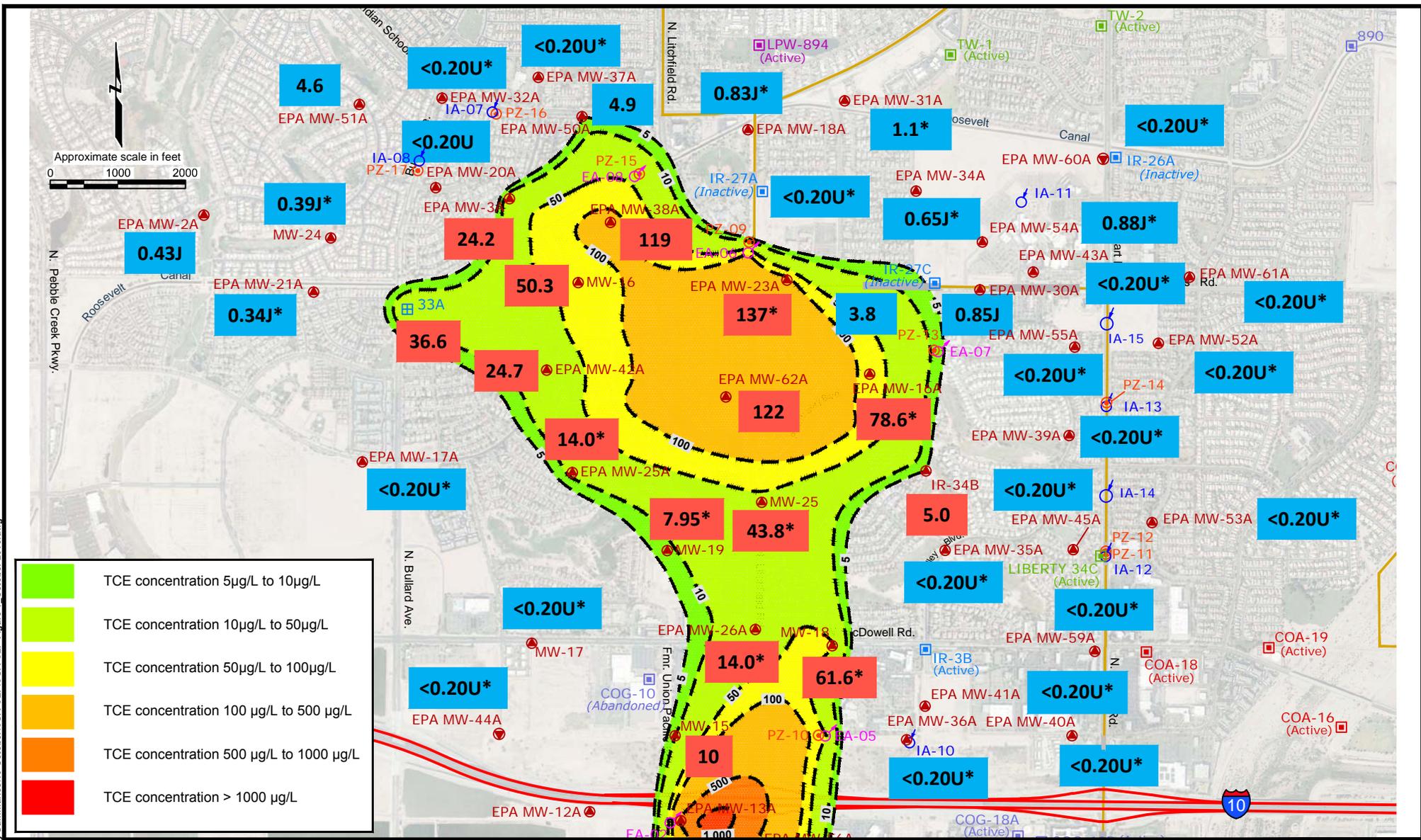
- Continued operation and maintenance of the existing groundwater treatment systems.
- Monthly groundwater sampling and water level measurements of key performance and plume delineation monitor wells north of I-10.
- Continue to evaluate water levels, TCE concentrations, and groundwater flow directions in the northeast area. Make flow rate adjustments to the injection wells as necessary to maintain hydraulic control and protect water supply wells.
- Monitor and evaluate the mounding from the injection of treated water from extraction well EA-08 to new injection wells IA-07 and IA-08.

Harry Brenton, RG

Director of Hydrogeological Services

Matrix New World Engineering, P.C.
250 N. Litchfield Rd. Suite 201
Goodyear, AZ, 85338
P. 623-322-7003
C. 480.322.1474

© MATRIXNEWORLD, I:\2015\15-100 PGA-North\CAD\City Summaries\10-October\COA-CLP\COA-CLP Figure 1 - October 2015.dwg



Explanation			
	Isocontour showing TCE concentration in µg/L. Dashed where inferred. Based on August 2015 data.	4.9	TCE Concentration < 5 µg/L
24.2	TCE Concentration ≥ 5 µg/L	*	Indicates August 2015 TCE Concentrations.

PHOENIX - GOODYEAR AIRPORT - NORTH SUPERFUND SITE
 404 S. LITCHFIELD ROAD GOODYEAR
 MARICOPA COUNTY, ARIZONA

MATRIXNEWORLD
 Engineering Progress

Matrix New World Engineering, Inc.
 250 North Litchfield Road, Suite 201
 Goodyear, Arizona 85338
 WBE / DBE / SBE

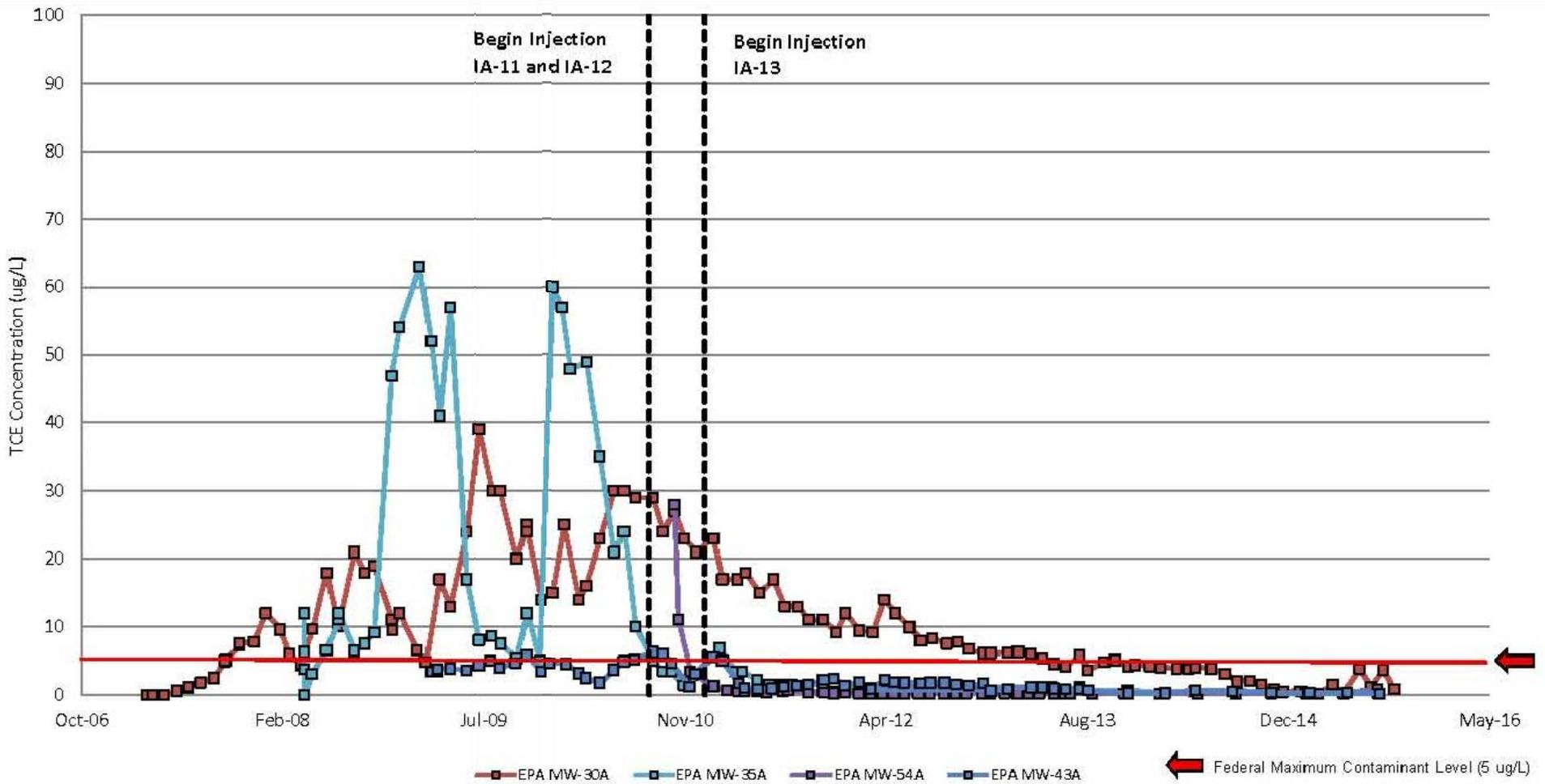
Tel: 623-322-7003
 Fax: 973-240-1818
 www.matrixnewworld.com

SUBUNIT A TCE CONCENTRATIONS AND GROUNDWATER CONTOURS NORTH OF I-10
 AUGUST / OCTOBER 2015

DRAWN BY: AR	DESIGNED BY: JLM	APPROVED BY: HB	PROJECT NUMBER: 15-100E
DATE: 11-30-15	DATE: 11-30-15	DATE: 11-30-15	SCALE: 1" = 2000'

FIGURE NUMBER:
1

**TCE Concentrations EPA MW-30A, EPA MW-35A, EPA MW-43A, and EPA MW-54A
Phoenix-Goodyear Airport-North
Goodyear, AZ**



© MATRIXNEWORLD (P:2015)15-100 PGA-NorthCAD:City Summaries\10-October\COA-CLP\COA-CLP Figure 2, October 2015.dwg

PHOENIX - GOODYEAR AIRPORT - NORTH SUPERFUND SITE
404 S. LITCHFIELD ROAD GOODYEAR
MARICOPA COUNTY, ARIZONA

MATRIXNEWORLD
Engineering Progress

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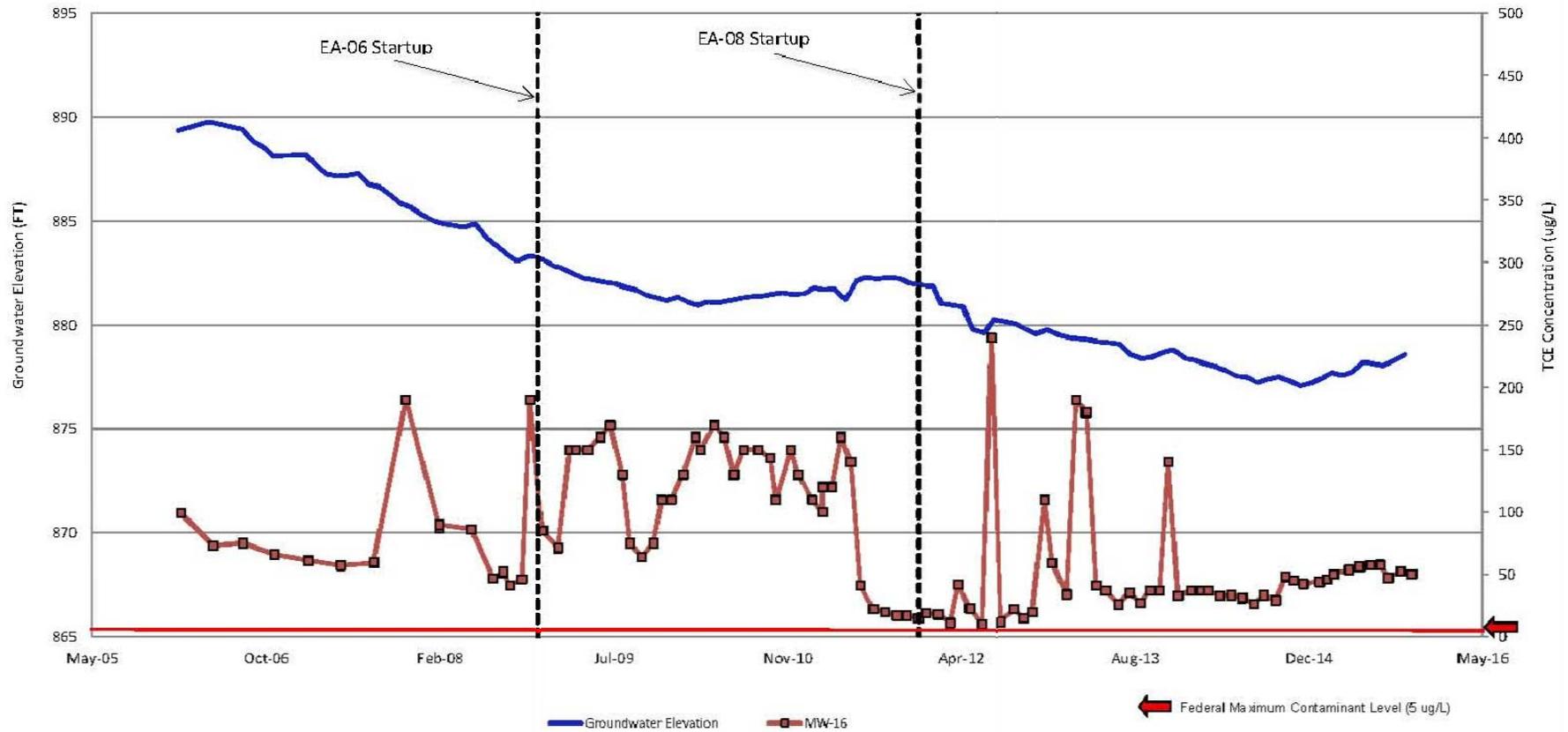
TCE TREND GRAPHS-PERFORMANCE
MONITOR WELLS - SUBUNIT A
NORTHEAST AREA

DRAWN BY: AR	DESIGNED BY: JLM	APPROVED BY: HB	PROJECT NUMBER: 15-100E
DATE: 11-30-15	DATE: 11-30-15	DATE: 11-30-15	SCALE: NONE

FIGURE NUMBER:

2

MW-16 GROUNDWATER LEVELS and TCE CONCENTRATIONS (2006 - 2015)
Phoenix-Goodyear Airport-North
Goodyear, AZ



© MATRIXNEWORLD\F:\2015\15-100 PGA-North\CAD\Cities Summaries\10-October\COA-CLP\ICOA-CLP Figure 3 - October 2015.dwg

PHOENIX - GOODYEAR AIRPORT - NORTH SUPERFUND SITE
 404 S. LITCHFIELD ROAD GOODYEAR
 MARICOPA COUNTY, ARIZONA

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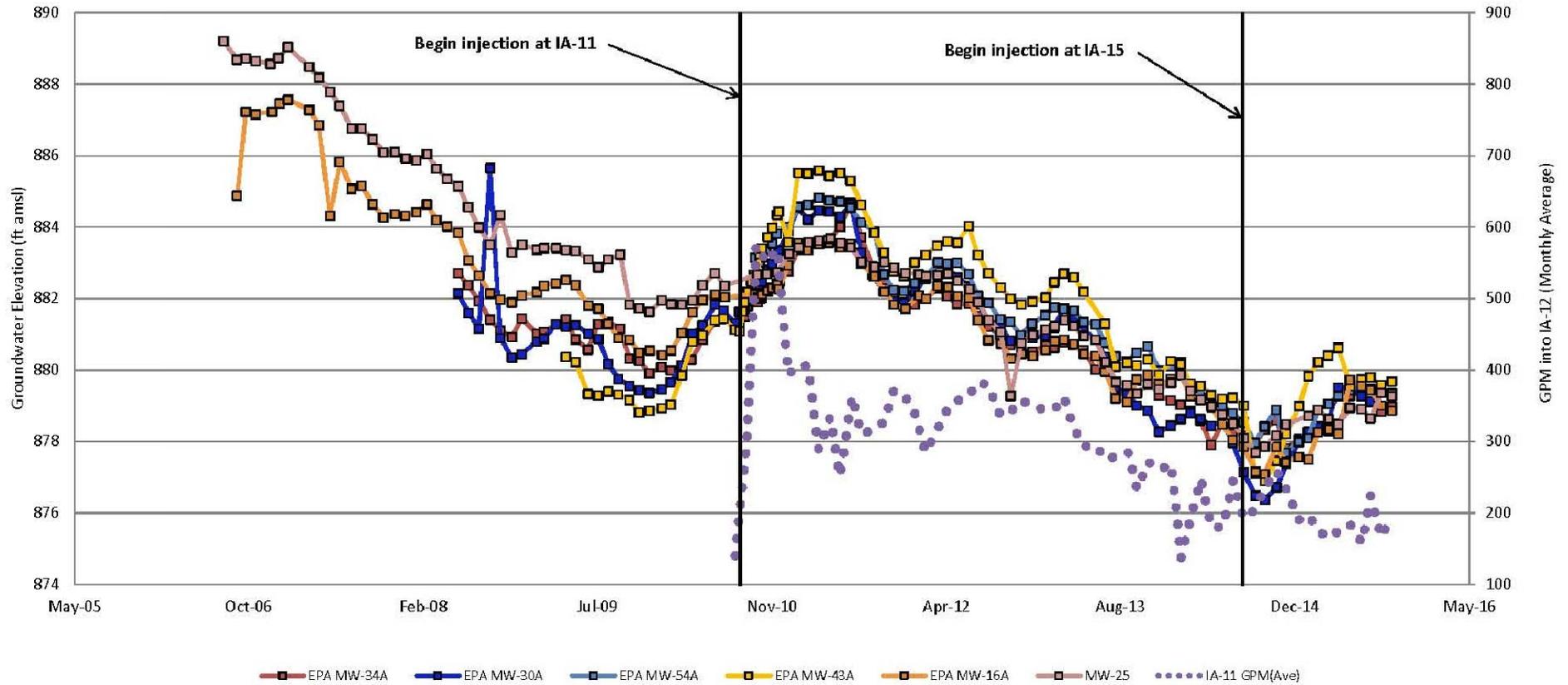
**GROUNDWATER ELEVATION & TCE
 CONCENTRATION TRENDS
 MW-16**

DRAWN BY: AR	DESIGNED BY: JLM	APPROVED BY: HB	PROJECT NUMBER: 15-100E
DATE: 11-30-15	DATE: 11-30-15	DATE: 11-30-15	SCALE: NONE

FIGURE NUMBER:

3

Hydrograph - IA-11 Area Wells Phoenix-Goodyear Airport-North Goodyear, AZ



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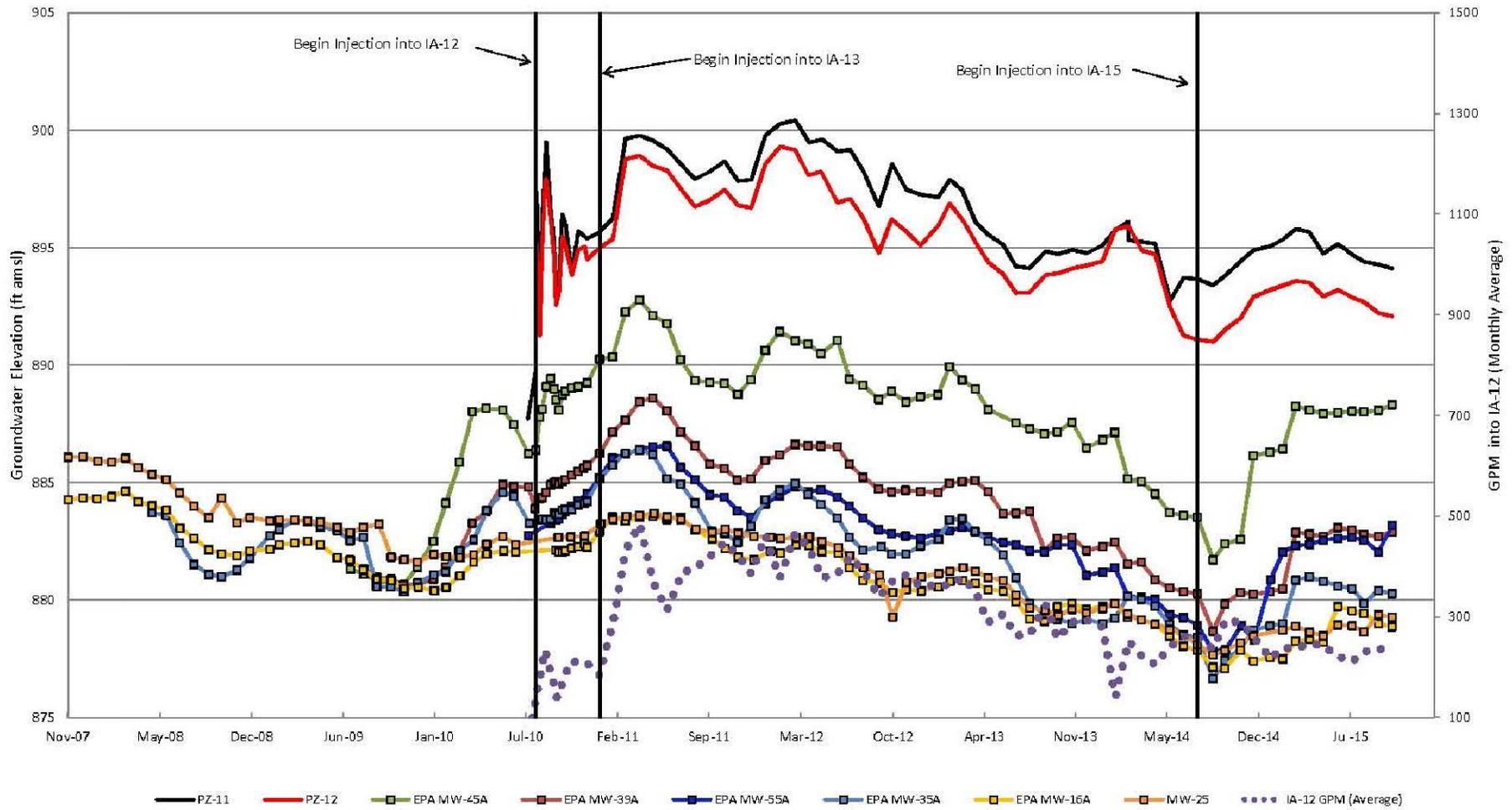
NE AREA SUBUNIT A GROUNDWATER ELEVATION TRENDS INJECTION WELL IA-11 AREA

DRAWN BY: AR	DESIGNED BY: JLM	APPROVED BY: HB	PROJECT NUMBER: 15-100E
DATE: 11-30-15	DATE: 11-30-15	DATE: 11-30-15	SCALE: NONE

FIGURE NUMBER:

4

Hydrograph - IA-12 and IA-13 Area Wells Phoenix-Goodyear Airport-North Goodyear, AZ



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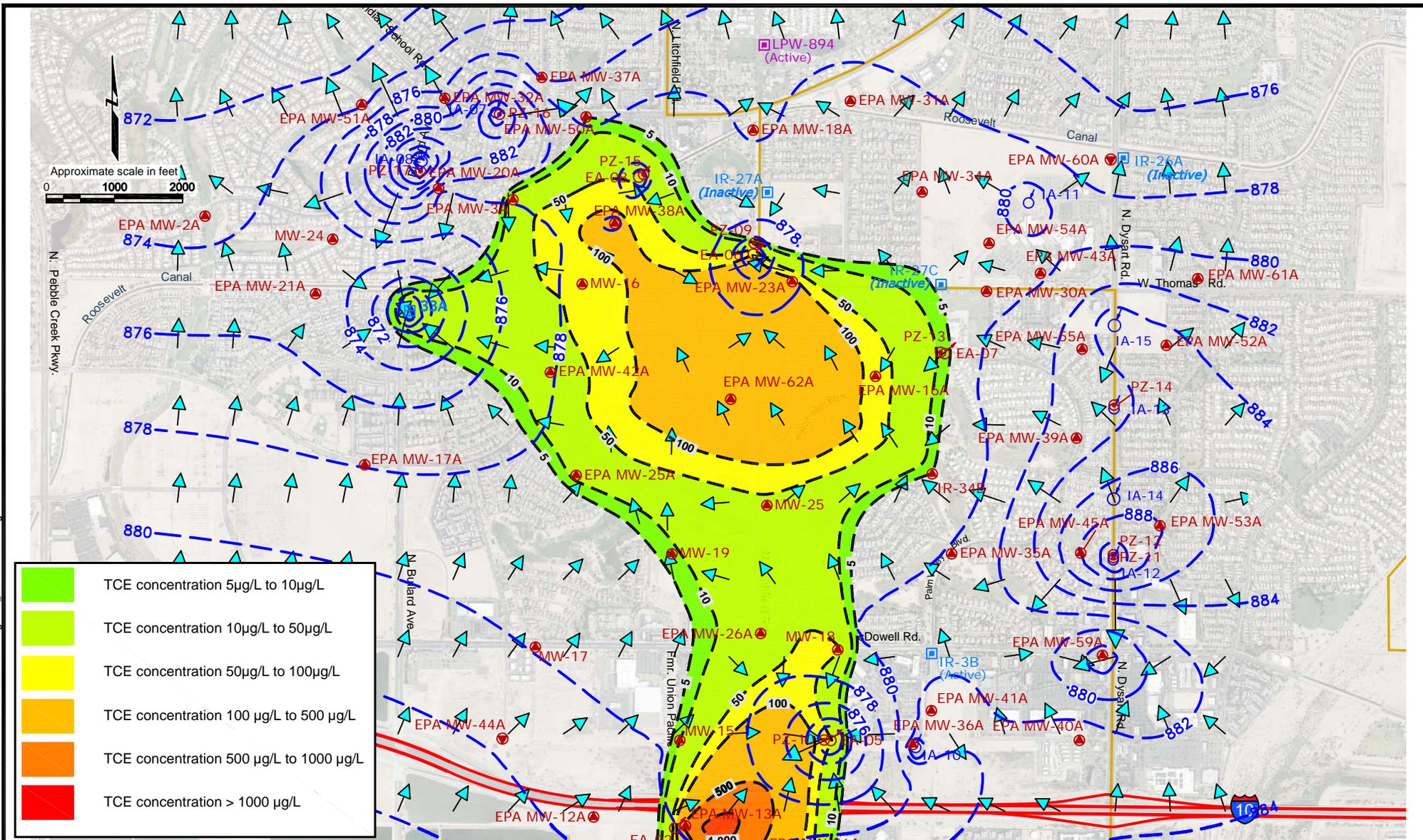
NE AREA SUBUNIT A GROUNDWATER ELEVATION TRENDS INJECTION WELL IA-12 and IA-13 AREA

DRAWN BY: AR	DESIGNED BY: JLM	APPROVED BY: HB	PROJECT NUMBER: 15-100E
DATE: 11-30-15	DATE: 11-30-15	DATE: 11-30-15	SCALE: NONE

FIGURE NUMBER:

5

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	TCE concentration 5µg/L to 10µg/L
	TCE concentration 10µg/L to 50µg/L
	TCE concentration 50µg/L to 100µg/L
	TCE concentration 100 µg/L to 500 µg/L
	TCE concentration 500 µg/L to 1000 µg/L
	TCE concentration > 1000 µg/L

Explanation

- 882 --- Potentiometric Isocontour showing groundwater elevation in feet above MSL; dashed where inferred
- Isocontour showing TCE concentration in µg/L. Dashed where inferred. Based on August / October 2015 data.
- Groundwater Flow Vector based on potentiometric surface.

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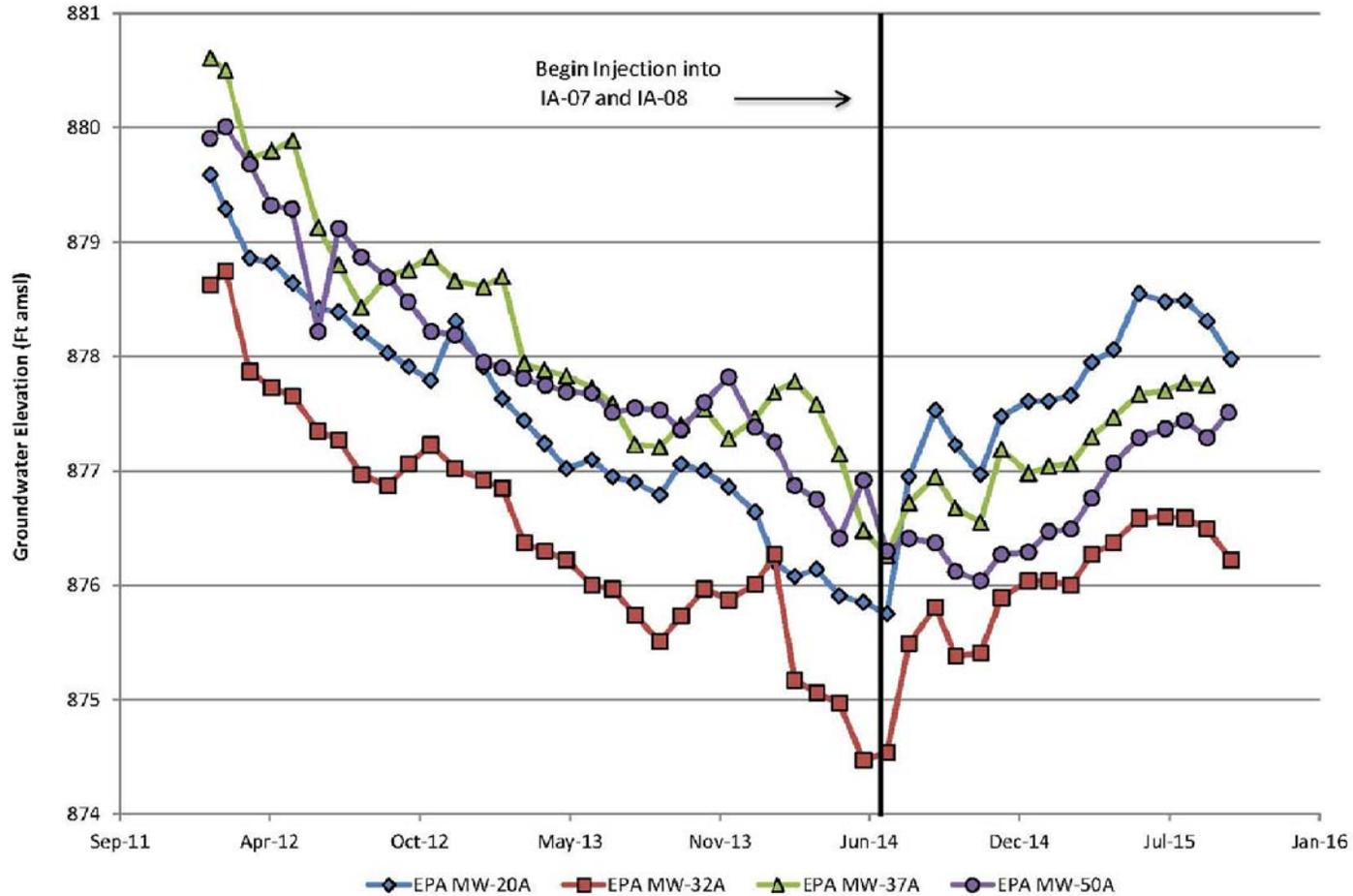
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**SUBUNIT A GROUNDWATER CONTOURS
 AND TCE PLUME NORTH OF I-10
 AUGUST / OCTOBER 2015**

DRAWN BY: AR	DESIGNED BY: JLM	APPROVED BY: HB	PROJECT NUMBER: 15-100E
DATE: 11-30-15	DATE: 11-30-15	DATE: 11-30-15	SCALE: 1" = 2000'

FIGURE NUMBER:
6

Hydrograph - IA-07 and IA-08 Area Wells Phoenix-Goodyear Airport-North Goodyear, AZ



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NW AREA SUBUNIT A GROUNDWATER ELEVATION TRENDS INJECTION WELL IA-07 and IA-08 AREA

DRAWN BY: AR	DESIGNED BY: JLM	APPROVED BY: HB	PROJECT NUMBER: 15-100E
DATE: 11-30-15	DATE: 11-30-15	DATE: 11-30-15	SCALE: NONE

FIGURE NUMBER:

7