

OU #11-029

**Phoenix-Goodyear Airport (PGA) Area/Western Avenue Plume
Community Advisory Group (CAG) Meeting**

**Thursday, November 4, 2010 at 6:00 p.m. to 8:30 p.m.
Avondale City Hall, Sonoran Room
11465 W. Civic Center Drive, Avondale, AZ 85323**

FINAL MINUTES

CAG Members in Attendance:

Diane Krone
Brenda Holland
Susan Kagan
Lisa Amos
Jeff Raible
David Ellis
Frank Scott

ADEQ Staff in Attendance:

André Chiaradia, PGA-South and Western Avenue Project Manager
Nicole Coronado, PGA-North Project Manager
Wayne Miller, ADEQ Hydrologist
Felicia Calderon, Community Involvement Coordinator (CIC)

EPA Staff in Attendance:

Catherine Brown, PGA-North Project Manager
Viola Cooper, CIC

Others in Attendance:

Stephanie Karlin, City of Avondale Councilmember; Stephanie Lyn Koehne, AMEC Geomatrix; David Iwanski, City of Goodyear; Robin Stinnett, City of Avondale; Tom Suriano, Clear Creek Associates; Dennis Maslonkowski, TRC; Keith Woodburn, TRC; Ailiang Gu, ITSI; Kristie Korst, TRC; Wayne Janis, City of Avondale; Jeff Sussman, Goodyear Tire & Rubber Co.; Nadine Johnson, Environmental Community Outreach Association; Krystal White; David Madrid, Arizona Republic; Harry Brenton, AMEC Geomatrix; Frank Carlo; Jennifer Dokes, Arizona Republic; and Jennie Conger, Tierra Dynamic Co.

1. Call to Order / Introductions – Diane Krone, CAG Co-Chair

Ms. Krone, CAG Co-Chair, facilitated the meeting. CAG members and all meeting attendees introduced themselves. Ms. Calderon announced the resignation of CAG member, David Foltz. Mr. Iwanski's City of Goodyear report was moved up to agenda item number two on the agenda order.

2. City of Goodyear (COG) report and Brownfields Supplemental Environmental Project update – David Iwanski, COG Water Department

Mr. Iwanski stated that the City met with John Nelson, State Senator and received a debrief from U.S. EPA and ADEQ regarding the PGA-North plume related to the dispute resolution with Crane Co. Regarding Brownfields, Mr. Iwanski stated that Weston Solutions was the firm selected to do their stage three remediation actions for the City. Mr. Iwanski added that within the next three weeks a scope of work, budget and schedule should be submitted. The four sites selected to be remediated for subsequent development; redevelopment and or sale are the city center where the old aquifer treatment system was previously located, city Center Park, Duncan Farms, and the city's old public works operation center. Mr. Iwanski expressed his thankfulness to the regulatory agencies and various participants efforts toward the PGA Superfund site open house event held at the Estrella Mountain Community College on October 21, 2010.

Ms. Krone expressed her concern over the public's loss of their drinking water supplies. Ms. Krone questioned Mr. Iwanski on the number of Goodyear drinking water wells that have been lost due to the contamination at PGA-North. In response Mr. Iwanski stated that four drinking water wells have been lost and three of them are directly related to contamination at the PGA-North Superfund site, City of Goodyear (COG) wells # 2, 4 and 10. Mr. Iwanski stated that COG #5 well was lost as well, but the source of contamination has not been determined to be directly related to PGA-North, PGA-South or the Western Avenue, WQARF site. Mr. Iwanski stated that these lost wells represent about 20% of the City's drinking water supply. Additionally, Mr. Iwanski added that when these wells were lost they were lowest cost to produce water and that reimbursement is just for the cost of the well, there is no additional operation and maintenance cost recover, and treatment of that water is at an additional cost that the City has to encumber. Mr. Iwanski added that these lost wells sparked the lawsuit with Crane Co., in which a settlement was reach for 1.95 million dollars in restitution, in addition to the 1 million dollars for the current Brownfields effort. Lastly, Mr. Iwanski stated that the City of Goodyear is doing everything it possibly can to respond to this plume. Ms. Krone added that any well that is lost is a serious lost.

Ms. Amos inquired of Mr. Iwanski if the City had considered involving federal level representatives into the PGA Superfund site discussions. Mr. Iwanski stated that at the meeting with Senator Nelson discussions were presented regarding the involvement of Senators' Kyl and McCain, in addition for Congressman Franks to be included in the dialogue of this Superfund site.

Ms. Kagan asked if the City had any authority to tap into Central Arizona Project (CAP) water. Mr. Iwanski responded that they do have a CAP municipal and industrial subcontract, but they do not have the means to transport this water into the service area and treat it at a surface water treatment plant. Mr. Iwanski added that the City does have future water supply options, but that right now the precedence is the groundwater impacts from this plume. Ms. Holland added that fortunately water supply has been a chief topic in the Goodyear City Council's planning to ensure its future availability. A representative from the City of Avondale's Water Resources department spoke about their current and future water sources.

Mr. Raible inquired about next steps generated from the meeting with Senator Nelson. Mr. Iwanski responded that the City will plan their next steps upon the conclusion of the Dispute Resolution process with U.S. EPA and Crane Co.

3. Update on community involvement activities

Ms. Coronado and Ms. Johnson shared with the CAG the various community member questions asked of them at the Goodyear in Action Day 2010 event on August 18.

Ms. Johnson added that she has applied for the \$50,000, Technical Assistance Grant (TAG) supported by the U.S. EPA for this site under the new organization name of Environmental Community Outreach Association. Ms. Cooper added additional details regarding the TAG's purpose and application process.

Ms. Cooper and Ms. Calderon provided a brief summary of the October open house event held for the PGA Superfund site.

The CAG advised Ms. Coronado that they were comfortable with the current content and format of the monthly CAG updates she prepares. Ms. Krone added that she appreciated the "Hot Topics" component to this report.

4. Acceptance and/or changes to minutes of August 5, 2010

Mr. Raible requested that on page two of the minutes under agenda item five, a spelling correction of his last name be made. Ms. Kagan moved to have the meeting minutes approved with the requested change and Ms. Holland seconded. The minutes were approved unanimously by the CAG.

5. Discussion, vote and preparation of Crane Co. letter by CAG-Diane Krone, Co-Chair

Ms. Krone distributed and read to the CAG a draft proposal of the letter to Crane Co., for their discussion and input. Ms. Krone stated her intent of this letter was to have the CAG's voice expressed directly to Crane Co. Mr. Ellis added that this letter should demand a response from Crane Co.'s CEO to the community. Ms. Holland requested that the CAG's external influence and history on the Group be emphasized within the letter. Ms. Amos added that the letter should be carbon copied to Crane Co.'s public relations officer in addition to their technical management with a note that their technical branch has been nonresponsive to their community concerns. Ms. Kagan moved to have Mr. Ellis and Mr. Raible with aid, if needed from Ms. Holland, to assemble the final version of the letter with input presented by the CAG. Mr. Scott seconded the motion and the action was approved unanimously by the CAG. The CAG also decided that the letter should be sent by certified mail.

6. Update of PGA-South activities- Jeff Sussman, Goodyear Tire & Rubber Company

Mr. Sussman updated the CAG on current and upcoming activities related the PGA-South.

See slide presentation below

Mr. Sussman discussed the cleanup efforts within the subunit A and C aquifers with the CAG, and explained why each subunit was in varied stages of remediation. The CAG requested that all drinking water wells be identified on Mr. Sussman's future presentations and extended this request to all CAG presenters.

7. ADEQ update of PGA-South and Western Avenue WQARF site activities-André Chiaradia, ADEQ Project Manager

In an effort to visually describe the various remediation icons and tools used at PGA-South, Mr. Chiaradia presented to the CAG video* footage of the internal characteristics of a well from the site and photos that demonstrated various remediation actions.

**The video presented at the meeting will be released once distribution methods are finalized.*

Mr. Chiaradia next updated the CAG on Western Avenue remediation activities.

See slide presentation below

The CAG took a 10-minute break.

8. Update of PGA-North activities –Stephanie Lyn Koehne, AMEC Geomatrix Project Manager

Ms. Koehne's presentation to the CAG discussed the following topics: groundwater impacts, northeast regional treatment of groundwater, on-site revegetation, proposed additions to plume capture, irrigation well 34B retrofit, and 2010 accomplishments.

See slide presentation below

Ms. Koehn brought samples of the injection pipe and extraction pipe that was used for recently installed injection wells.

Mr. Ellis requested larger map sizes in the future than what Ms. Koehn had provided for the AMEC Geomatrix presentation. Ms. Holland inquired on the installation time of injection well IA-13. Ms. Koehn responded it would take about a week for installation of this well and electrical would then follow. Ms. Koehn added that high traffic concerns were at the forefront for this well installation. Mr. Raible inquired where future extraction wells would be located and how many would be installed in 2011. Ms. Koehn, didn't reveal exact well install sites, but added that two groundwater monitoring wells and one injection well would be installed this year. She added that it is also possible that two additional injections wells would be installed by the end of this year. Ms. Koehn stated that for 2011, 12 additional monitoring wells and one extraction well would be installed.

Mr. Ellis inquired of AMEC Geomatrix representatives, Ms. Koehn and Mr. Brenton, to describe the capture of the plume. Ms. Koehn stated she felt that they have very good control of the plume at this point, and are working to control the newly discovered data gaps to determine if contamination exists in these areas. Mr. Ellis asked AMEC Geomatrix representatives that on a scale from 1-10, 10 meaning full plume containment, what level they felt they were at. Mr. Brenton didn't state a number but responded that they were close to plume containment.

Mr. Raible addressed his concerns over the data gaps associated with PGA-North with both Mr. Brenton and Ms. Koehn. Mr. Ellis inquired when the PGA-North plume was going to begin to decrease. Mr. Brenton responded that we are close to seeing that effect. Ms. Koehn added that plume containment and a final remedy are within the horizon. Ms. Krone expressed that a more aggressive approach in the onset of this plume by Crane Co. would have dramatically affected the now expansive plume. Mr. Scott and Mr. Brenton discussed groundwater flow to the northwest in relationship the plume migration. Mr. Scott stated to AMEC Geomatrix that he felt that the plume is not even defined and that if we are losing monitoring wells to the plume then we are not doing a good job staying ahead of this. Mr. Scott added that the data gaps AMEC Geomatrix spoke of earlier in their presentation meant to him that we are going to lose another well somewhere.

Mr. Ellis inquired of AMEC Geomatrix next steps for the site. Mr. Brenton stated their next steps centered on plume containment and a final remedy. Ms. Koehne added that all their remediation objectives require following established processes that included Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) guidelines. Mr. Ellis reiterated the CAG's request to have a Crane Co. representative, Anthony D. Pantaleoni, speak at a future CAG meeting. Ms. Koehne responded that the message was relayed, but from a technical position that it was felt by Crane Co., that the current technical staff who attend the CAG meetings are best qualified to speak at these meetings.

Mr. Brenton began his presentation on City of Goodyear (COG) well #3.

See slide presentation below

Mr. Brenton added that the trichloroethylene (TCE) concentrations in subunits A and C are relatively stable. Ms. Amos inquired of the time for source capture. Mr. Brenton responded that the time is hard to determine because it is not known the amount of TCE that was actually released at the site. Ms. Koehne advised the CAG that several tests were implemented to figure out the source, but that none of them were conclusive.

9. U.S. EPA updates for PGA-North and South activities – Catherine Brown, U.S. EPA Remedial Project Manager

Ms. Brown spoke on the Formal Dispute with Crane Co. regarding the additional five injection wells to ensure containment of plume and to allow future flexibility for reinjection of the water when and where it's needed. Ms. Brown added that statement of position documents from Crane Co. and U.S. EPA are being reviewed by Jane Diamond the Region 9 Superfund Division Director. Ms. Brown added that after Ms. Diamond's review a decision that will either end the dispute will occur or Crane Co. will have ten days to submit an appeal the Arizona Federal District court, but in the interim remediation work must continue to be conducted at the site. Ms. Brown added that during this Formal Dispute process she was advised by her legal council not to aggravate the Dispute by contacting Crane Co. regarding the CAG's request to have them speak at a future meeting, but mention that after this process she would communicate this information as well. Ms. Brown also expressed her support of the CAG's proposed letter to Crane Co.

Ms. Krone inquired how other community members could access a copy of the completed Five-Year review. Ms. Brown added that it can be accessed through the U.S. EPA Web site; repository and copies would be made available to CAG members.

Ms. Krone added that historically when Crane Co. failed to take remediation actions, U.S. EPA was able to act and charge Crane Co., back for that remediation service. Ms. Brown replied that at that time there was not a Consent Decree (CD) agreement with Crane Co., so CERCLA allowed U.S. EPA to take action, but as of 2006 a CD does exist that specifies the terms in which U.S. EPA could take such action. Ms. Brown added that the groundwater investigation is also driven by the CD. Ms. Brown reminded the CAG that the Record of Decision (ROD) that calls for aquifer restoration not just groundwater containment of the plume. Ms. Brown mentioned that the Five-Year review for the site was completed in September and added that she views this as a report card on the remedy and a useful tool going forward.

10.*Call to the Public

Mr. Carlo stated that he sensed and agreed with the CAG's frustration regarding the unresponsiveness of Crane Co.

11. Future meeting and agenda items discussion

Mr. Ellis proposed to have another meeting before their next meeting in February to review and vote final the CAG letter to Crane Co. and discuss CAG business, if any. Mr. Raible made a motion to have such a meeting that would not require technical staff presence and Mr. Scott seconded. The motion passed unanimously by the CAG. Ms. Calderon advised the CAG that she would contact them to set a time, date and location for this meeting after the letter was finalized.

The Group requested that future CAG presentations be sent to Ms. Calderon a week prior to meetings for distribution to the CAG.

The next CAG meeting was scheduled for Thursday, February 10, 2010 at the Goodyear City Hall, 190 N. Litchfield Rd., Goodyear, AZ. Suggested agenda topics for the next CAG meeting included: updates on PGA-North, PGA-South, Western Avenue activities, Community Involvement Activities, a CAG site tour of PGA-North, and final CAG Crane Co., letter presentation.

12. Adjournment

Ms. Krone adjourned the meeting.





Rehabilitation of
Injection Well
I-201
5/27/2010



Delivery System



**Extraction Well
E-102**



Five Year
Review Site
Inspection
5/7/2010

Subunit A Treatment System





+GF+

7.35 pH
34.20 °F

Signal pH/ORP
Transmitter

ENTER





Subunit C Treatment System

GAC 4
Investigation
GMW-21UC
6/8/2010





Roll-Off
container for drill
cuttings



Cuttings

646



GMAW
140

GMAW

GMAW
160

GMAW
210

GMAW
240

GMAW
250

GMAW
170

GMAW
180

GMAW
190

GMAW
210

GMAW
240

GMAW
250

GMAW
270

GMAW
280

GMAW
350

GMAW
370

Western Avenue PCE



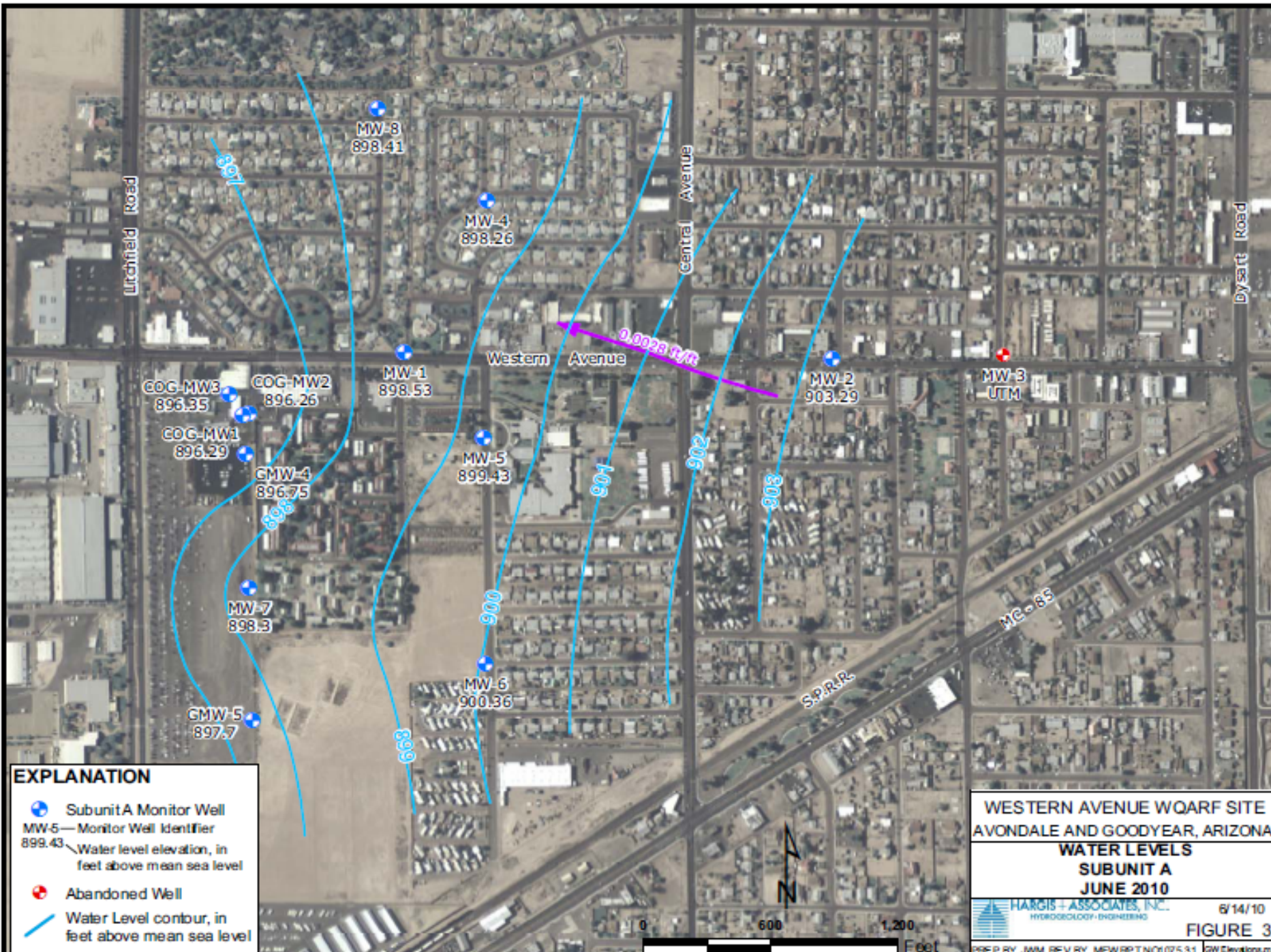


Water Level Measurement



Cover for
Monitoring Well
COG-03






EXPLANATION

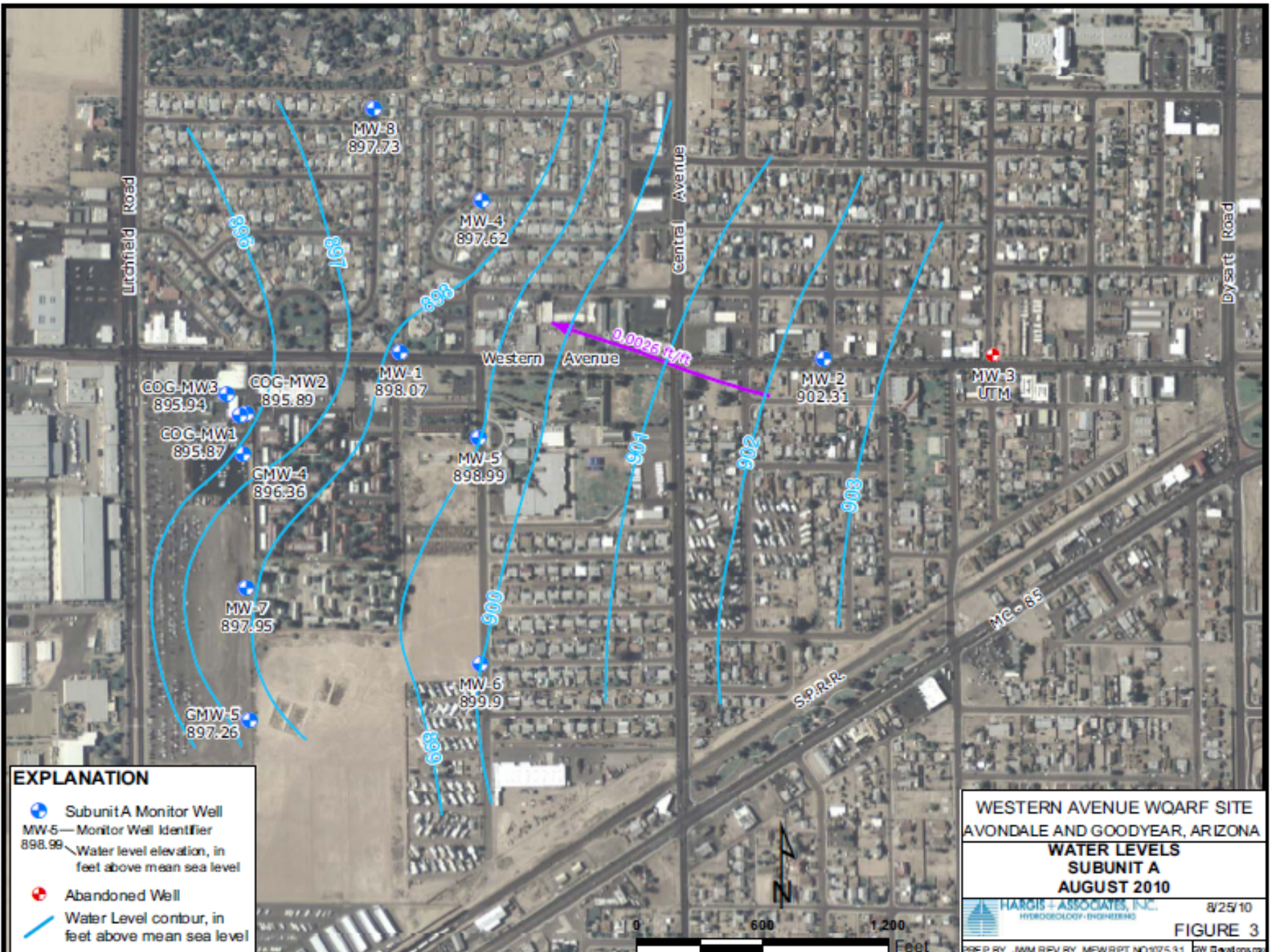
- Subunit A Monitor Well
- MW-5—Monitor Well Identifier
899.43
- Water level elevation, in feet above mean sea level
- Abandoned Well
- Water Level contour, in feet above mean sea level

WESTERN AVENUE WQARF SITE
 AVONDALE AND GOODYEAR, ARIZONA
**WATER LEVELS
 SUBUNIT A
 JUNE 2010**


 HARGIS + ASSOCIATES, INC.
 HYDROGEOLOGY • ENGINEERING

6/14/10
FIGURE 3

PREP BY JMM REV BY MFW RPT NO: 07531 GW Elevations.mxd



EXPLANATION

- Subunit A Monitor Well
- MW-5— Monitor Well Identifier
- 898.99— Water level elevation, in feet above mean sea level
- Abandoned Well
- Water Level contour, in feet above mean sea level

WESTERN AVENUE WQARF SITE
AVONDALE AND GOODYEAR, ARIZONA
WATER LEVELS
SUBUNIT A
AUGUST 2010

8/25/10


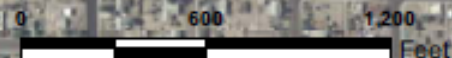
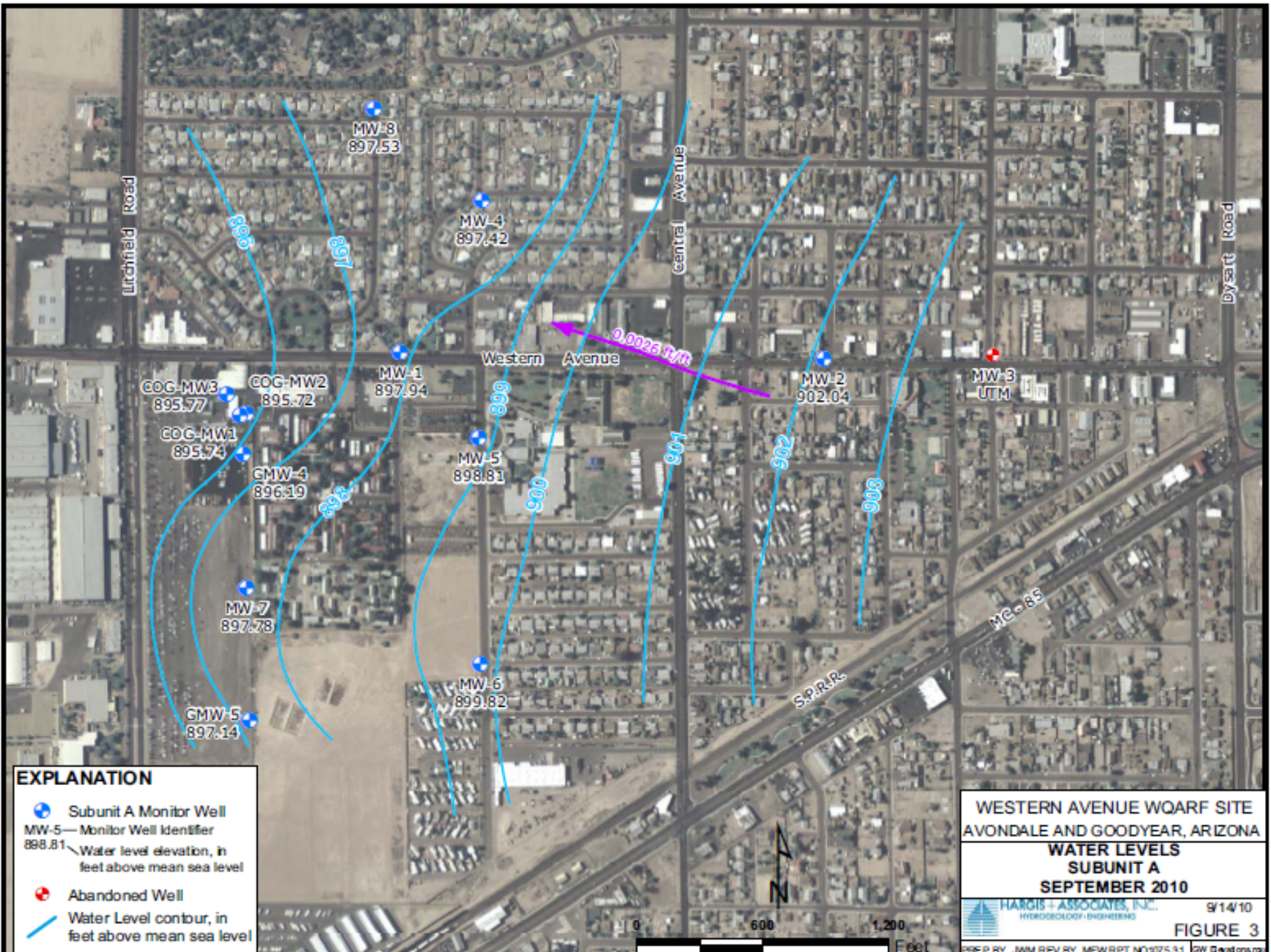

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 HYDROGEOLOGY • ENGINEERING

FIGURE 3

PREP BY JWM REV BY MFWRPT NO1075.31 JW © 2010 ons, ms





EXPLANATION

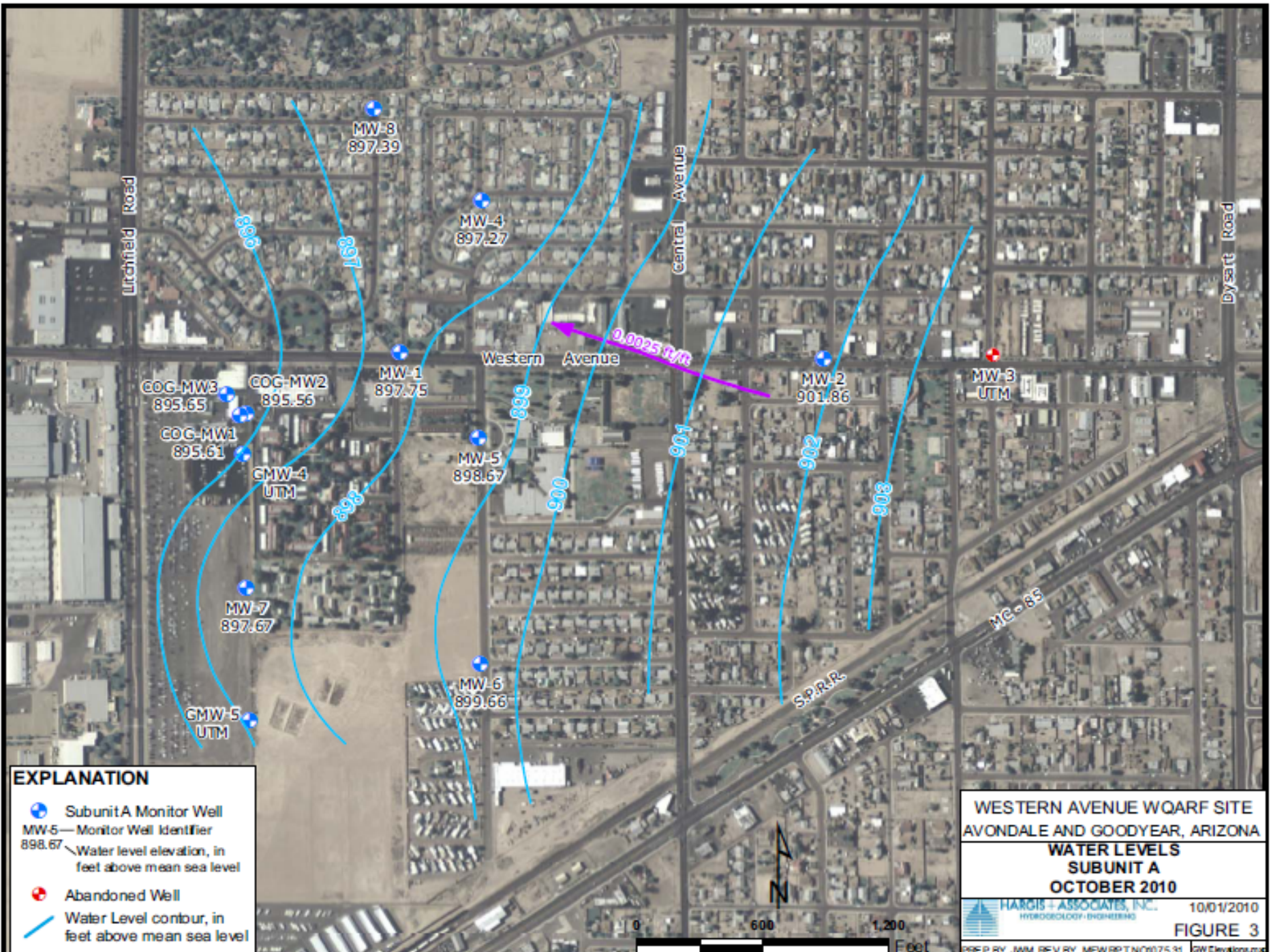
- Subunit A Monitor Well
MW-5— Monitor Well Identifier
898.81— Water level elevation, in feet above mean sea level
- Abandoned Well
- Water Level contour, in feet above mean sea level

WESTERN AVENUE WQARF SITE
AVONDALE AND GOODYEAR, ARIZONA
WATER LEVELS
SUBUNIT A
SEPTEMBER 2010

9/14/10
FIGURE 3

HARGIS + ASSOCIATES, INC.
 HYDROGEOLOGY • ENGINEERING

PREP BY JWM REV BY MFWRPT NO1075.31 GW © 2010 hars, inc.



EXPLANATION

- Subunit A Monitor Well
MW-5— Monitor Well Identifier
898.67 \ Water level elevation, in feet above mean sea level
- Abandoned Well
- Water Level contour, in feet above mean sea level

WESTERN AVENUE WQARF SITE
AVONDALE AND GOODYEAR, ARIZONA

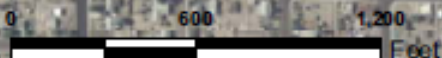
**WATER LEVELS
SUBUNIT A
OCTOBER 2010**

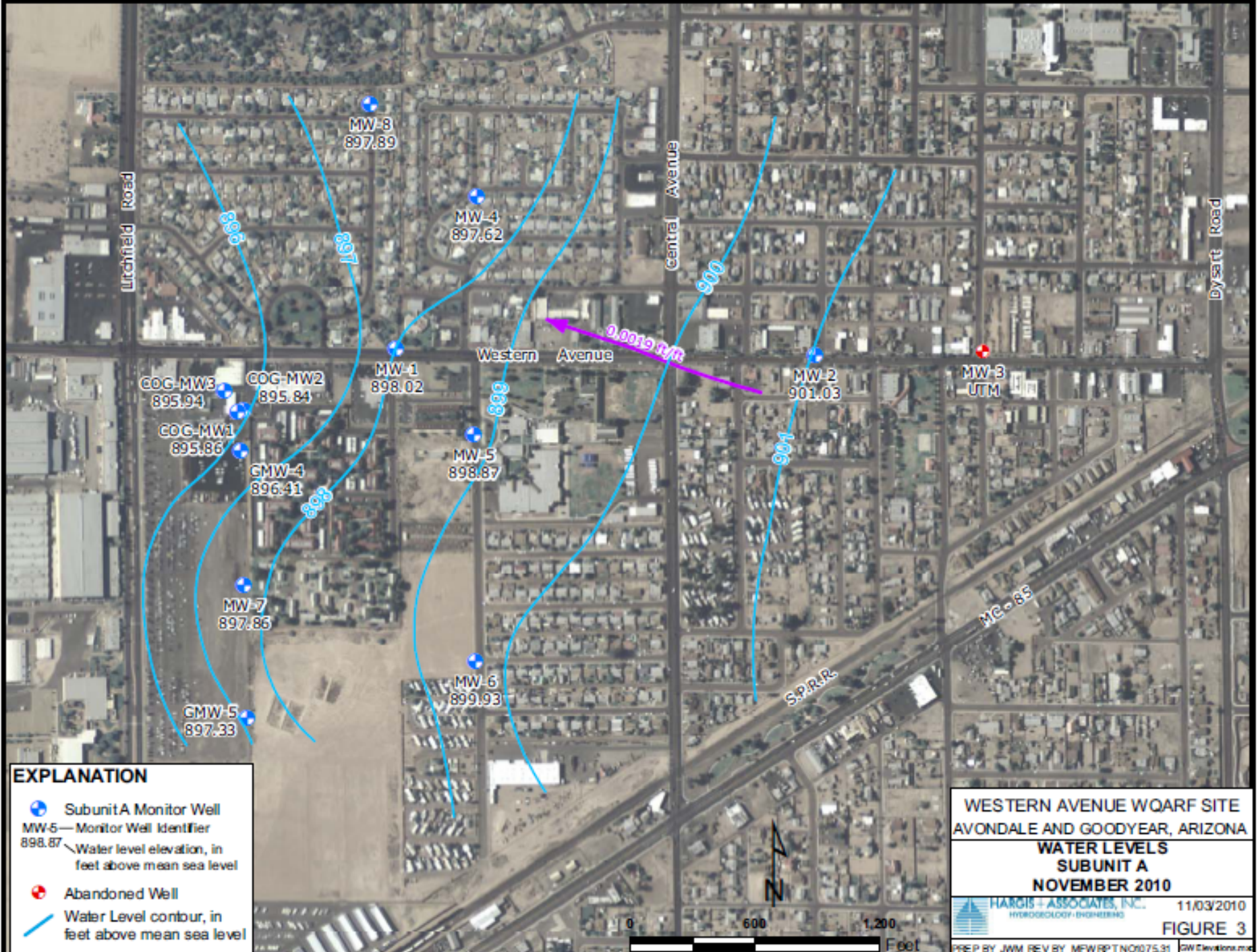
10/01/2010

FIGURE 3

HARGIS + ASSOCIATES, INC.
HYDROGEOLOGY • ENGINEERING

PREP BY JMM, REV BY MFWRPT/NO107531 | GW Elevations.mxd






EXPLANATION

- Subunit A Monitor Well
MW-5— Monitor Well Identifier
898.87 \ Water level elevation, in feet above mean sea level
- Abandoned Well
- Water Level contour, in feet above mean sea level

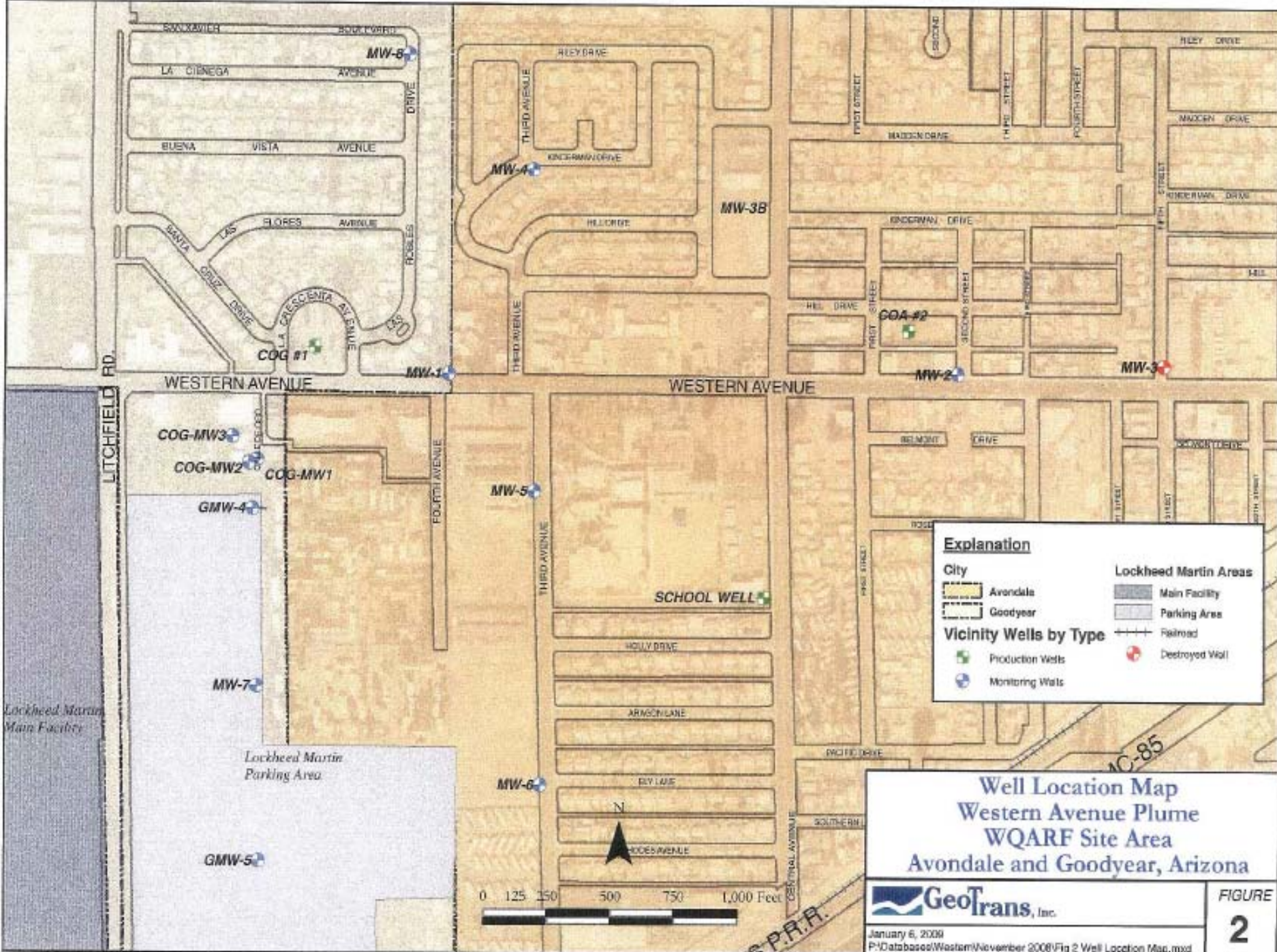
WESTERN AVENUE WQARF SITE
AVONDALE AND GOODYEAR, ARIZONA

**WATER LEVELS
SUBUNIT A
NOVEMBER 2010**


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 HYDROLOGY • ENGINEERS

11/03/2010
FIGURE 3

PREP BY JWM, REV BY MEWRPT NO 07531 GW Elevations.mxd



Explanation

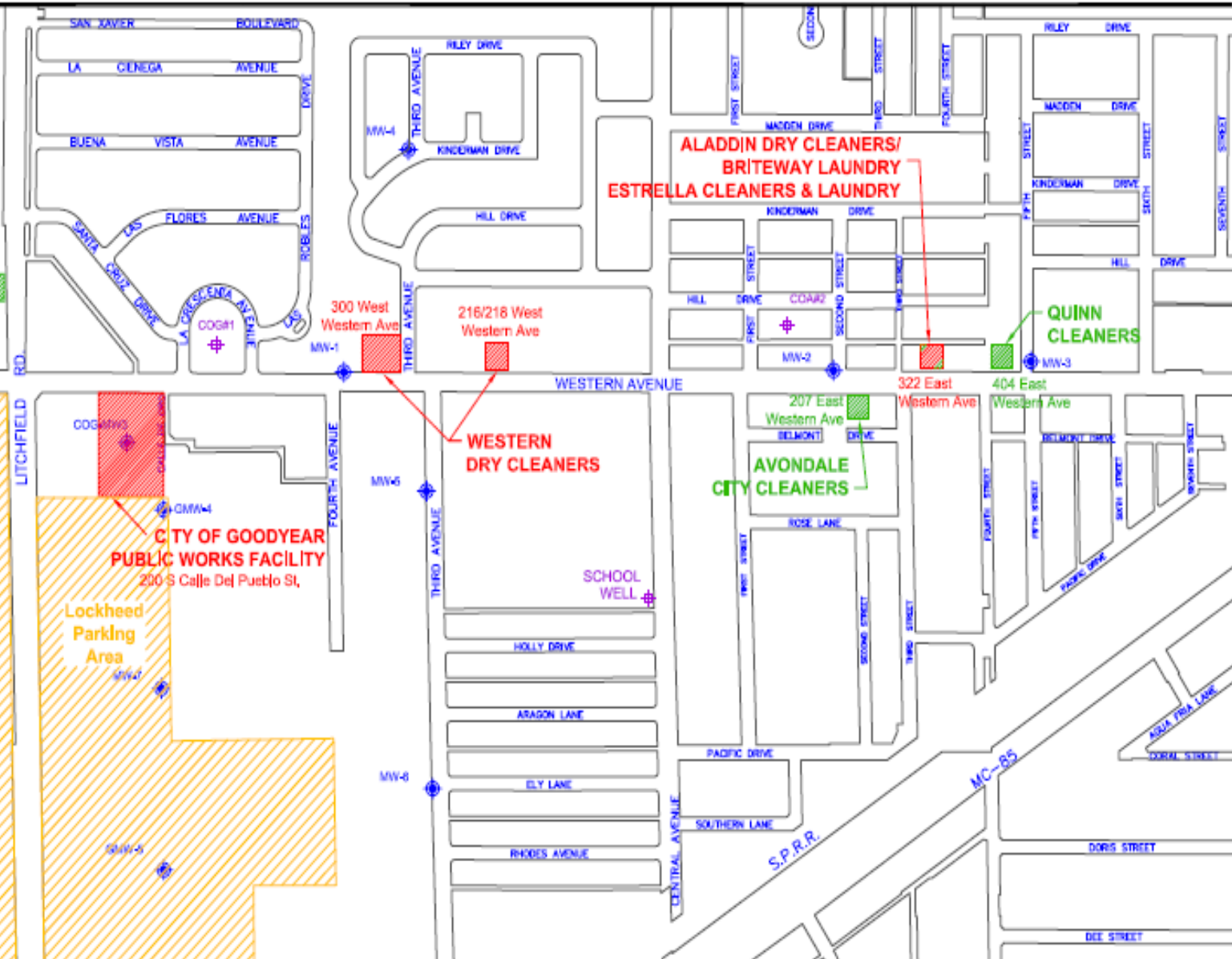
City	Lockheed Martin Areas
[Dashed Box] Avondale	[Dark Grey Box] Main Facility
[Dotted Box] Goodyear	[Light Grey Box] Parking Area
Vicinity Wells by Type	[Cross Symbol] Railroad
[Green Circle with Cross] Production Wells	[Red Circle with Cross] Destroyed Well
[Blue Circle with Cross] Monitoring Wells	

Well Location Map
Western Avenue Plume
WQARF Site Area
Avondale and Goodyear, Arizona



NAME UNKNOWN
1072 S. Litchfield Road

GOODYEAR
DRY CLEANERS
1084 S. Litchfield Road



EXPLANATION

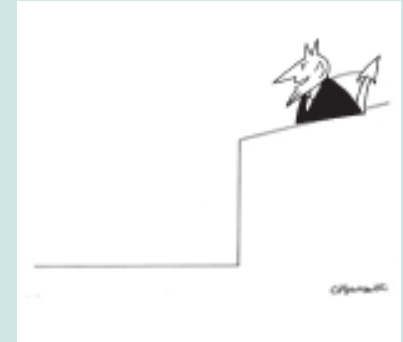
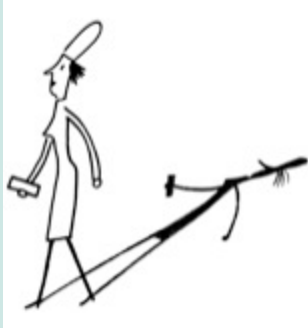
-  SUBURBAN MONITOR WELL
-  PRODUCTION WELL
-  KNOWN HISTORICAL DRY CLEANER LOCATION
-  PAISI INVESTIGATION COMPLETED



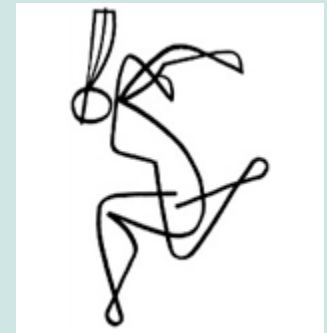
TITLE: LOCATION OF PAISI INVESTIGATIONS AND OTHER HISTORICAL DRY CLEANER LOCATIONS

LOCATION: WESTERN AVENUE WQARF SITE

	CHECKED: <input type="checkbox"/> RHP	FIGURE
	DRAWN: <input type="checkbox"/> RHP	2-3
	PROJECT: 130301024	
DATE: 6/9/05		



¿Questions?



Phoenix Goodyear Airport-South Project Site Status Report

Community Advisory Group
Meeting November 4, 2010

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GOODYEAR

TRC

Agenda

- Review Current Activities
- Update Status of Ongoing Cleanup
- Upcoming Activities

Review of Current Activities

- Southern Subunit C Monitoring Update
- GAC – 04 Investigation and Sampling Results
- Treatment System Performance Summary

Southern Subunit C Monitoring Update

- Southern Subunit C TCE plume originally covered 60 acres
- Between 2008 through August 2009, all southern Subunit C wells were below the MCL (5µg/l) for TCE
- GTRC petitioned and ADEQ/EPA approved shutdown of the last active extraction well (E-201) in Sept 2009

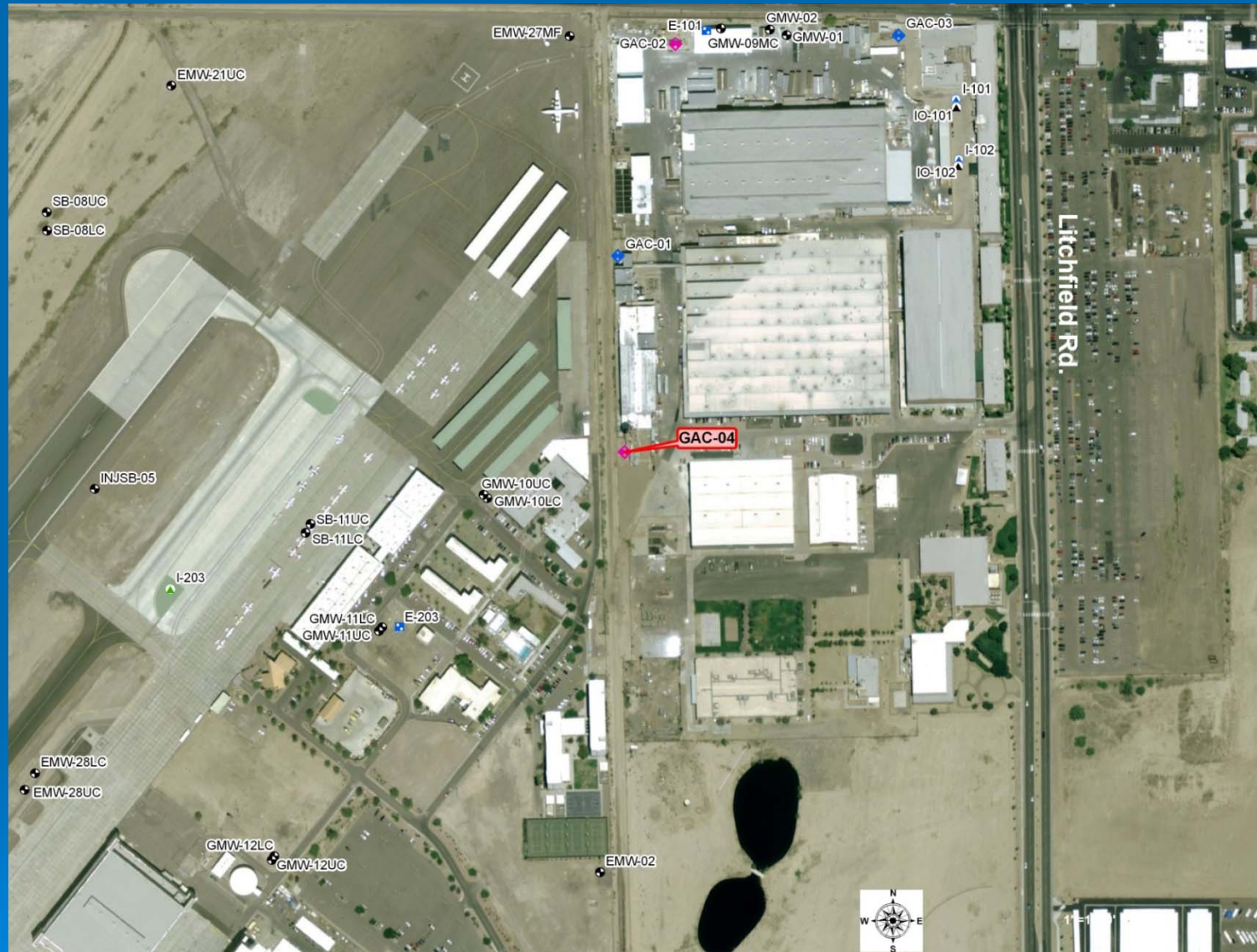
Southern Subunit C Monitoring Update

- Since Sept 2009, monitoring wells sampled quarterly for one year (through August 2010) to evaluate potential rebound in TCE concentrations
- No TCE increases observed in wells sampled during the evaluation period
- All southern Subunit C wells remain below 5 $\mu\text{g/l}$ (with exception of single well)

Southern Subunit Monitoring Path Forward

- Conduct “snap shot” sampling of all southern Subunit C wells within original TCE plume footprint, including wells outside footprint not sampled recently
- Additional wells will be sampled during November/December quarterly monitoring event

GAC-04 Investigation Update



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TRC

GAC-04 Investigation and Sampling Update

- Continued operation of GAC-04 and monthly sampling
- TCE results from last 6 months $< 6.6 \mu\text{g/L}$ (when GAC-04 is pumped)
- Rebound test initiated on April 1, 2010 and completed April 29, 2010
- Monthly sampling of GMW-21UC and GMW-22UC through November 2010

GAC-04 Investigation Well Locations

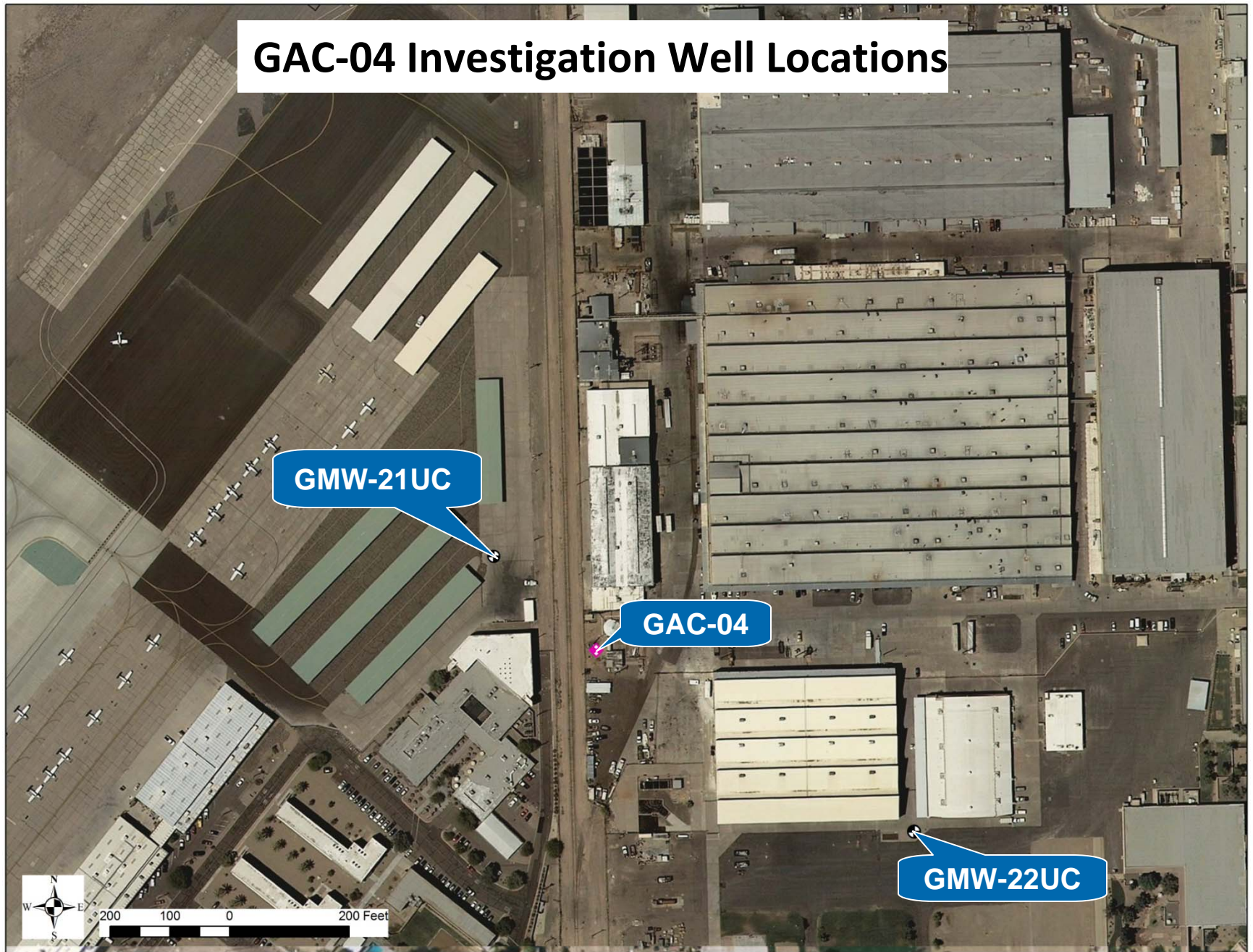
GMW-21UC

GAC-04

GMW-22UC



200 100 0 200 Feet



GAC-04 / GMW-21UC / GMW-22UC Sampling Results

Sample Date	GAC-04	GMW-21UC	GMW-22UC
June '10	5.2	140*	<0.48
July '10	7.2	4.5	<0.5
Aug '10	6.1	0.6	<0.5
Sept '10	6.6	0.5	<0.5
Oct '10	DNA	0.8	<0.5

Notes:

µg/L = micrograms per liter

TCE = Trichloroethene

DNA = Data Not Available

* = Anomalous Data

Status of Ongoing Cleanup

Subunit A Aquifer

- Peak TCE concentrations in monitoring wells have declined from 2,600 µg/L in 1990 to 98 µg/L in August 2010
- Treatment System Uptime during Q3 was 99.9%

Subunit C Aquifer

- Peak TCE concentrations in Northern Subunit C monitoring wells have declined from 180 µg/L in 1990 to 96 µg/L in August 2010
- Routine carbon replacement in Southern Subunit C Treatment System
- Treatment System Uptime during Q3 was 99.9%

Carbon Replacement Activities



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Carbon Replacement Activities



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Carbon Replacement Activities



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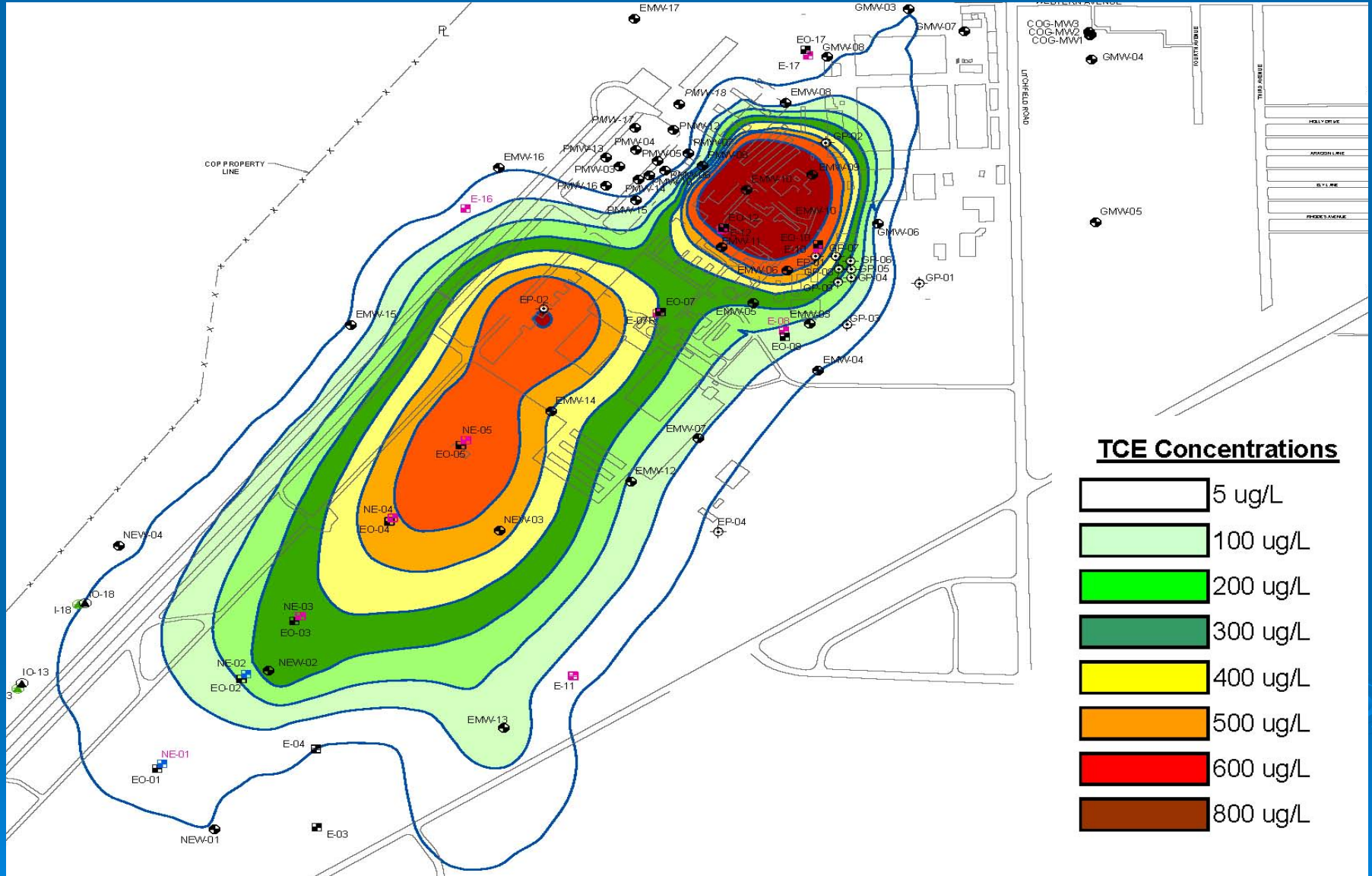
GOODYEAR

 TRC

Groundwater TCE Cleanup Progress

Subunit	Max TCE (µg/L) 1990	Max TCE (µg/L) August 2010	Volume Pumped (Mgal)	TCE Removed (Lbs)
Subunit A	2,600	98 (E-12)	5,302	5,461
Southern Subunit C	150	6.0 (INJSB-05)	1,826	172
Northern Subunit C	180	96 (GMW-13UC)	2,138	60
		TOTAL	9,266	5,693

Subunit A TCE Map June 1990

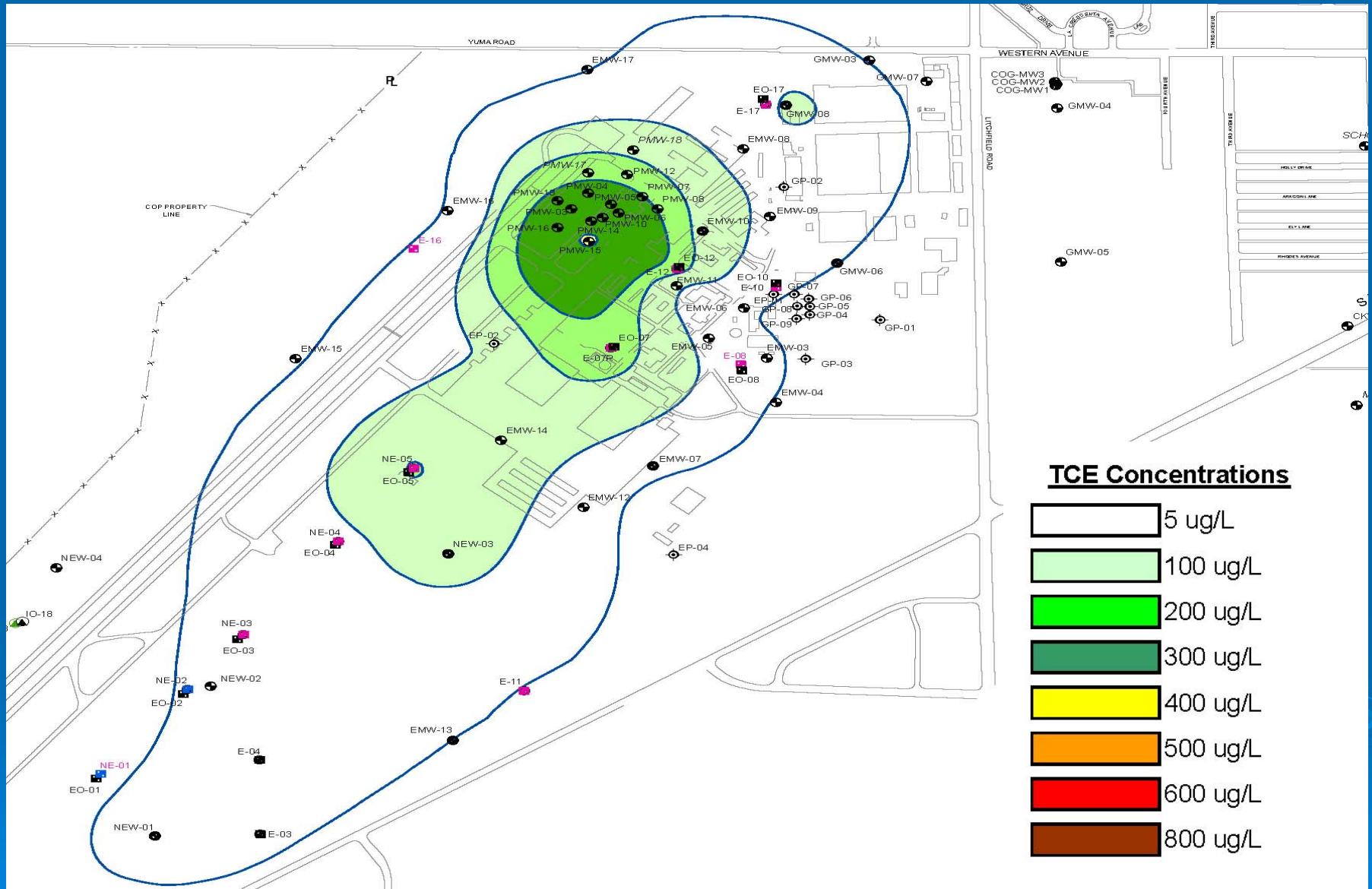


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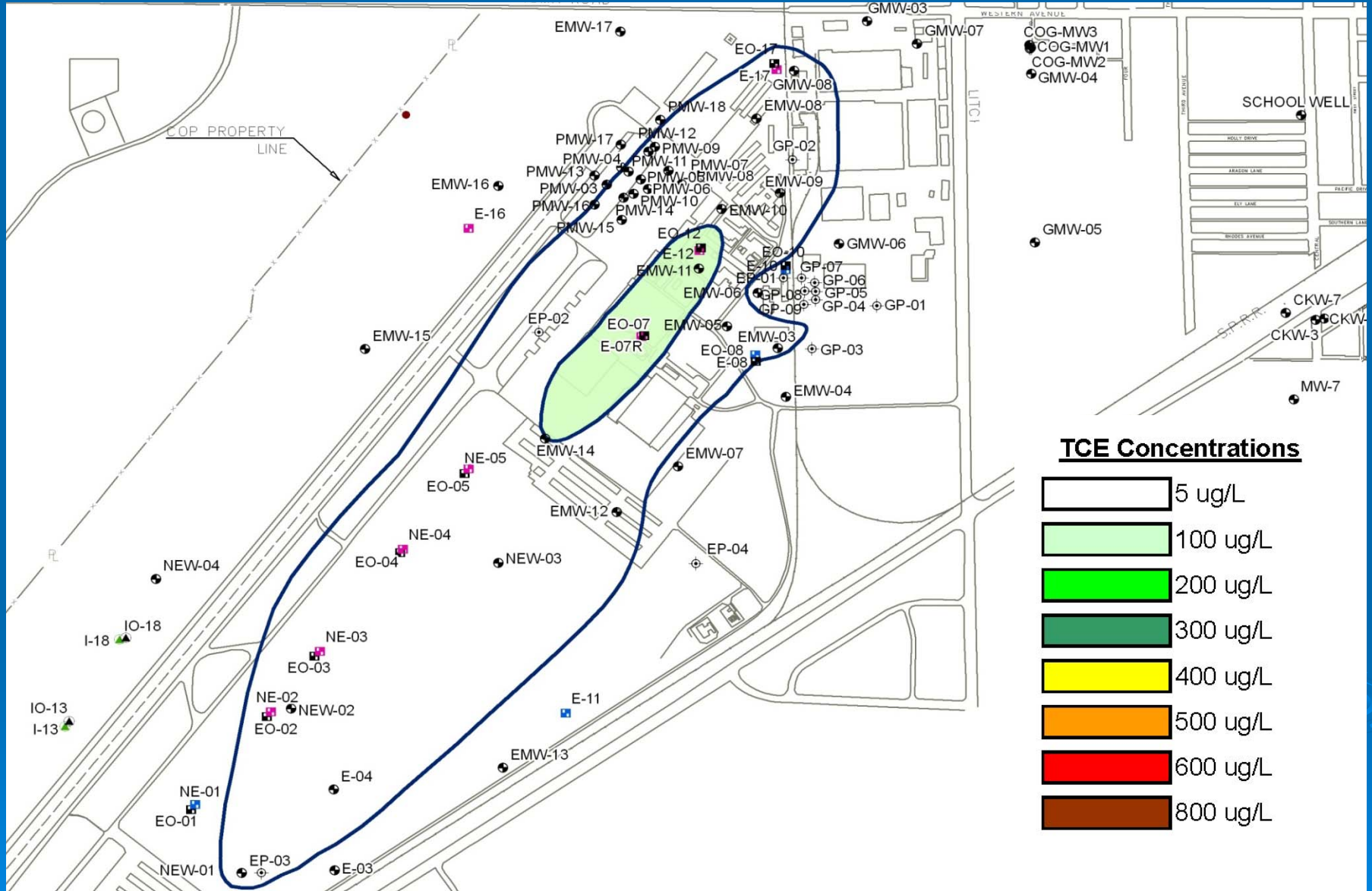


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Subunit A TCE Map May 1998

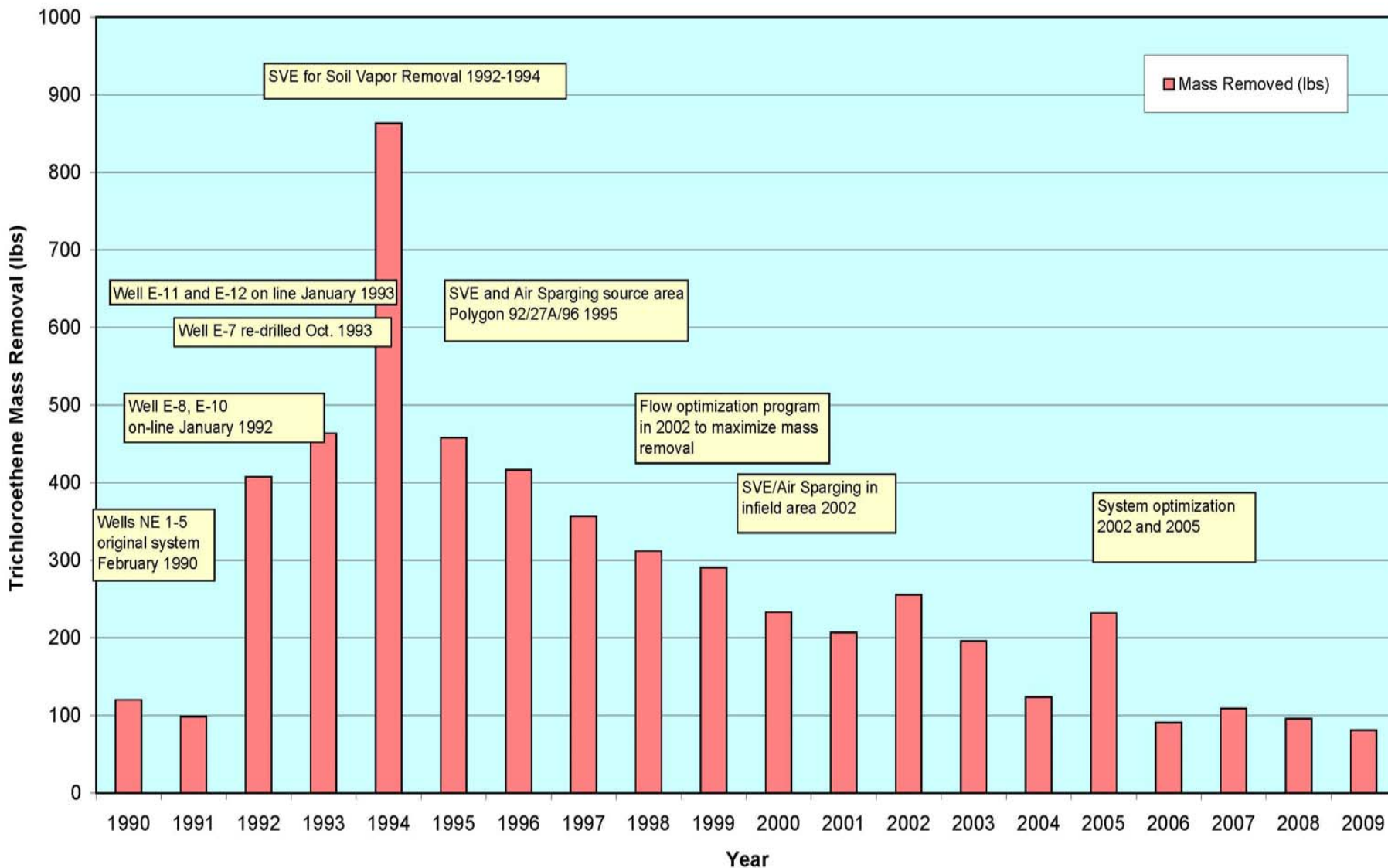


Subunit A TCE Map Feb 2009



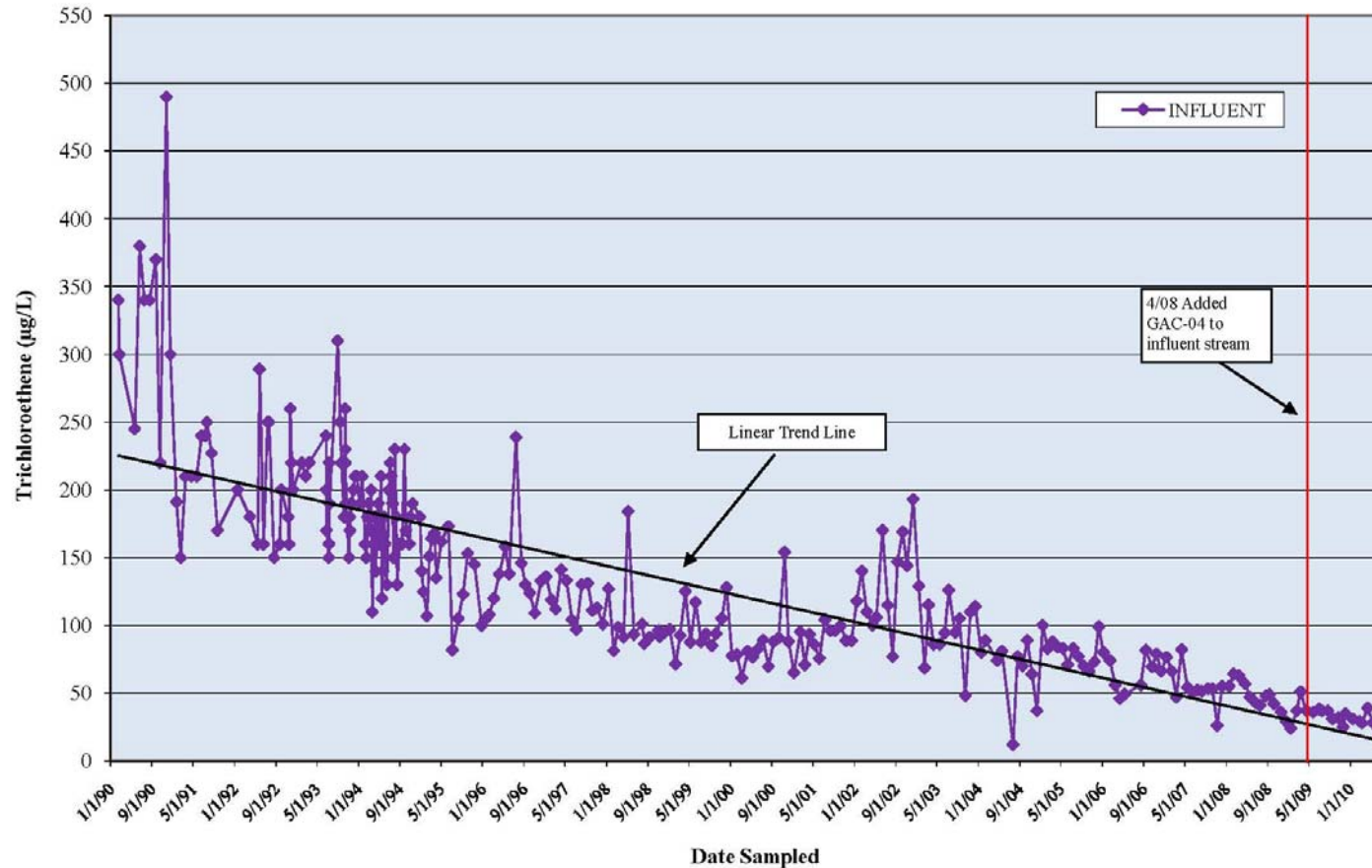
Subunit A TCE Mass Removal vs. Time

Subunit A Trichloroethene Mass Removal vs. Time Including History of Major Removal Efforts

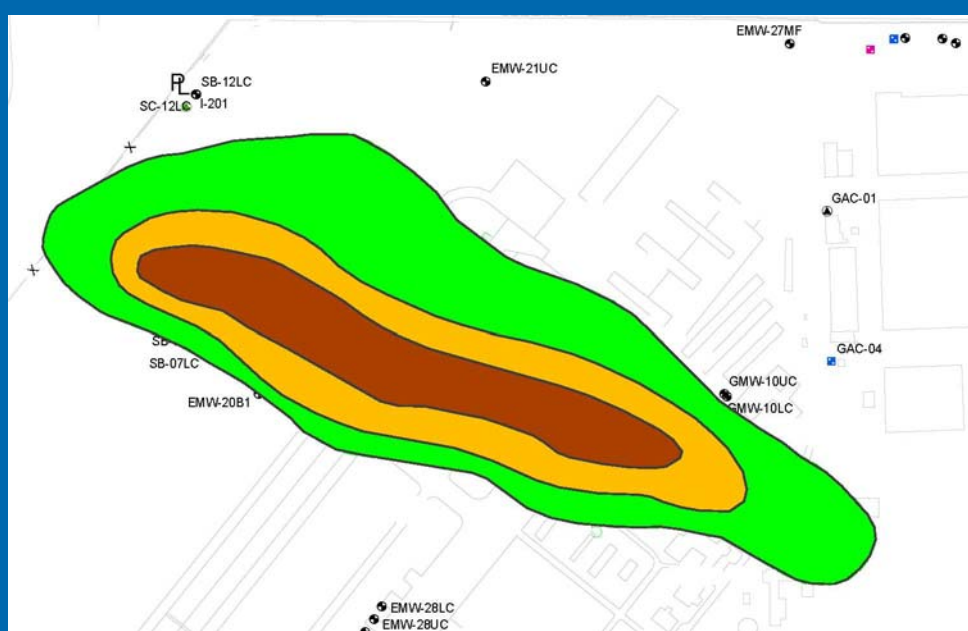


Subunit A Treatment System Air Stripper Influent Concentrations

Phoenix Goodyear Airport South Site
Air Stripper Influent Trichloroethene Concentrations Vs. Time

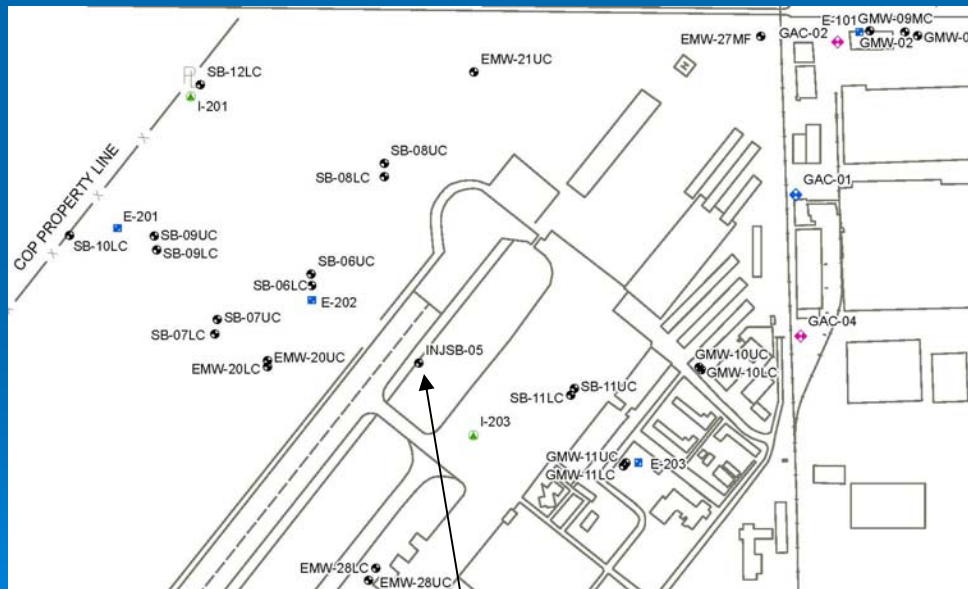


1994 TCE



SOUTHERN PLUME

2010 TCE



Well INJSB-05 contained TCE at 6.0 ug/L 9/10

Upcoming Activities

- Quarterly Groundwater Sampling Event scheduled to begin week of November 29, 2010
- Continued Evaluation of GAC-04, GMW-21UC and GMW-22UC
- Continued Monthly Technical Conference Calls with ADEQ/USEPA

CAG Meeting



November 4, 2010

COG-03



COG-03



- Located on La Canada Street ~ 2,000 ft east of Litchfield Road.
- Maximum pumping capacity of ~ 570 gpm
- Groundwater is pumped into a holding tank located on site
- Well pumps episodically, based on water demands
- Typically, high water demand months are May through October



COG-03



COG-03 Construction

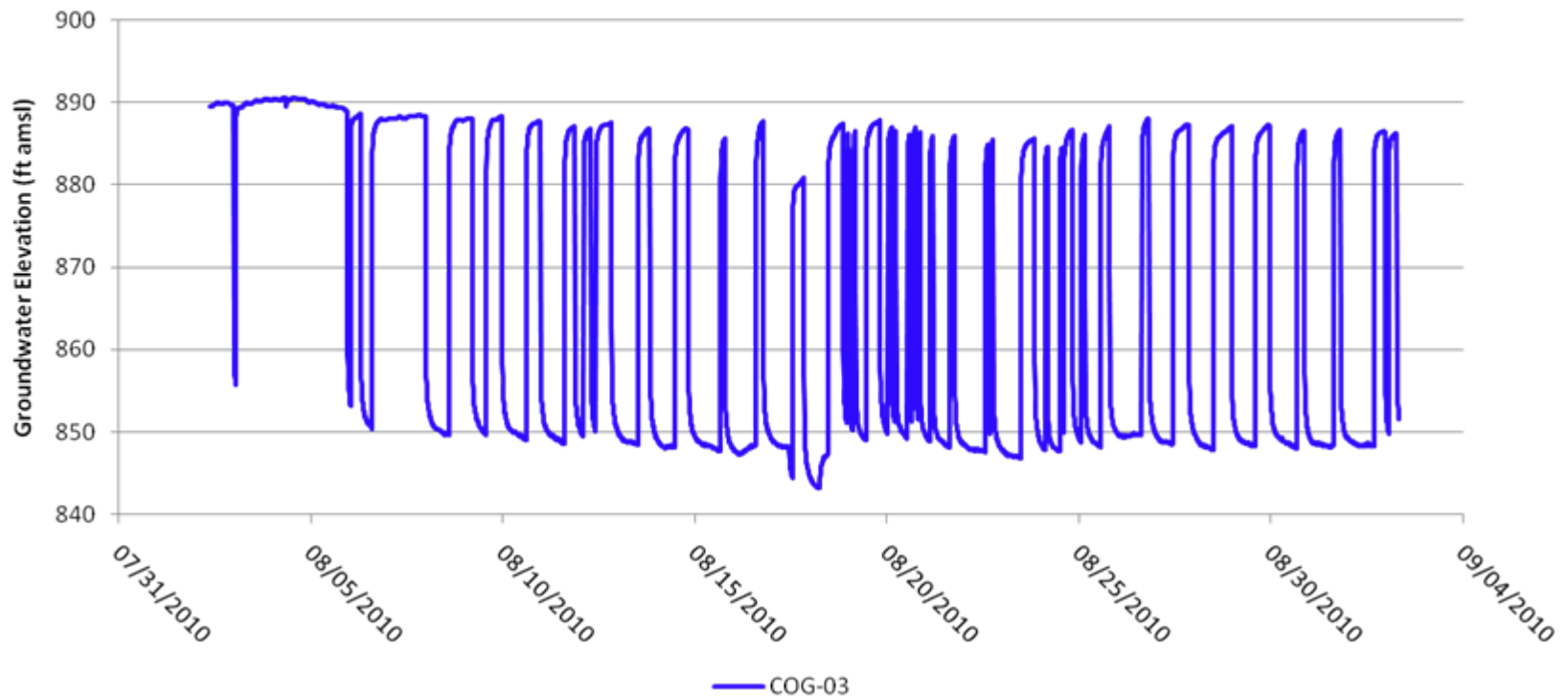
- Installed in 1959
- 16-inch diameter casing
- Perforated (246' – 250') and (254' – 260') Subunit C
- Bottom of well at 383'
- Retro fitted with 12-inch diameter casing in 1985
- Generally operates at ~530 gpm



COG-03



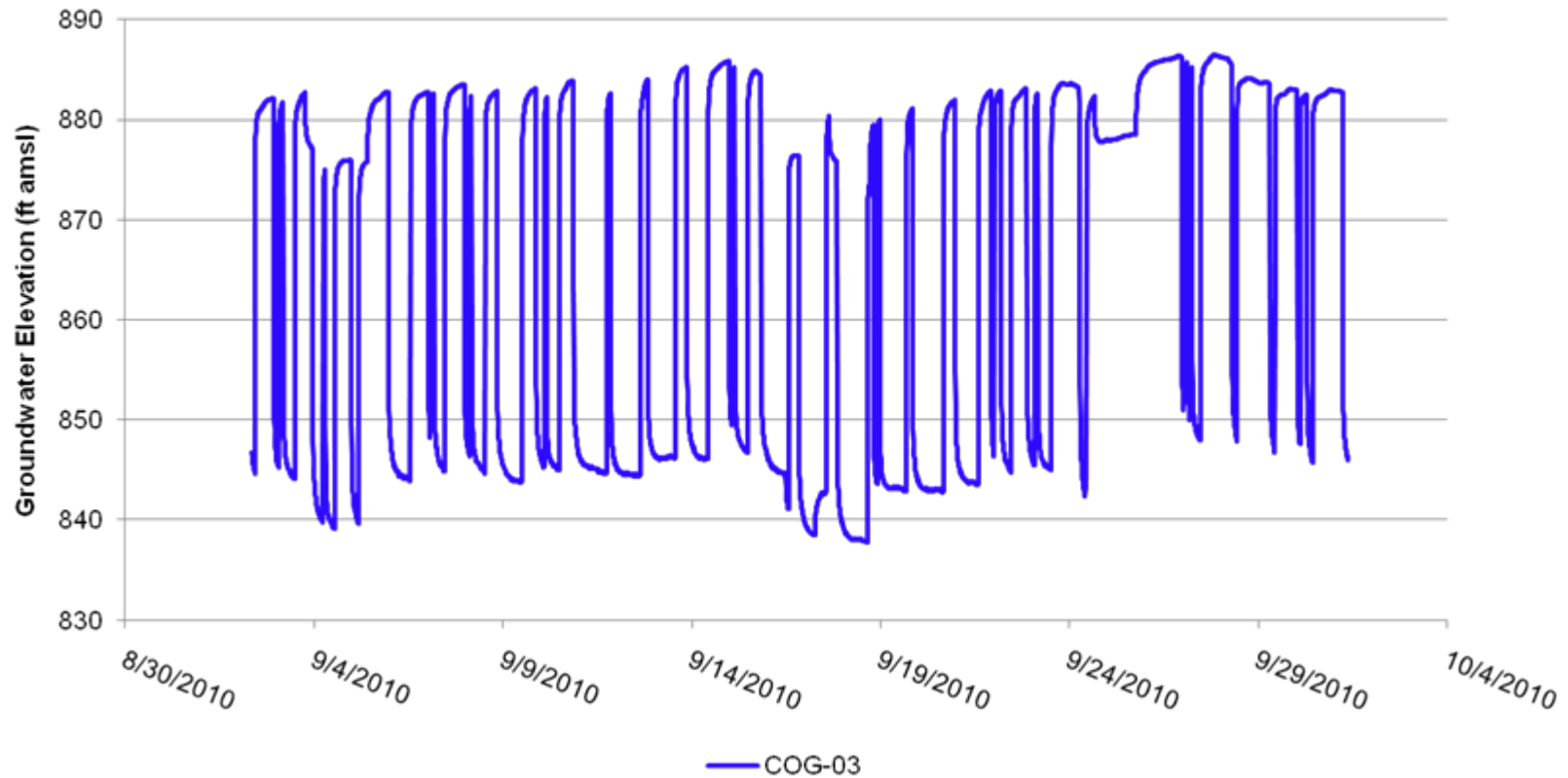
COG-03 Pressure Transducer Data August 2010



COG-03



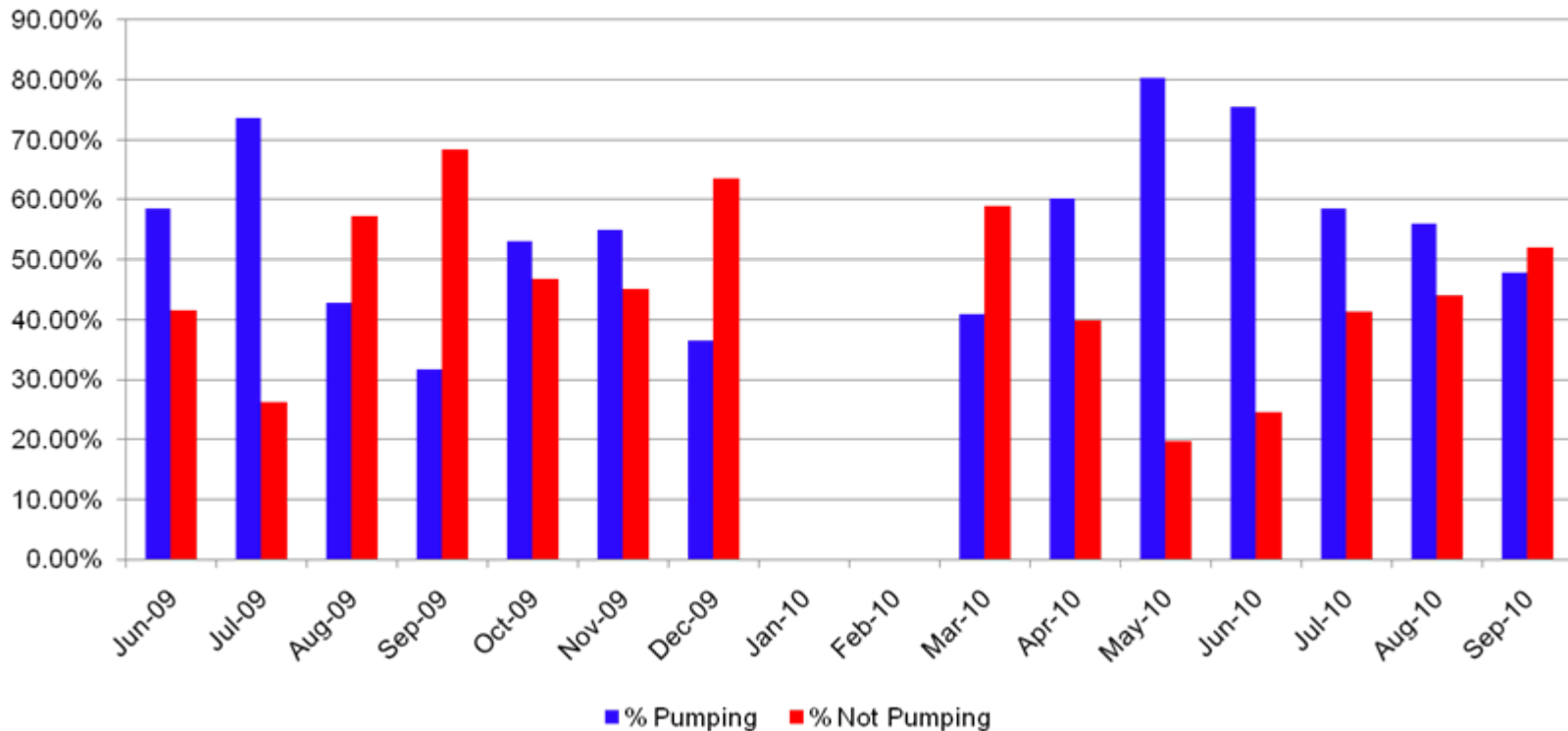
COG-03 Pressure Transducer Data September 2010



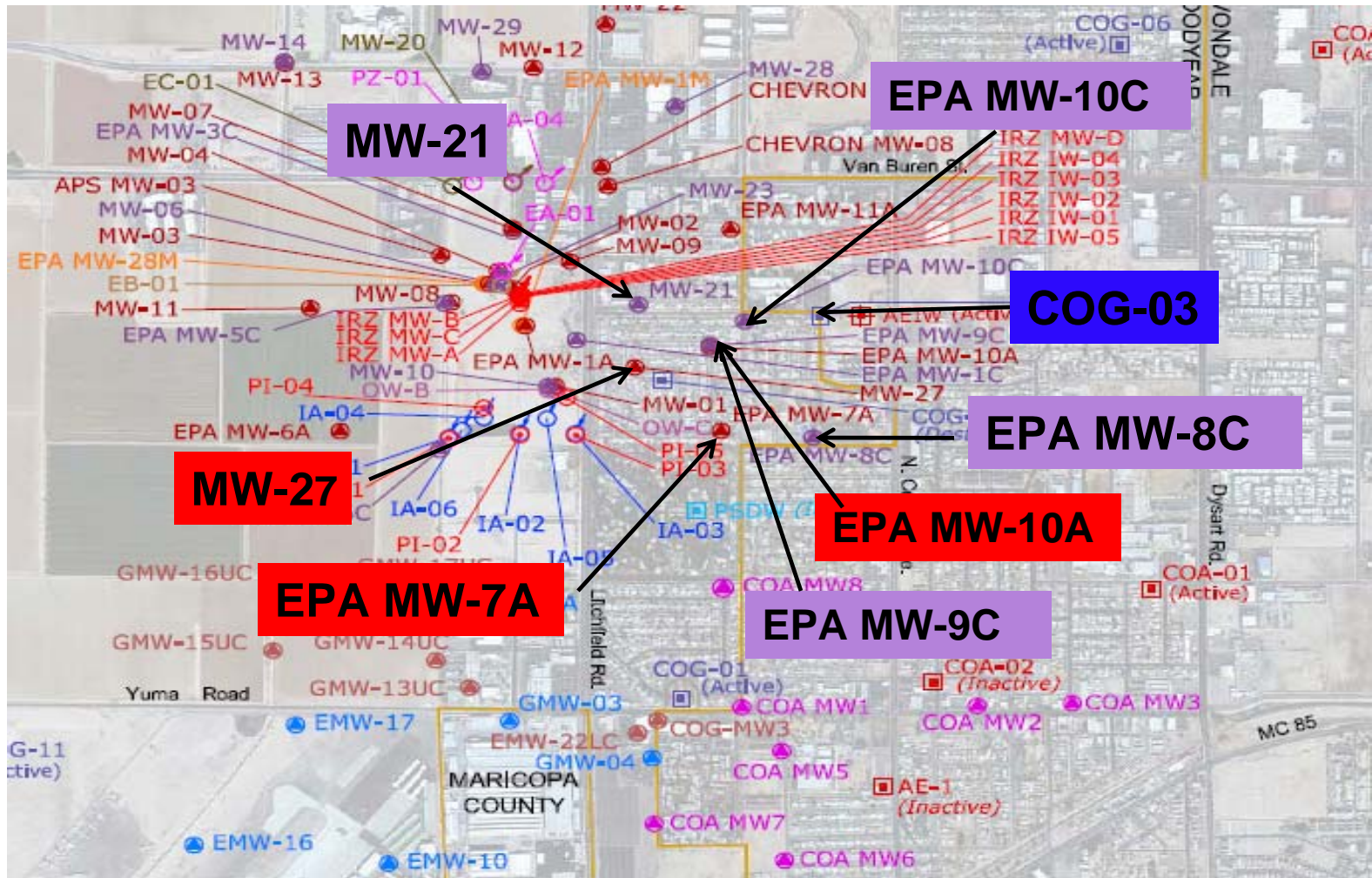
Operational History June 2009 thru September 2010



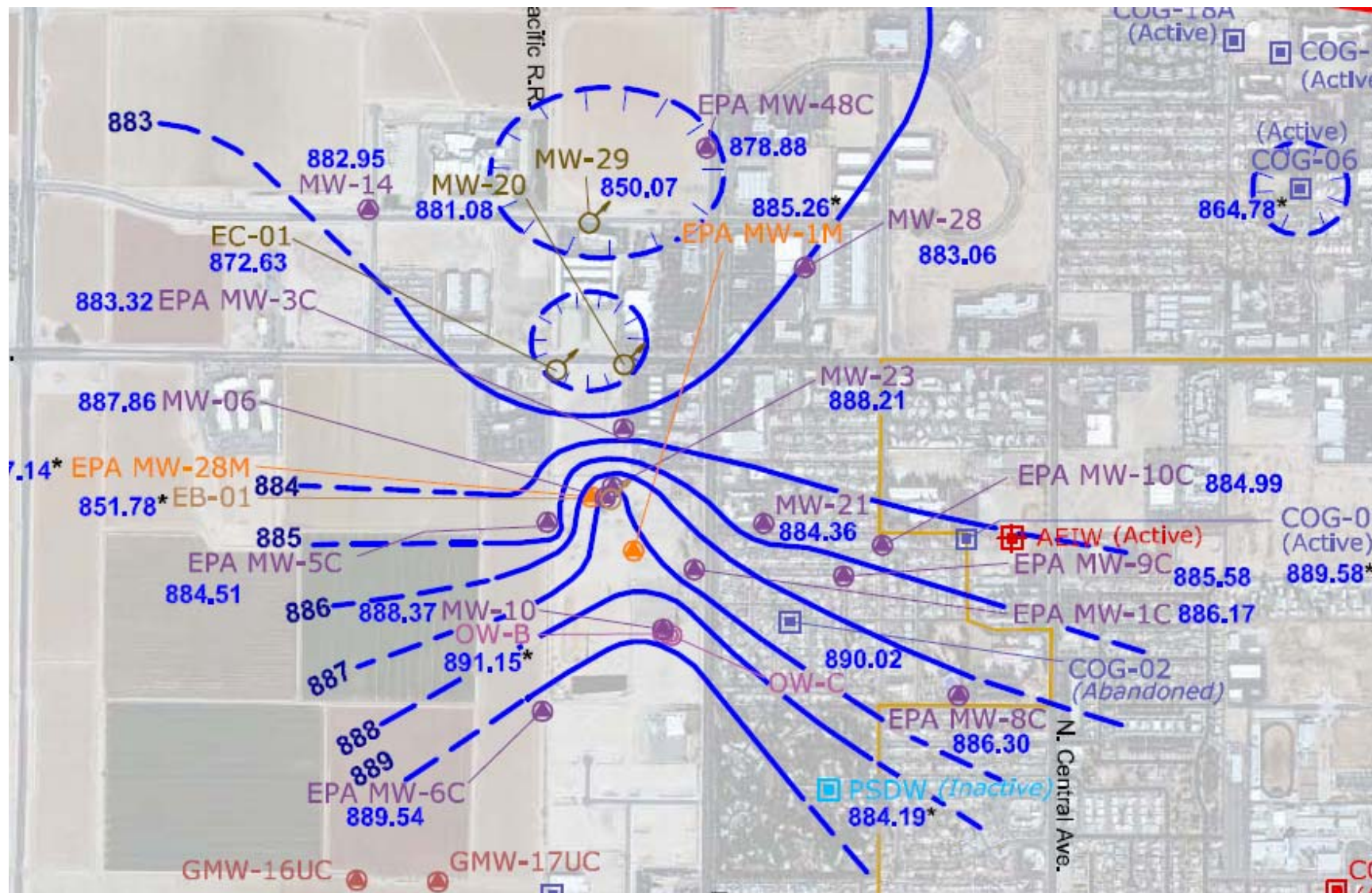
COG-03 Operational History Jun 2009 to Sep 2010



Monitor Wells - COG-03 Vicinity



Regional Subunit C Groundwater Flow August 2010 (3rd Qtr)



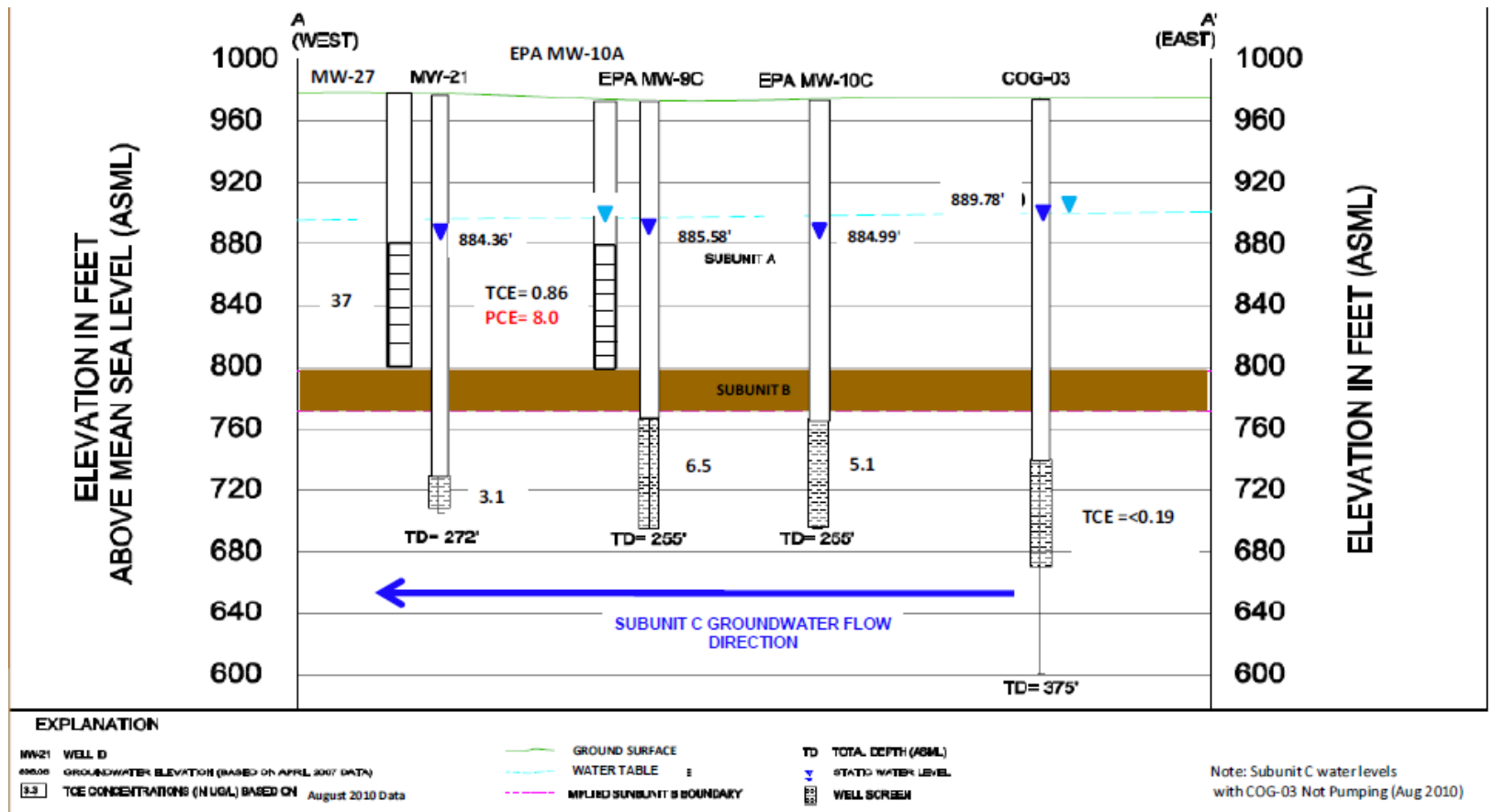
Subunit A and Subunit C Groundwater Levels Over Time



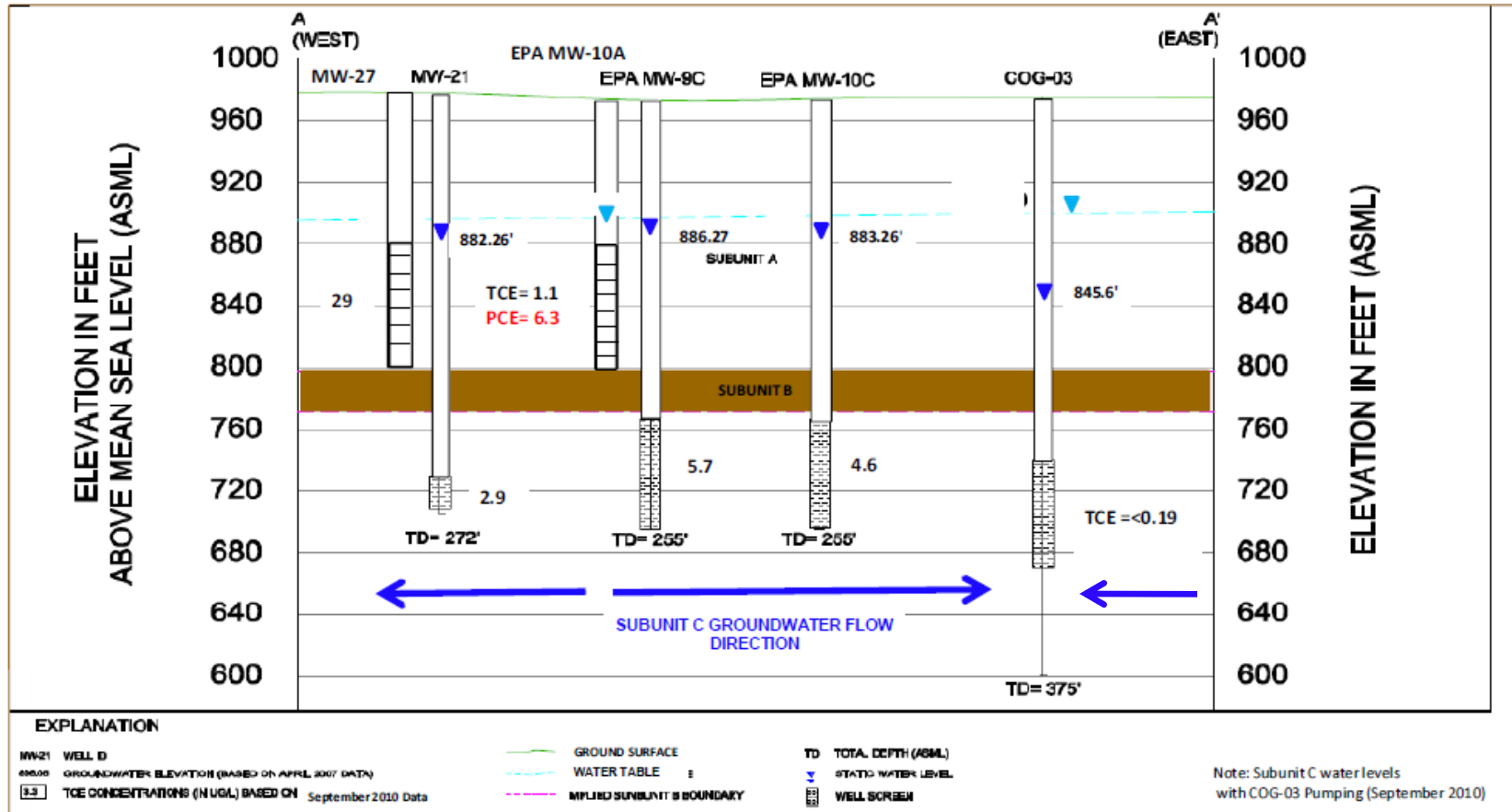
Subunit A/Subunit C Groundwater Levels Over Time Monitor Wells EPA MW-10A, 9C, and 10C



Generalized Hydrogeologic X-Section COG-03 Not Pumping (Aug 2010)



Generalized Hydrogeologic X-Section COG-03 Pumping (Sep 2010)



Current/Historic Analytical Results

July - September 2010



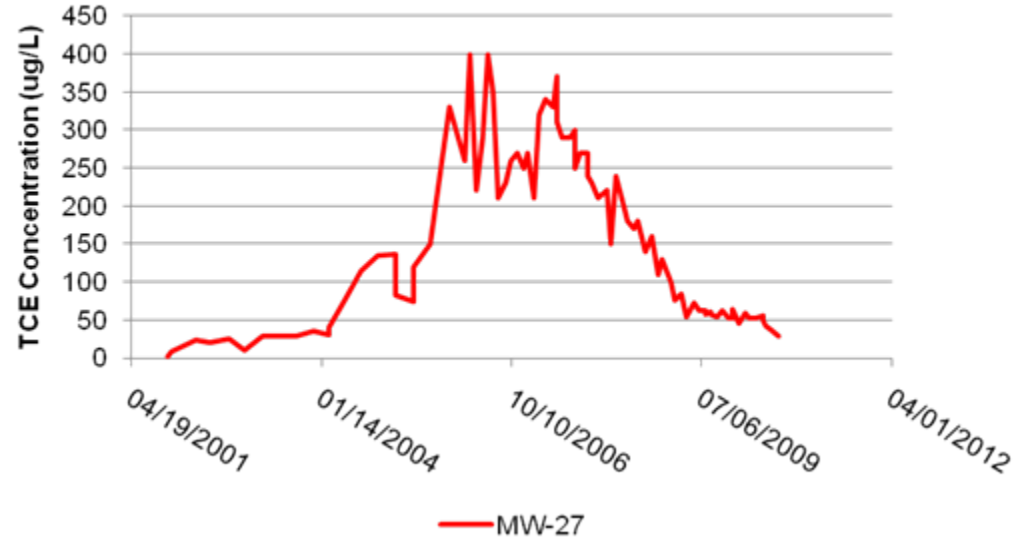
EPA MW-27 (Subunit A)

■ TCE

- Jul - 43 ug/L
- Aug 37 ug/L
- Sep 29 ug/L

■ PCE

- Jul - ND
- Aug ND
- Sep ND



Current/Historic Analytical Results July- September 2010



EPA MW-10A

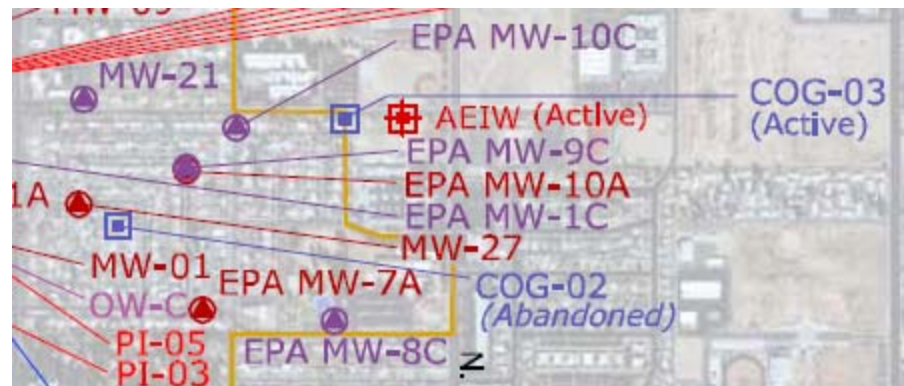
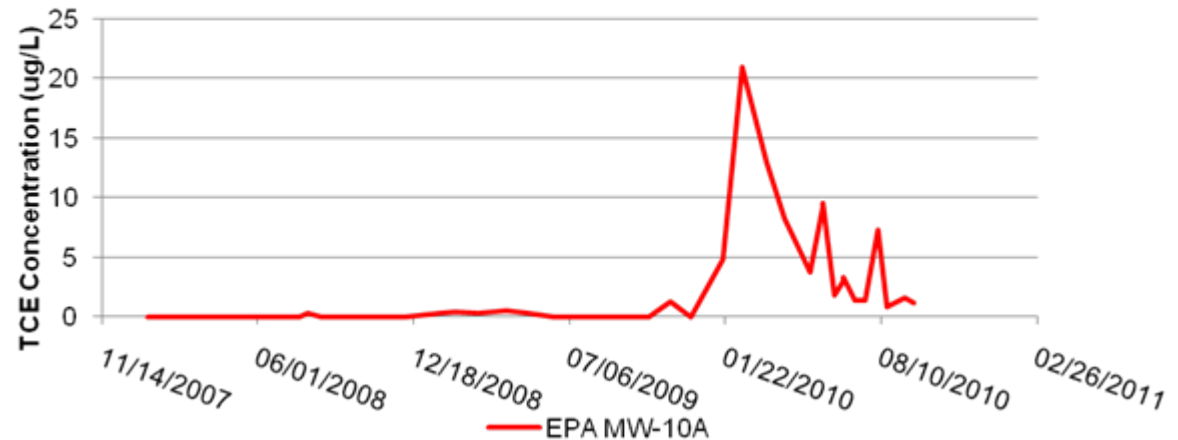
(Subunit A)

■ TCE

- Jul 1.4 ug/L
- Aug 7.3 ug/L
- Aug <0.86J ug/L
- Sep 1.6 ug/L
- Sep 1.1 ug/L

■ PCE

- Jul -8.9 ug/L
- Aug 8.0 ug/L
- Sep 6.3 ug/L



Current/Historic Analytical Results

July - September 2010



EPA MW-7A

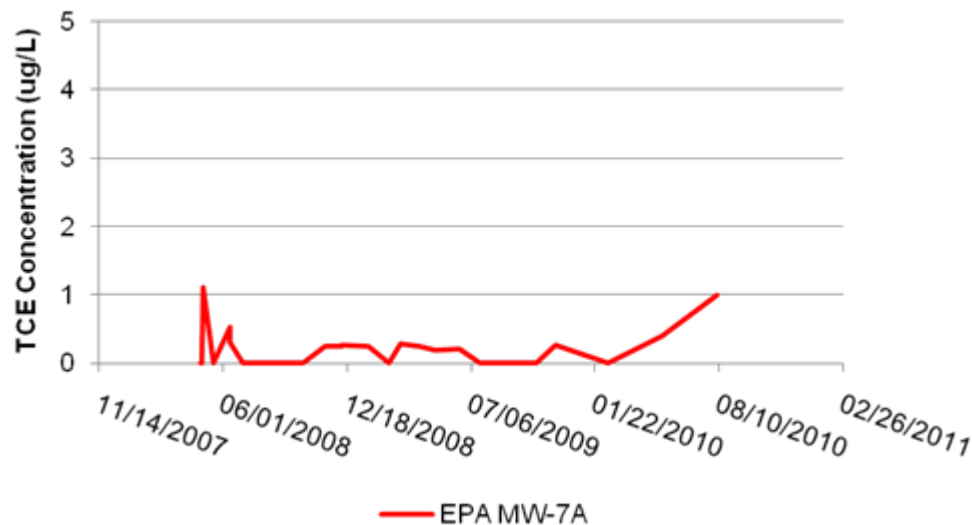
(Subunit A)

■ TCE

- Jul - NS
- Aug 0.39 ug/L
- Sep 1.0 ug/L

■ PCE

- Jul - NS
- Aug 9.2 ug/L
- Sep 9.1 ug/L



Current/Historic Analytical Results July - September 2010



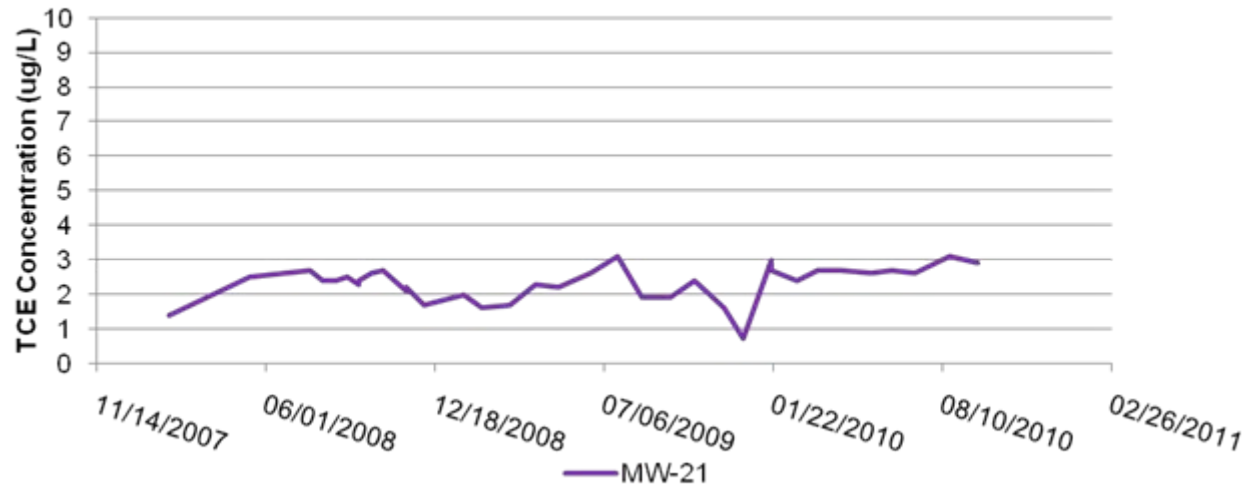
MW-21 (Subunit C)

■ TCE

- Jul - 2.6 ug/L
- Aug 3.1 ug/L
- Sep 2.9 ug/L

■ PCE

- Jul ND
- Aug ND
- Sep ND



Current Analytical Results July – September 2010



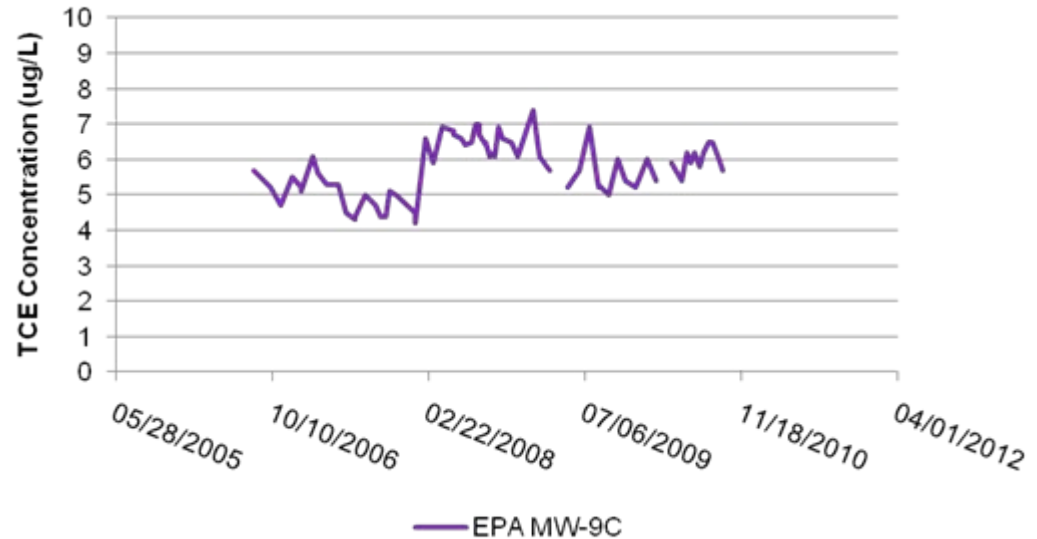
EPA MW-9C (Subunit C)

■ TCE

- Jul – 6.2 ug/L
- Aug – 6.5 ug/L
- Aug – 6.5 ug/L
- Sep – 6.0 ug/L
- Sep – 5.7 ug/L

■ PCE

- Jul -ND
- Aug ND
- Sep ND



Current Analytical Results

July - September 2010



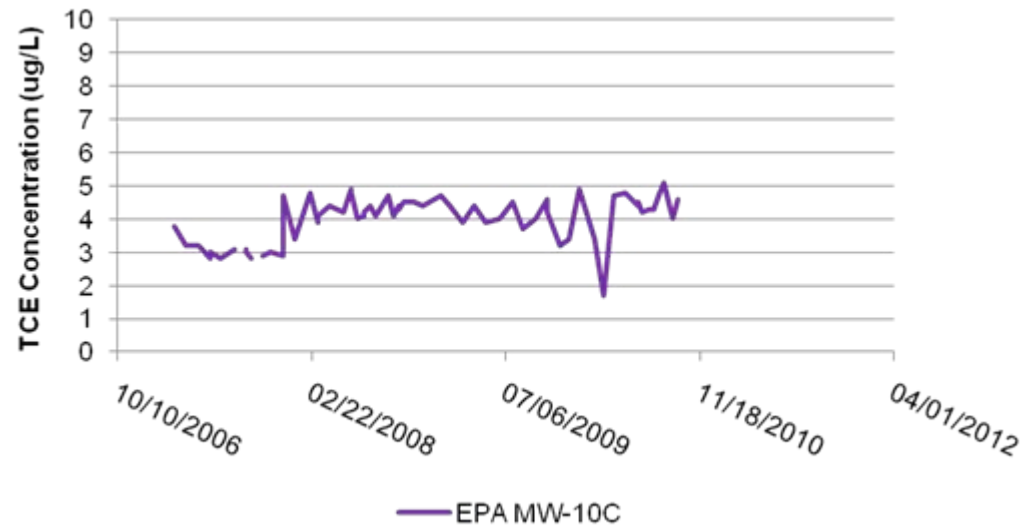
EPA MW-10C (Subunit C)

■ TCE

- Jul - 4.7 ug/L
- Aug - 4.8 ug/L
- Aug - 4.6 ug/L
- Sep - 4.4 ug/L
- Sep - 4.2 ug/L

■ PCE

- Jul - ND
- Aug ND
- Sep ND



Current Analytical Results July - September 2010



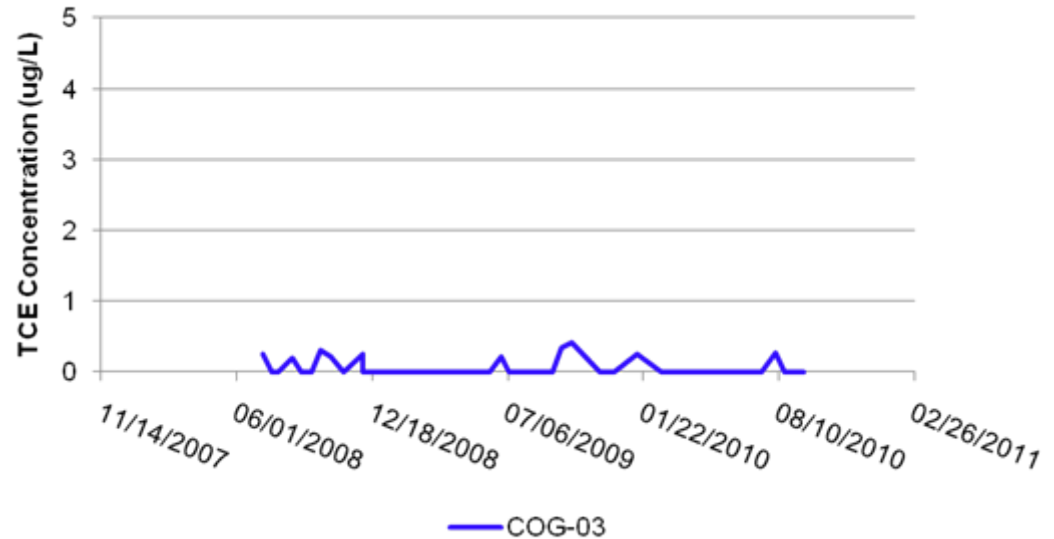
COG-03

■ TCE

- Jul - <0.19 ug/L
- Aug - 0.28J ug/L
- Aug - <0.19 ug/L
- Sep - <0.19 ug/L
- Sep - <0.19 ug/L

■ PCE

- Jul - 0.27J ug/L
- Aug - <0.19 ug/L
- Aug - <0.19 ug/L
- Sep - <0.19 ug/L
- Sep - 0.26J ug/L



Protection of COG-03



- COG-03 Wellhead Treatment Contingency Work Plan Approved by EPA in 2008
- Increased sampling frequency
 - May thru October – 2X per month
 - Nov thru Apr 1X per month
- Evaluation of hydraulic connection between Subunit A and Subunit C
 - Pressure Transducers installed in COG-03 and vicinity monitor wells
 - Conducted Geochemical evaluation of Subunit A wells, Subunit C wells and COG-03.
 - Results show difference in water chemistry between



Protection of COG-03



➤ Increase the Capacity of Main Treatment System

➤ Converted monitoring well MW-29 into a Subunit C extraction well in June 2010.

➤ Installed new low profile airstripper to add an additional 250 gpm treatment capacity, which began full time operation on June 7.



- Installation of new effluent piping to further increase extraction and injection capacity at MTS in December 2010
- Installing larger pumps in existing extraction wells and adjusting pump intake depths to increase mass removal and hydraulic control



Questions?



Phoenix-Goodyear Airport-North (PGA-North) Superfund Site

Stephanie Koehne

AMEC Geomatrix, Inc., Scottsdale, AZ

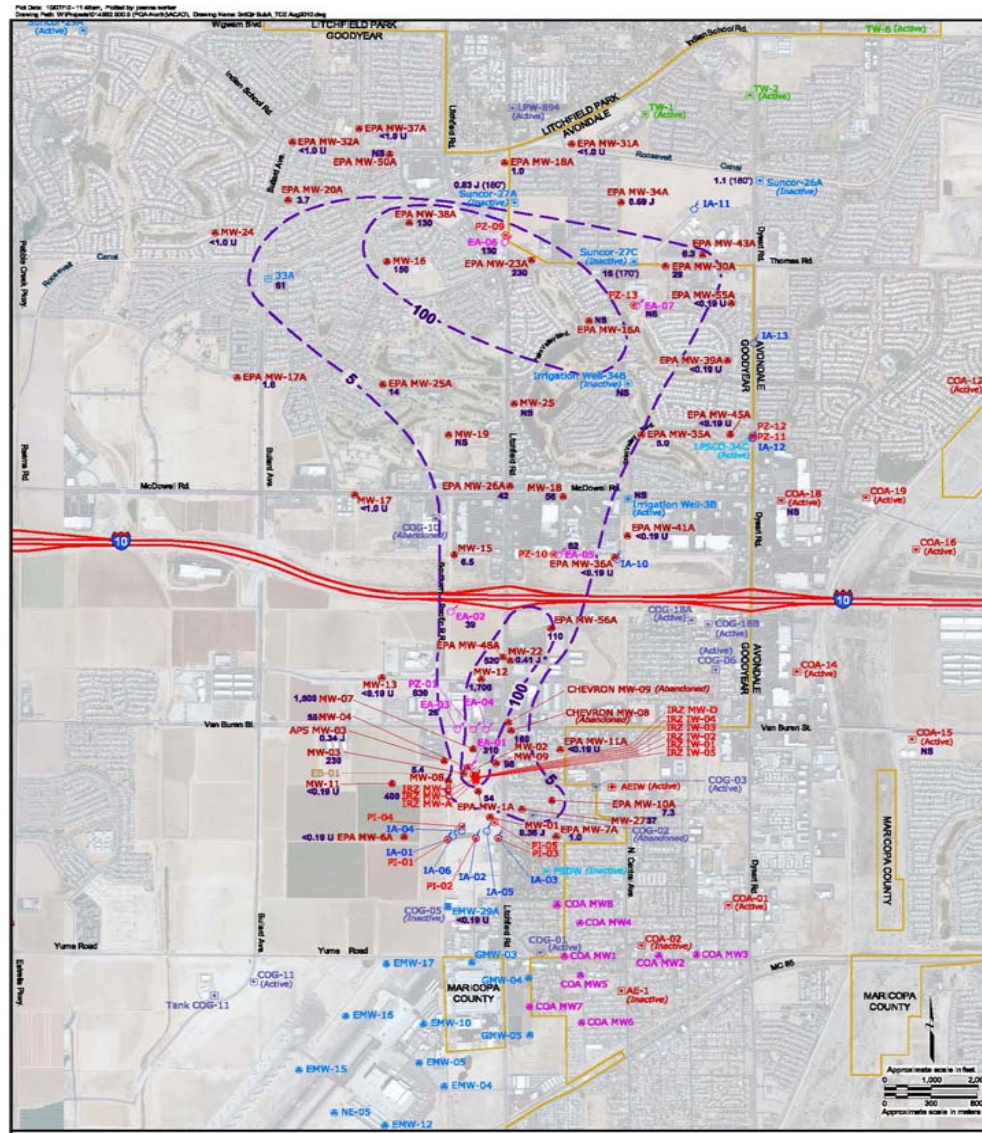


Update for PGA-North

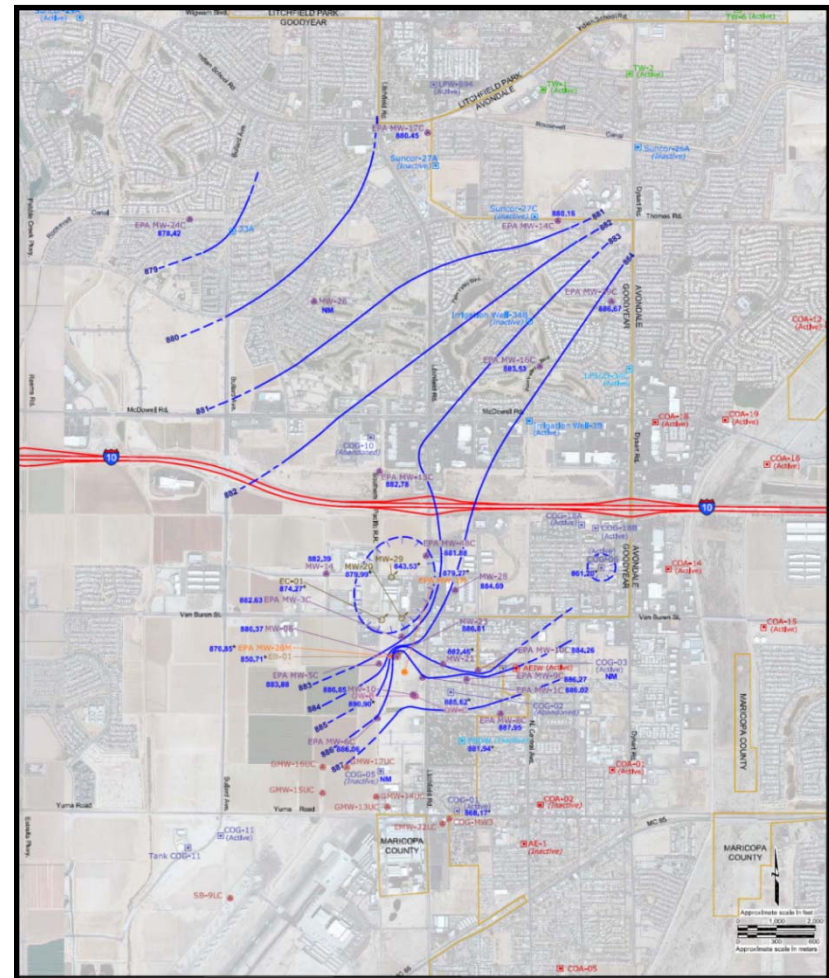
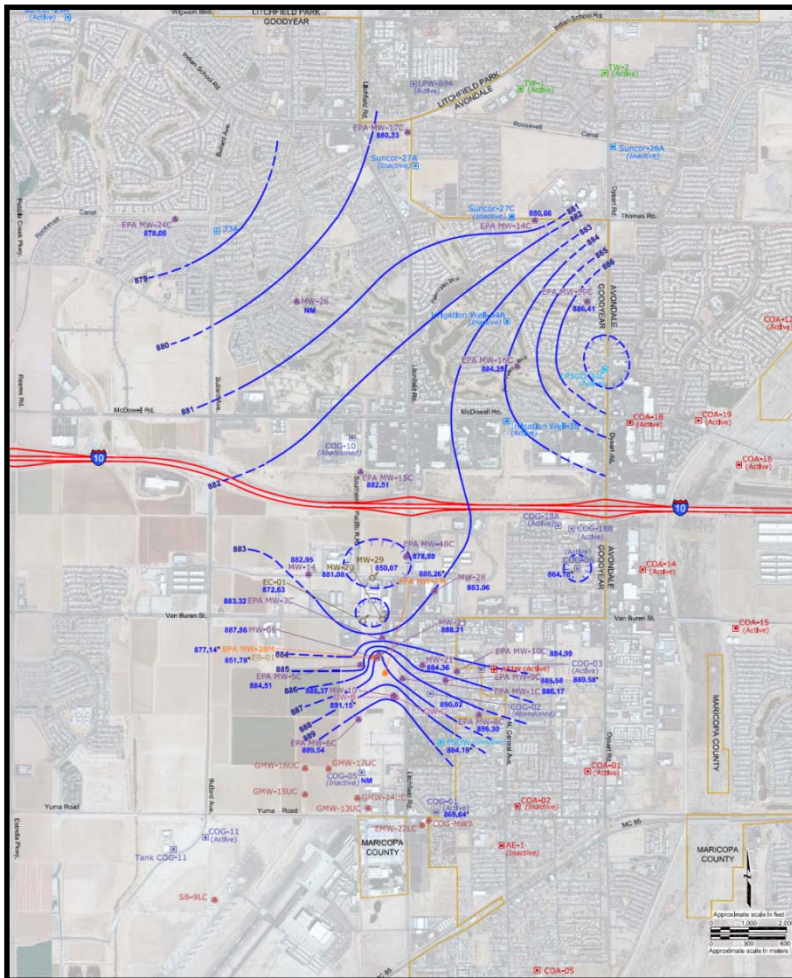


- Impacts to Groundwater
- Northeast Regional Treatment of Groundwater
- On-Site Revegetation
- Proposed Additions to Plume Capture
- Irrigation Well 34B Retrofit
- Accomplishments

Impacts to Groundwater – Subunit A Third Quarter 2010



Subunit C Groundwater Contours August and September 2010

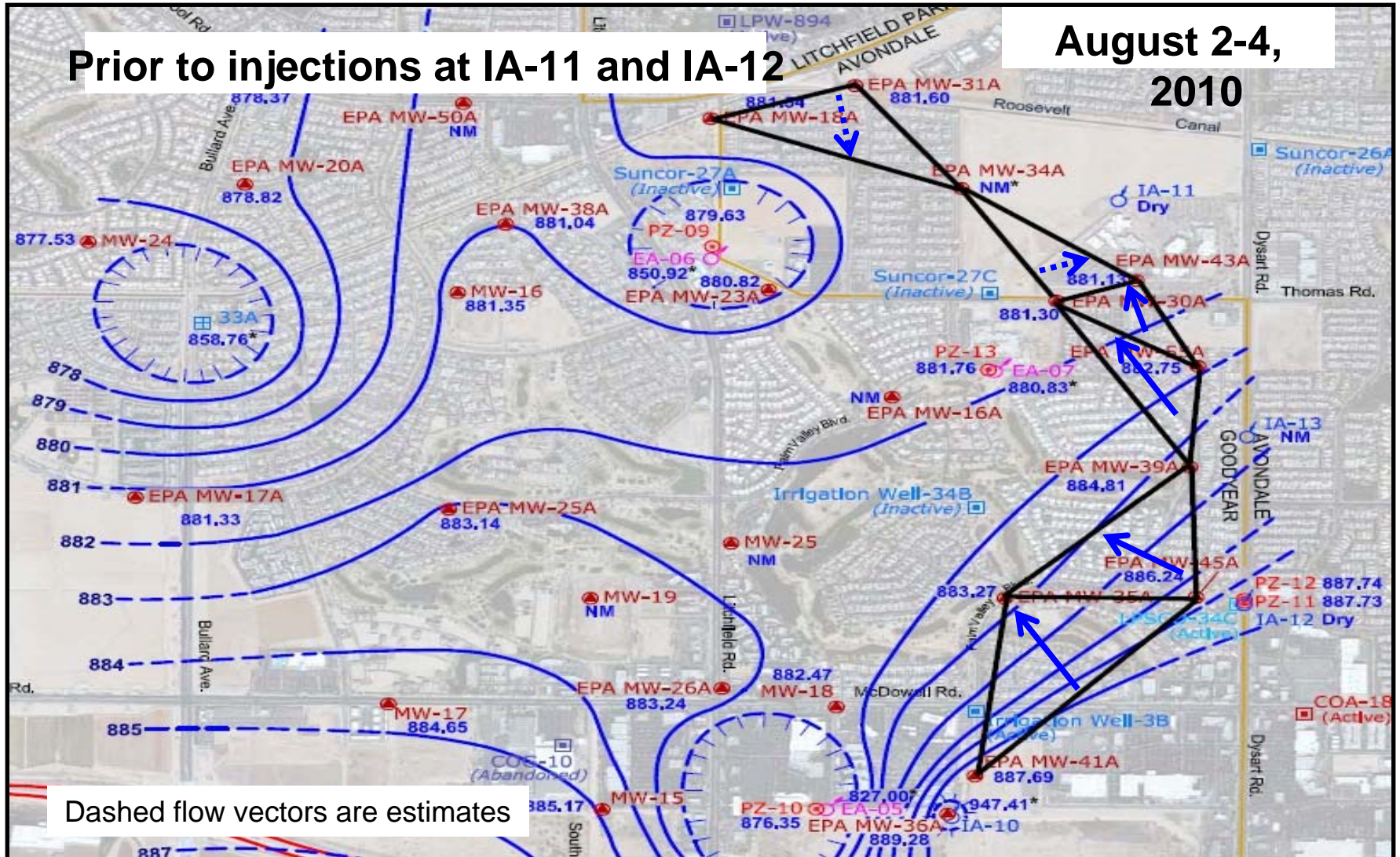


Northeast Area Groundwater Contours



August 2-4,
2010

Prior to injections at IA-11 and IA-12



Dashed flow vectors are estimates

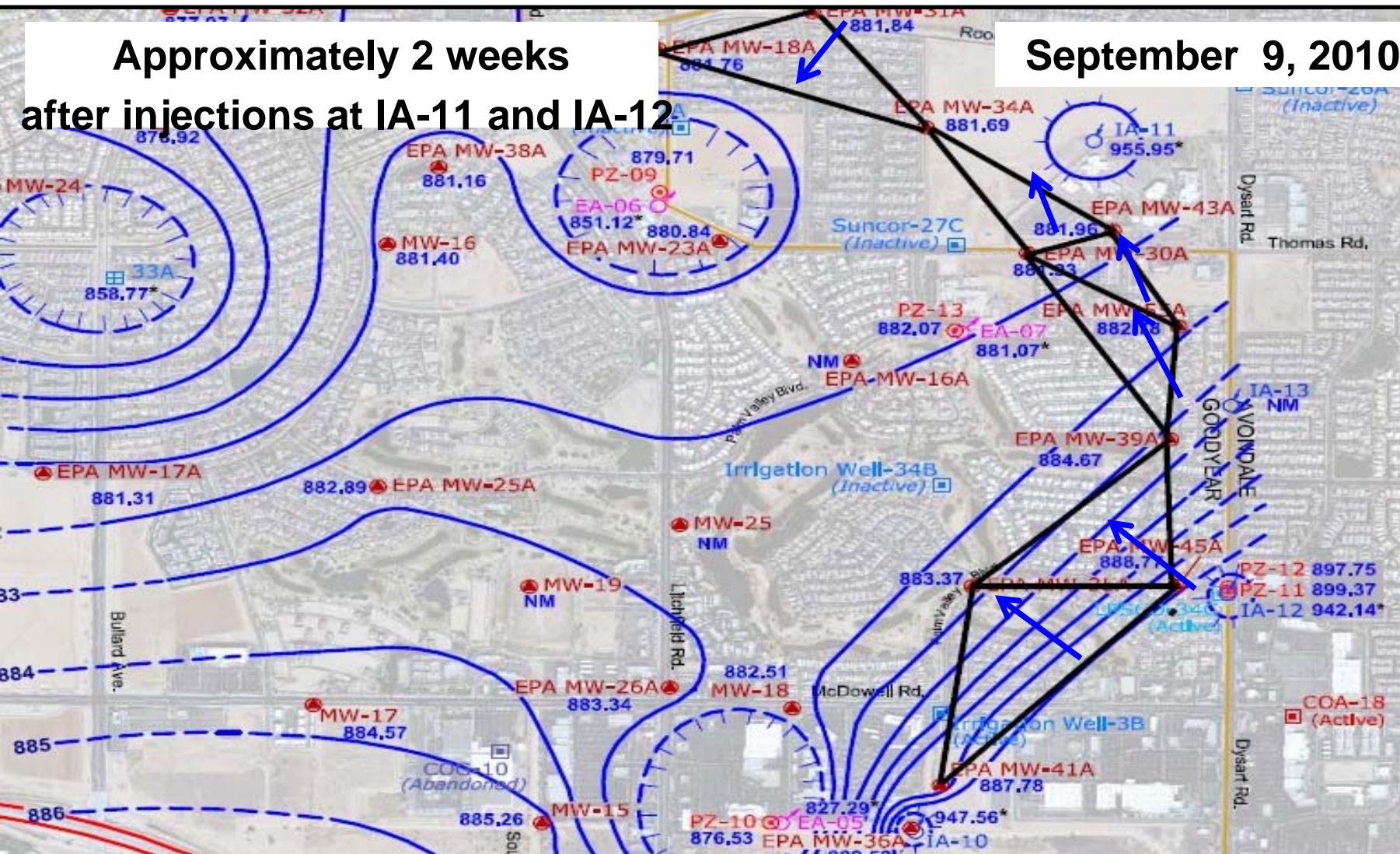
Northeast Area Groundwater Contours



Approximately 2 weeks

September 9, 2010

after injections at IA-11 and IA-12

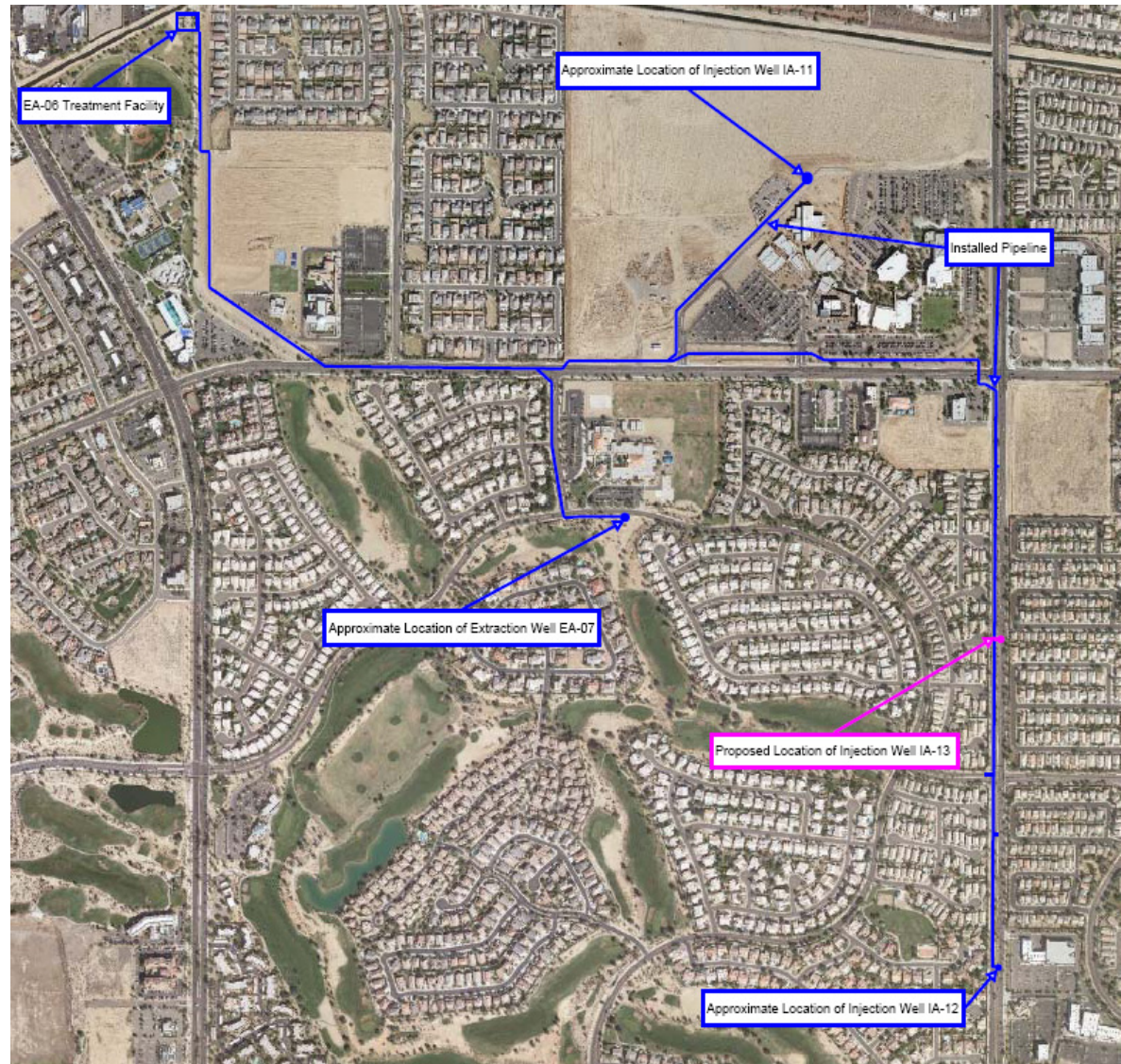


Phased Regional Approach to Northeast Subunit A Plume



Discussion Overview:

- Recent and Remaining Work
- Schedule and Logistics



Phased Regional Approach to Northeast Subunit A Plume



Current NE Groundwater Extraction and Injection

- Two Extraction Wells
 - EA-05 and EA-06 (~1,000 gallons total)
- One Injection Well
 - IA-10 (500 gallons total)

Proposed Future NE Groundwater Extraction and Injection

- Minimum of One New Extraction Well (EA-07)
 - 250+ gallons addition GW extraction
 - Infrastructure for up 1,000 additional gallons
- Min of Three New Injection Wells (IA-11, IA-12 & IA-13)
 - Up to 500 gallons each
 - Infrastructure for 2 additional injection wells



Injection well IA-11

Phased Regional Approach to Northeast Subunit A Plume



Extraction Well EA-07

Phased Regional Approach to Northeast Subunit A Plume



Anticipated Schedule for IA-13

- Week of November 1, 2010
 - Obtain well and vault construction permits.
 - Receive traffic control permits.
 - Potentially mobilize drill rig and set conductor casing.
- Week of November 8th, 2010
 - Drill and install IA-13.
 - Meet with APS to finalize power source.
 - Finalize electrical design and submit permit.



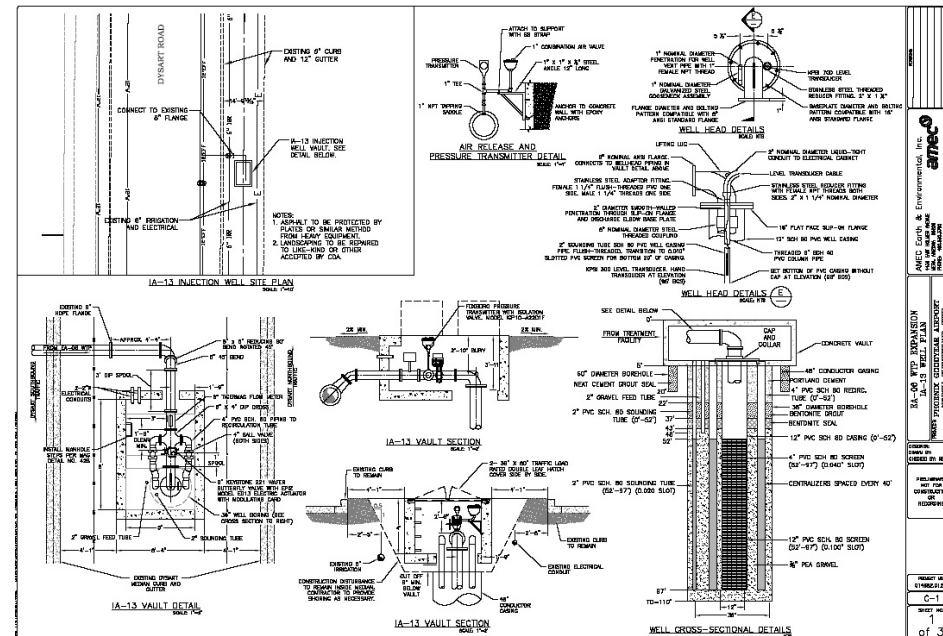
Phased Regional Approach to Northeast Subunit A Plume



Anticipated Schedule for IA-13 (Continued)

- Weeks of November 15th and 22th, 2010
 - Install well vault and system components.
 - Connect IA-13 into existing pipeline stub-out.

- Week of November 29th, 2010
 - Target for IA-13 to be able to receive water.
 - Complete landscaping repairs.



Status of On-Site Interim Revegetation Pilots



Pilot Project Status

- Initial Pilot Plots – Still Operating
- Interim Biofilter/Native Plant Nursery Demonstration
 - November 2010
- Additional Interim Grass Plots
 - Leveling – August 2010
 - Planting – Rye Grass – October 2010
- Litchfield Road Native Plant Buffer
 - October 2010
- COG Green Waste Pilot Area
 - TBD



CITY OF GOODYEAR GREEN WASTE PILOT AREA

PROPERTY BOUNDARY

NATIVE PLANT NURSERY AND BIOFILTER DEMONSTRATION AREA

MTS COMPOUND

50' HYDROSEED LANDSCAPE BUFFER

BERMUDA GRASS

ENTRANCE ROAD

EXISTING REVEGETATION DEMONSTRATION TEST PLOTS

PROPERTY LINE / R.O.W.

Existing Demonstration Area



Native Plant Buffer –Prep Work



Native Plant Buffer - Hydroseeding



Seeding of Additional Plots



Initial Irrigation



Growth in Additional Plots, 10 days after initial irrigation



Additions to Plume Control: EA-08 Options & Timeline

Proposed Additional Extraction System



- Subunit A Extraction Well – EA-08
 - Conceptual Location – North of RID Canal on COG Right of Way Property
- Temporary LPGAC Treatment System
- Treated Groundwater Discharge to RID Canal

Proposed EA-08 Location

PROPOSED EXTRACTION WELL (EA-08) LOCATION

PROPOSED DISCHARGE PIPING LOCATION

IRRIGATION DISTRICT (RID) CANAL

WOODBIDGE AVE.

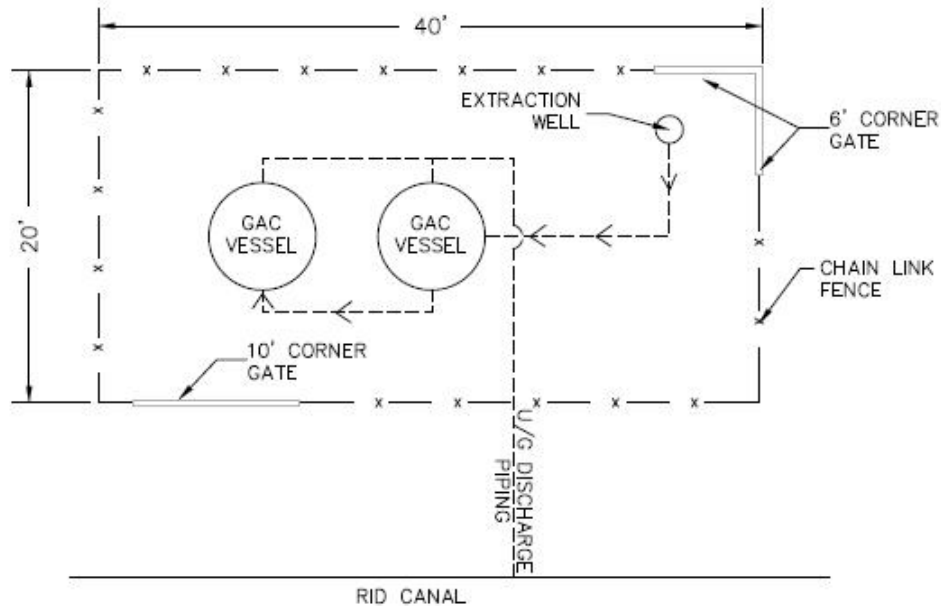
ROAD



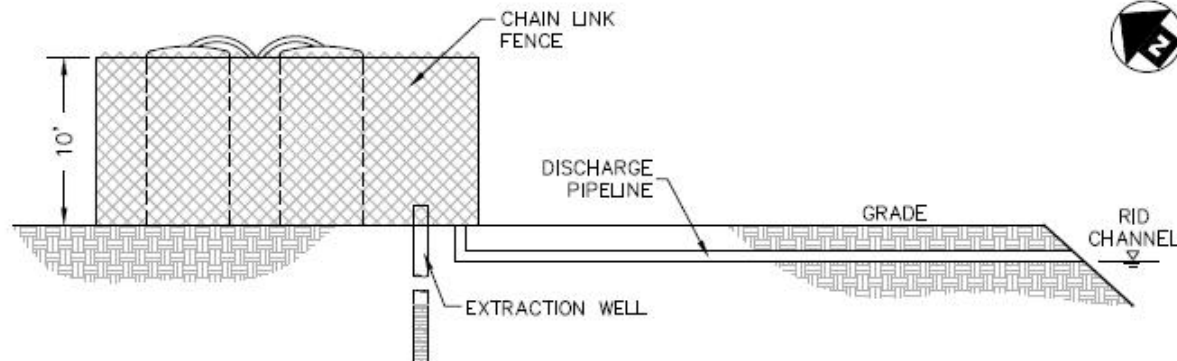
Proposed EA-08 Location with regard to Existing Wells



EA-08 Conceptual Layout

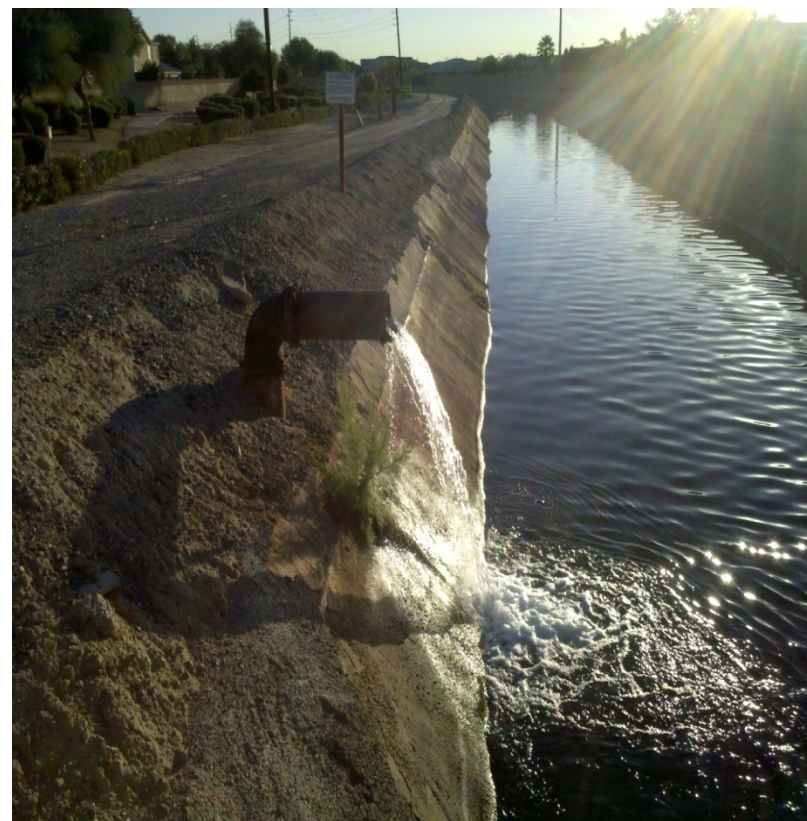


EA-08 EXTRACTION WELL DETAIL-PLAN
SCALE: 1"=10'



EA-08 EXTRACTION WELL DETAIL-SECTION
SCALE: 1"=10'

Existing 33A Discharge



Schedule



- Draft Workplan to be submitted on November 22, 2010.
- USEPA Workplan Approval
- System Design/Engineering - 2 Weeks
- Submittal to COG
- Submittal to RID
- COG Approval - 4 Weeks
- RID Approval - 8 Weeks
- Procure Equipment - 12 Weeks
- Well Installation - 4 Weeks (from COG Approval)
- Piping and System Installation - 8 Weeks (from COG Approval)
- Complete Electrical Service - 12 - 16 Weeks from COG Approval
- Start-up/Shakedown - 14 - 18 Weeks from COG Approval

Irrigation Well 34B

Irrigation Well 34B

- Irrigation well constructed in 1951, about 1,000 feet deep originally
- Well video showed scaling and bio-fouling of the casing and perforations
- Inside well casing brushed with nylon and wire brushes for 5 days total to remove scaling and open perforations



Irrigation Well 34B

- Brushing was not enough, so the well was cleaned out using shot perforating
- Explosive charges were encased in aluminum and affixed to a cylindrical wire cage. The wire cage was lowered into the well and detonated remotely.
- After the well was cleaned out, It was back-filled with neat cement to a depth of 162 feet below ground surface, sealing off Subunit C.



2010 Accomplishments



2010 Accomplishments – Groundwater Treatment



- 2010 Groundwater Volume Treated
 - 801,500,000 gallons
- 2010 Mass Removal
 - 893 Pounds TCE
- 2010 Treatment Aggregate System Uptime
 - 25,556 Hours Operational
 - 26,352 Hours Available
 - 96.9 % Uptime

2010 Accomplishment – Groundwater Treatment



How much was
893 pounds of
TCE when
released ?



Almost 72
Gallons

Accomplishments of the NE Pipeline Project



- Over 13,000 feet of trenching
- Over 30,000 feet of 12"/8" HDPE pipe total
- More than 4,000 man hours of work



2010, to date:

- ❖ 13 monitor wells
- ❖ 3 piezometer
- ❖ 1 extraction well
- ❖ 2 injection wells



Questions?

