

OU #12-021

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

**Thursday, November 3, 2011 at 6:00 p.m. to 8:30 p.m.
Goodyear City Hall, Room 117
190 N. Litchfield Rd., Goodyear, AZ 85338**

FINAL MINUTES

CAG Members in Attendance:

Diane Krone-Co-chair
Brenda Holland-Co-chair
Lisa Amos
Jeff Raible
David Ellis
Frank Scott

ADEQ Staff in Attendance:

Jennifer Thies, Remedial Projects Unit Manager
Harry Hendler, Federal Projects Unit Manager
Travis Barnum, PGA-North and South Project Manager
Nicole Coronado, PGA-North and South Project Manager (support)
Delfina Olivarez, Western Avenue Project Manager
Joellen Meitl, Hydrologist
Felicia Calderon, Community Involvement Coordinator (CIC)

EPA Staff in Attendance:

Claire Trombadore, Chief, Arizona & Navajo Sites Section, Superfund Division
Catherine Brown, PGA-North and South Remedial Project Manager
Glenn Bruck, Hydrologist
Viola Cooper, CIC

Others in Attendance:

Dr. Anthony Pantaleoni, Vice-President, Environment, Health & Safety, Crane Co.; Nadine Johnson, Environmental Community Outreach (ECO) Association; Randy McElroy, ECO Association; Julie Riemenschneider, City of Phoenix; Nora Fascenelli, City of Goodyear; Sandra Reagan; Kimberly Calderon, student; Karl Havlicek; Jerry Youngken; Russ Galowski; David Perez, student; Phil McNeely, City of Phoenix; Jerry Postema, City of Goodyear; Sandra Rode, City of Goodyear; Jeff Littell, Brown and Caldwell; Dennis Maslonkowski; Jim Creedon, Crane Co.; Tom Suriano, Clear Creek Associates; Nancy Nesky, ITSI; Keith Woodburn, TRC; Mike Hansen, Matrix New World Engineering; Jeff Sussman, Goodyear Tire & Rubber Co.; and Harry Brenton, Matrix New World Engineering

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

Ms. Krone, CAG Co-chair, facilitated the meeting.

2. Acceptance and/or changes to minutes of August 3, 2011-Diane Krone, CAG Co-chair

Ms. Krone stressed the importance of the accuracy of the minutes for historic research that may be done by the new Technical Advisor for the Site and herself. Ms. Krone added that she observed many errors and omissions within the minutes. Ms. Krone acknowledged that the minutes are just a summary, but added that the summary should be accurate. Ms. Krone recommended that the minutes not be accepted and requested that Ms. Calderon rewrite the minutes after a second review of the audio tape. Mr. Ellis commented that he felt a similar sentiment to Ms. Krone's impression of the accuracy of the minutes. Ms. Krone requested a motion to reject the minutes as written, have them rewritten and reviewed and voted on at the next CAG meeting on February 2, 2012. Mr. Raible moved to accept the motion and Mr. Ellis seconded the motion. The motion was accepted unanimously by the CAG. Ms. Krone pointed out an example of an error within the current drafted minutes such as; during the Crane Co. presentation regarding reinjection of contaminated water, into the City of Goodyear (COG) 2, a drinking water well. Ms. Holland suggested that the CAG's assistance with aid of their meeting notes from that night be sought after in the revision of the minutes.

3. CAG business to include: CAG membership and discussion of community involvement activities- Diane Krone, Co-chair

Two CAG applications were submitted to the CAG for consideration for membership, first Mr. Earl Smith who's application was submitted to the CAG the night before the CAG meeting and second, Mr. Karl Havlicek, who submitted his application right before the CAG meeting. Ms. Krone requested a motion to delay voting of the two applicants, until February 2, due to the lack of review time of their applications. Ms. Holland made a motion and Mr. Ellis seconded the CAG voted unanimously to delay the voting of the applicants. Ms. Krone requested a motion to hear a statement from both CAG applicants that evening, stemming from earlier comments from Ms. Amos and Mr. Ellis, who requested to hear from the applicants. Mr. Ellis made a motion and Mr. Raible seconded the CAG unanimously voted to hear from the two applicants.

Ms. Krone called on Mr. Smith to introduce himself to the CAG and to state his interest to serve on the CAG. Ms. Holland inquired of his experience that would relate to the Site. Mr. Smith recapped his experience with the contaminant Trichloroethylene (TCE). Mr. Smith stated that he would not be able to attend August CAG meetings, if voted on. Ms. Holland suggested that Mr. Smith could be an asset to the CAG based on his chemical engineer background and perhaps could serve in a consultant capacity to the CAG, if not as a member. Mr. Raible stated that he felt CAG membership was critical in providing an easier means to communicate about the site. Mr. Raible also added that he didn't have an issue with voting on a CAG member who could not be in attendance to one of the four yearly meetings.

Ms. Calderon introduced Mr. Havlicek as the second CAG applicant. Mr. Havlicek summarized his occupational and educational history which included being a retired Army aviator. Mr. Havlicek stated his concerns of the movement of the groundwater contamination in the northwest and the movement of the plume towards drinking water wells.

Ms. Calderon added that CAG member Thomas Jones, officially resigned from the CAG as an active member, but was willing to serve the CAG in a substitute capacity, to ensure CAG

quorums were met. Ms. Calderon also read Ms. Holland's CAG resignation letter to the CAG. Ms. Calderon presented Ms. Holland with a certificate of appreciation for her participation on the CAG on behalf of ADEQ.

Ms. Krone announced that Mr. Scott was now the new Co-chair for the PGA/WA CAG, as was determined during the last Co-chair vote when Ms. Holland announced that she would need a Co-chair replacement at the end of 2011.

4. Discussion and vote on "site update" reports from AMEC and ADEQ-Diane Krone, Co-chair

Ms. Krone requested discussion from the CAG on their input regarding the continuance of receiving Site updates from both AMEC and ADEQ. Ms. Krone requested a motion to maintain the current Site updates from AMEC and ADEQ. Ms. Amos made a motion and Ms. Holland seconded the motion was accepted unanimously by the Group.

5. Technical Assistance Grant (TAG) Report- Nadine Johnson, Environmental Community Outreach Association (ECO)

Ms. Johnson updated the CAG on TAG activities since August that included the EPA open house hosted on November 2, and the Goodyear G.A.I.N. event in October. Ms. Johnson also indicated that the Technical Advisor (TA), Randy McElroy has been working on researching the historic and present day activities involving the Sites. Ms. Johnson stated that the outreach PowerPoint presentation was still in progress and that Mr. McElroy has been able to make this presentation more comprehensive based on his Site research. Ms. Johnson briefly presented a draft form of the outreach PowerPoint presentation and added that requested data from ADEQ and EPA is still pending and will eventually be integrated into this presentation. Ms. Johnson indicated that the TA was also preparing a comprehensive Site presentation that was approximately 300 slides, which could be reduced and tailored, based on the audience receiving the presentation. Ms. Johnson spoke on the outreach brochures that the TAG was tasked with. Ms. Johnson presented to the CAG a draft flyer of the PGA-North site. Ms. Johnson stated that the final stages of these flyers would include a review by the CAG, ADEQ, and EPA. Ms. Johnson added that the TA went on a Site tour that day with Crane Co. and that a PGA-South tour was planned in February 2012. Ms. Johnson also spoke on future TAG activities which included presentations to targeted audiences such as Homeowner Associations, and quarterly newsletters stemming from information received from CAG meetings and updates from Crane Co. and Goodyear.

Mr. Riabie questioned if EPA tracked the number of public attendees at the EPA Open House, held on November 3. Ms. Cooper indicated that over a hundred people attended this particular open house. Ms. Cooper added that the open house held the previous year produced about the same amount of attendees. Ms. Holland mentioned her appreciation for Mr. Raible's recent news article promoting the open house and awareness to the Site.

The CAG skipped the scheduled 5-minute break, due to time constraints. Ms. Krone called for introductions of all meeting attendees.

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

Mr. Sussman presented updates on plume locations, cleanup progression, current and upcoming activities for PGA-South.

See slide presentation below

Mr. Raible questioned why there was difficulty sampling the eight monitoring wells. Mr. Sussman attributed this difficulty to low water levels in the aquifer. Ms. Krone questioned if extracted water was always reinjected and Mr. Sussman responded in the positive. Mr. Raible inquired how far down the new five wells would be drilled. Mr. Sussman stated that they were going to drill down very close to the subunit B aquifer top. Mr. Sussman pointed out different well sources in subunit C for Ms. Krone that included the Goodyear Aircraft Corporation (GAC) 2 well. Mr. Raible summarized his understanding that contamination flowed from subunit A through two old conduit wells into subunit C, and Mr. Sussman agreed. Mr. Sussman added that there was a third conduit well GAC-04 that contributed to the contamination seen in the southern subunit C area. Mr. Sussman added that these three wells have since been rehabilitated. Ms. Krone inquired as to who owns GAC-04 and Mr. Sussman replied that JRC Goodyear is the entity who has ownership of this particular well. Mr. Sussman described for Mr. Ellis the rehabilitation process performed on the three wells mentioned earlier. Ms. Krone questioned what purpose the owners of GAC-04 use the well for. Mr. Sussman replied that the owners haven't used the water for anything in the last four years, but that Goodyear TRC uses it as a recovery well. Mr. Ellis inquired as to how soon a decision will be made on what to do with GAC-04. Mr. Sussman replied that they want to first receive the Isotope data results and then make a determination on the next step for the well, which should be discussed sometime around early February 2012.

7. Update of PGA-North activities – Harry Brenton, Matrix New World Engineering

Mr. Hansen with Matrix New World Engineering, updated the CAG regarding the leak that occurred upon the start up of a Subunit C extraction well north of Van Buren, monitoring well (MW) 29, following piping modification. Mr. Hansen stated that this well was shut down within 24 hours.

Ms. Holland inquired if the City of Goodyear had to take any special actions after the discovery of the leak. Mr. Postema replied that their involvement after their discovery of the leak consisted of active communication with Crane Co., EPA, and monitoring of the post leak activity, by Crane Co. Ms. Amos question if the leak occurred on Arizona Department of Transportation (ADOT) property. Mr. Hansen responded that the leak did occur on ADOT's property which is the right of way and stated that they were notified of the leak the morning after it was identified. Mr. Ellis question the source of the other volatile organic compounds (VOC) that were detected by Crane Co.'s air samples performed at the leak site. Mr. Hansen replied that based on existing general information, he felt that the passing vehicle traffic from the I-10 Freeway under the overpass, would produce such VOCs that were detected, such as Ethylbenzene that are related to fuels. Mr. Hansen reviewed a map that detailed the location where the leak occurred. Dr. Pantaleoni stated that the leak came from an old PVC piping system used to draw water from other areas. Mr. Hansen added that in response to the leak; a pipe work plan will be submitted to EPA sometime in November 2011, to replace the existing pipe that leaked and put in piping that they think they might need in the future to complete the upgrade to this system and then maximize the flow for the recovery wells. Mr. Hansen added that Mr. Brenton, Ms. Brown and himself met with the senior management with the Cancer Treatment Center of America, who were alerted of the leak, briefed on the leak status and updated on the Site.

Mr. Brenton began a brief overview of the PGA-North activities.

See slide presentation below

Ms. Krone questioned the ownership of the discharged water taken out of the aquifer by the extraction systems. Mr. Hansen replied that Arizona code states that Crane Co. is allowed to

pump and treat the water, but the ultimate disposition of the water is still pertinent to the landowners. Dr. Pantaleoni added that Crane Co.'s future plan for the treated water from the northwest region is to develop a system similar to the system in the northeast with reinjection or splitting the water with the golf course, at certain times. Dr. Pantaleoni added that the plan is to utilize all this water for environmental purposes in the future by means of reinjection or irrigation. Ms. Holland inquired if Liberty Water has been involved with the water discussions for PGA-North. Mr. Brenton replied that they have not been involved with any water rights or usage issues. Mr. Hansen added that Liberty Water at meetings has stated their desire for all the water to be recharged into the aquifer. Ms. Holland requested an update on the proposed wells into the PebbleCreek neighborhood. Mr. Brenton advised that there is still a legal agreement with PebbleCreek that still needs to be negotiated. Mr. Raible questioned the temporary status of the EA-08 treatment system and inquired as to its long term plan. Mr. Brenton stated that a temporary carbon system was installed to get this system up and running as quick as possible. Mr. Brenton added that ultimately this water will be piped to the 33A treatment system with a long term plan to reinject the water from EA-08 and 33A to injection wells somewhere in the northwest area. Dr. Pantaleoni clarified that the temporary status is related to the treatment system and not the extraction. Mr. Ellis questioned timeframe for the development of the northwest similar to the northeast area would occur. In response Mr. Hansen stated that an estimated timeline after data collection, modeling, and the submittal of proposed plans to EPA, City permitting and construction it would be about two years. Dr. Pantaleoni clarified that there is no threat in this area and that long term plans are to reinject and to make sure the plume doesn't go any further.

Mr. Ellis wanted Mr. Brenton to clarify the statement that containment has been reached in the northeast area of the plume. Mr. Brenton replied in the positive and added that the three injection wells installed in the northeast area are in fact working and have contracted the plume towards the northwest.

Ms. Krone inquired as to the northeastern groundwater directional change in subunit C. Mr. Brenton replied that groundwater flow does change over time, which can be attributed to the pumping of production wells and mentioned a local Roosevelt Irrigation District (RID) well that pumps a lot of water. Mr. Brenton also attributed summertime water usage as a contributing factor to influence the water flow direction. Ms. Krone noted the new easterly directional arrow in Mr. Brenton's presentation located in subunit A. Mr. Brenton clarified that this water was reinjected treated groundwater similar to the water in the northeast area of the plume.

Ms. Holland inquired regarding the issues which caused the delay with the installation of the monitoring well in the PebbleCreek area. Mr. Brenton responded that specific contractual language and some insurance issues still needed to be resolved, before they could install the monitoring well. Mr. Hansen added that once contractual issues are resolved that they will install the monitoring well based on a date range given by PebbleCreek and their community desires. Dr. Pantaleoni clarified that just because this monitoring well is going to be installed in this specific area doesn't mean there is a contamination issue at this location; on the other hand this well is being installed to make sure there is no contamination issue in this area.

Mr. Raible inquired if the MW 9C, in subunit C that has high TCE levels, around 5 parts per billion (ppb.) was attributed to the abandoned COG 2 conduit well. Mr. Brenton responded in the positive and that was why COG 2 was abandoned. Mr. Brenton discussed with Mr. Raible the other subunit C extraction wells north of Van Buren that help shift water flow directions. Mr. Brenton mentioned a contingency plan that was submitted upon EPA approval to the City of

Goodyear regarding the detection of TCE in COG 3. Mr. Henson described two longer term projects for this area which first included more subunit A extraction on the Unidynamics facility, and second the increase of extraction from subunit C north of Van Buren, where the elevated concentrations were in hopes of moving the flow of the contamination towards the north. Mr. Hansen added that expectations are that the 5 ppb. around the 10 C well will dissipate under natural conditions.

Mr. Brenton confirmed the significant draw of water from the RID well located at Dysart and Van Buren for Ms. Krone.

Ms. Krone requested Ms. Brown to provide an update on behalf of EPA at this point of the agenda.

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

Ms. Brown addressed the leak that occurred at PGA-North and issued congratulations to the City of Goodyear staff that quickly got in touch with the treatment system operators and the operators who shut off the well, which kept the volume of the leak low. Ms. Brown also stated her concurrence with Mr. Hansen’s estimate of the volume of contaminated water leaked. Ms. Brown addressed the better communication during this leak as compared to previous incidents at the Site where communications were not as effective. Ms. Brown shared her desire to develop a standard operating procedure for communication and notification, so in addition for communicating with the cities, CAG, State, and staff involved with the cleanup or oversight, but also including communication with neighbors and adjacent property owners. Ms. Brown mentioned that she spoke with the Director for the Cancer Treatment Center, to update them on Site activities and incorporate them into the communications strategy for the Site. Ms. Brown discussed the PebbleCreek well and stated that she was going to reach out to the HOA to get the well installed sooner than July or August of 2012. Ms. Brown added that this particular well was not a time consuming well (not a subunit C well) and that they would figure out ways to minimize the impact to the community. Ms. Brown reiterated the commitment for reinjection to the northwest similar to operations the northeast. Ms. Brown stressed that for the same reasons mentioned by Dr. Pantaleoni and his team in their presentation that aquifer restoration is an objective at PGA-North. Ms. Brown commented regarding containment in the northeast area of the plume and stated that she would still like to see the TCE concentrations decreasing and flow direction being inward towards the plume and the maintenance of that trend over time, before she would state containment in the northeast is achieved. Ms. Brown addressed COG 3, and mentioned that what Mr. Brenton showed were snapshots in time and that the groundwater direction does change and the understanding of this is growing and with more wells in key areas the better the understanding will be of groundwater flow direction. Lastly Ms. Brown thanked Ms. Holland for her service on the CAG.

Mr. Raible commented that he appreciated Ms. Brown’s clarification on the northeast boundary containment. Mr. Ellis inquired how many seasons was Ms. Brown looking for to feel confident that containment has been reached in the northeast area. Ms. Brown stated that there was no specific amount of time or data that she wanted to see, but it is very important to make it through a pumping season. Ms. Brown added that what is most important is to see the TCE concentrations coming down in that whole area. Ms. Brown stated that a full year of results from all four seasons would be needed before she was convince there has been a difference from past monitoring data, and added that this time equates to about two years total.

Mr. Hansen and Ms. Brown discussed modeling done at the Site to predict pumping projections by the cities with Mr. Ellis. Mr. Raible confirmed with Ms. Brown that northeast injection wells 11,12,13, are being used and that injection wells 14 and 15 not being used, because the three operating wells are maintaining a sufficient barrier for the plume. Ms. Brown added that they would continue to monitor these injection wells. Ms. Brown replied to Ms. Krone, regarding containment in the northwest that possible reinjection in this area is in the works and added that there are no public supply wells nearby as seen in the northeast part of the plume.

Ms. Krone inquired about a plume extension east of Litchfield Road and south of I-10. Mr. Hansen attributed this new data point to a newly installed monitoring well that is now detecting TCE; such as 56A installed in this area within the past year. Ms. Krone replied that it is still not good news to hear we didn't know we had a problem (contamination) until we installed a monitoring well.

9. ADEQ update on Western Avenue WQARF Site-Delfina Olivarez, Project Manager

Ms. Olivarez introduced herself as the new Project Manager for the site, and initiated her presentation with an update on site activities.

See slide presentation below

In response to Ms. Krone's inquiry to a responsible party search, Ms. Thies explained the Site is in the Feasibility Study (FS) phase of the WQARF process. Ms. Thies added that in the Proposed Remedial Action Plan (PRAP) stage, which will come after the FS that a potential responsible party (PRP) report will be released. Ms. Thies clarified for Ms. Krone that the Site was not yet at the PRAP stage. Ms. Krone inquired if the State was planning a contingency plan for the COG 1 well, since no responsible party has been determined, similar to what Crane Co. has for the COG 3 well. Ms. Thies replied that such a plan may be determined as necessary. Ms. Thies estimated the completion of the FS around the end of June 2012. Ms. Krone expressed her chief concern was the financial impact, as a water user, resulting from a future well closure. Ms. Krone added that somebody has to pay for the closed well, and if there is no State contingency plan, who would pay for this closed well, especially with the State's lack of resources. Ms. Thies added that there was no intention to shut down the COG 1 well. Ms. Thies further stated that the State of Arizona is not the responsible party and they have already met with the City of Goodyear and if the City wanted to initiate an Interim Remedial Action Plan they can meet with ADEQ's Director and Division Directors to put in such a plan. Ms. Olivarez added that ADEQ is addressing the WQARF site because there has not been a PRP found yet and if there are any issues at the Site they will be addressed accordingly. Ms. Amos inquired about the completion and availability of the Remedial Investigation report. Ms. Thies replied that it was completed in June 2010 and was available at the ADEQ main office in Phoenix or through the Site repository located at the Sam Garcia Public Library in Goodyear. Ms. Thies reviewed for Ms. Amos the PRAP process at which time the PRP report will be released. Ms. Thies added that if after the PRP report is released and there is no responsible party listed then the Site would be listed as an orphaned shared site. Mr. Raible wanted to confirm that the Tetrachloroethylene (PCE) concentrations listed in Ms. Olivarez's report were the highest levels detected, because sampling is done at multiple elevations. Ms. Olivarez responded in the positive and clarified that the deeper sampling is done within the monitoring wells the less PCE is being found.

10. ADEQ report on PGA-North and South activities-Travis Barnum, ADEQ Project Manager

Ms. Coronado introduced Mr. Barnum as the new Project Manger for the Sites and added that she was still acting in a supportive role for the Sites. Mr. Barnum stated that although we made great progress in the northeast we still do not have containment.

11. Call to the Public

Ms. Regan inquired if the local restaurants near the leak were informed of the situation. Mr. Hansen responded that only EPA and ADEQ were notified, under the Consent Decree requirements. Ms. Brown reiterated the legal requirements of notification, but acknowledged the future broader notification requirements that need to be in place. Ms. Regan inquired if soil samples were taken at the leak site. Mr. Hansen responded that soils tests were done and all samples came back non detect for TCE.

Ms. Amos further questioned the site of the leak and Mr. Hansen advised that he would look into the actual affected location and would follow up with Ms. Amos.

Ms. Thies clarified the process for Meeting Minutes and reiterated that they are a summary of events and stated that if audio is not available, as in the case of the August 4, 2011 CAG meeting that ADEQ will always first consult the speaker to obtain such documentation for Meeting Minutes. Ms. Thies reminded that CAG that although the Meeting Minutes from the Aug. 4, CAG will be resubmitted to the CAG for review, the portion presented to the CAG of the Draft Minutes under Mr. Chiaradia's presentation summary would not be rewritten. Ms. Thies ended with advising the CAG that if there were any questions regarding a CAG presentation that audio recordings are available, upon request for every meeting and to please also choose to contact the project managers directly for inquires.

12. Future meeting and agenda discussion

The next CAG meeting was scheduled for Thursday, February 2, 2011 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, ECO/TAG update, and CAG activities to include a CAG membership voting.

Ms. Krone added that for future CAG meetings she would like to see both EPA and ADEQ staff present at the table with the CAG members. The CAG requested a final vote and discussion for the previously suggested Site "technical breakdown" meeting by the Agencies.

13. Adjournment

Ms. Krone adjourned the meeting.

Phoenix Goodyear Airport-South Project Site Status Report

Community Advisory Group Meeting
November 3, 2011

Jeffery Sussman
Remediation Manager
The Goodyear Tire & Rubber Company

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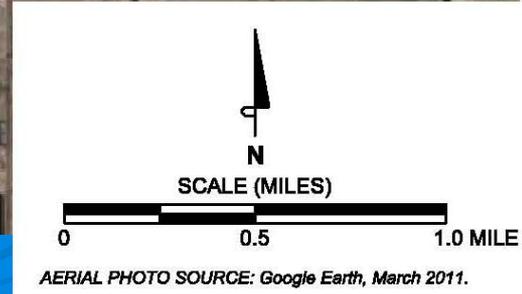
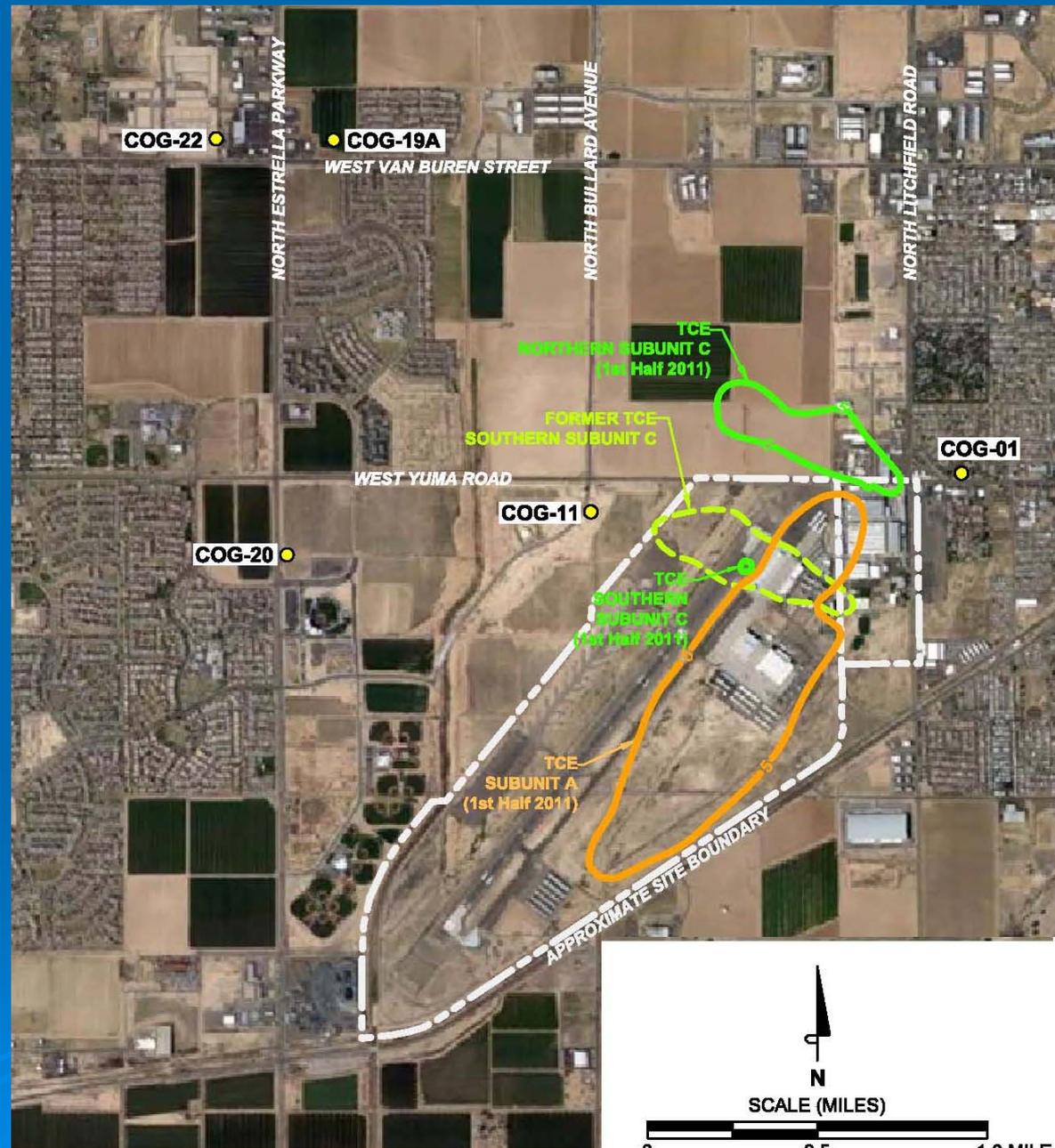
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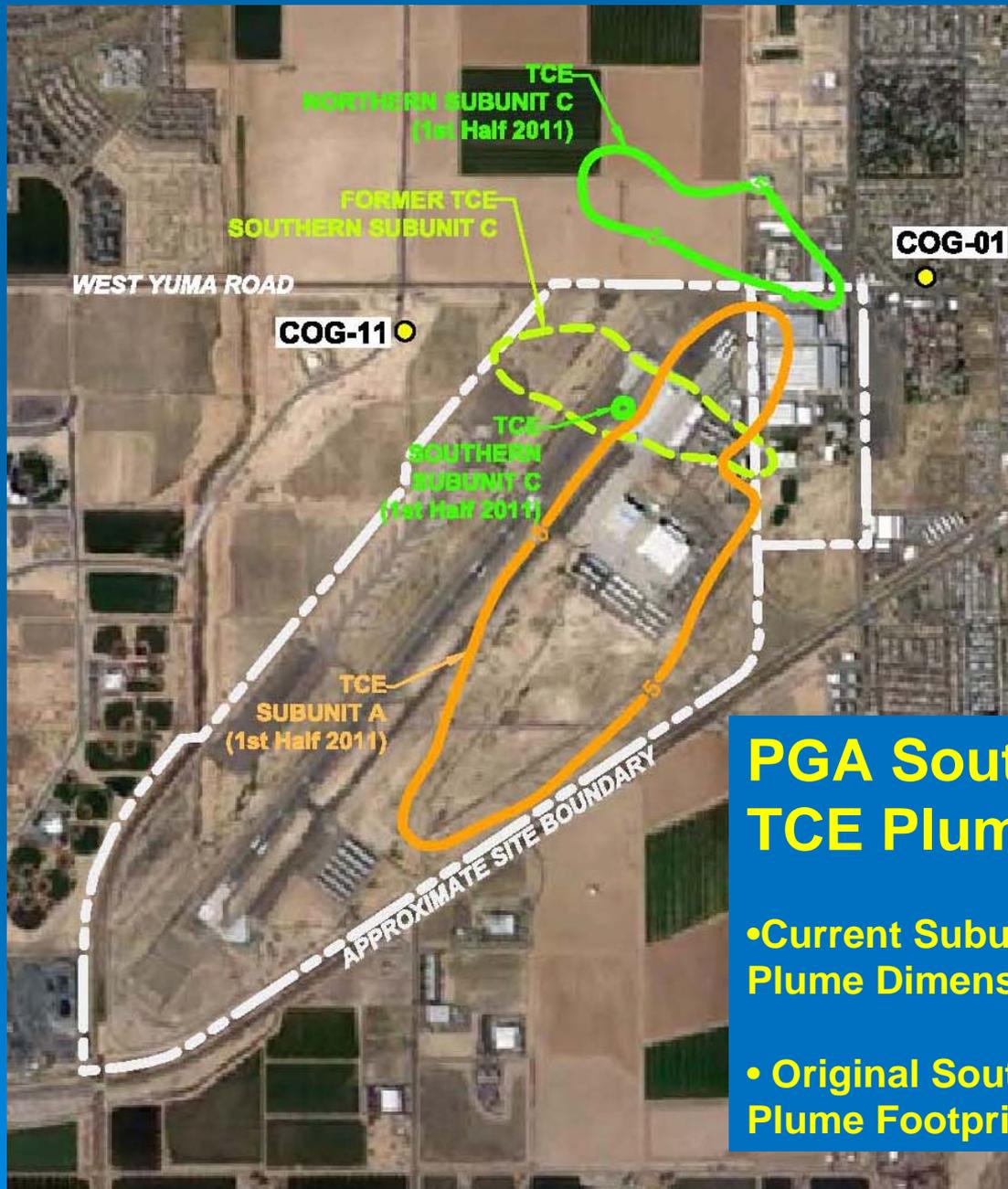
TRC

Agenda

- **PGA South Site – Plume Locations**
- **Update Status of Ongoing Cleanup**
- **Review Current Activities**
- **Upcoming Activities**

PGA South Site TCE Plumes and City of Goodyear Active Water Supply Well Locations





PGA South Site TCE Plume Locations

- Current Subunit A and Subunit C Plume Dimensions
- Original Southern Subunit C Plume Footprint



Current Plume Details

Subunit A TCE Plume

- 0.4 Square Mile Footprint
- 12 Extraction Wells
- 51 Monitoring Wells
- 270 Gallon Per Minute (GPM) Extraction Rate

Southern Subunit C Plume

- 0.001 Square Mile Footprint
- 4 Extraction Wells (no current groundwater extraction)
- 39 Monitoring Wells
- 260 GPM Extraction Rate (when E-201 was operational)

Northern Subunit C Plume

- 0.09 Square Mile Footprint
- 1 Extraction Well
- 8 Monitoring Wells
- 300 GPM Extraction Rate

PGA South

Review of Current Activities

- Status of PGAS Clean-Up
- Subunit A Monitoring Well Replacement
- Monitoring of Southern Subunit C TCE Plume
- Monitoring of Northern Subunit C Plumes
- GAC-04 Evaluation and Further Investigation

Status of Ongoing Cleanup

Subunit A Aquifer

- Peak TCE concentrations in monitoring wells have declined from 2,600 µg/L in 1990 to 88 µg/L in August 2011
- Treatment System Uptime during 3rd Quarter of 2011 was 99.9%

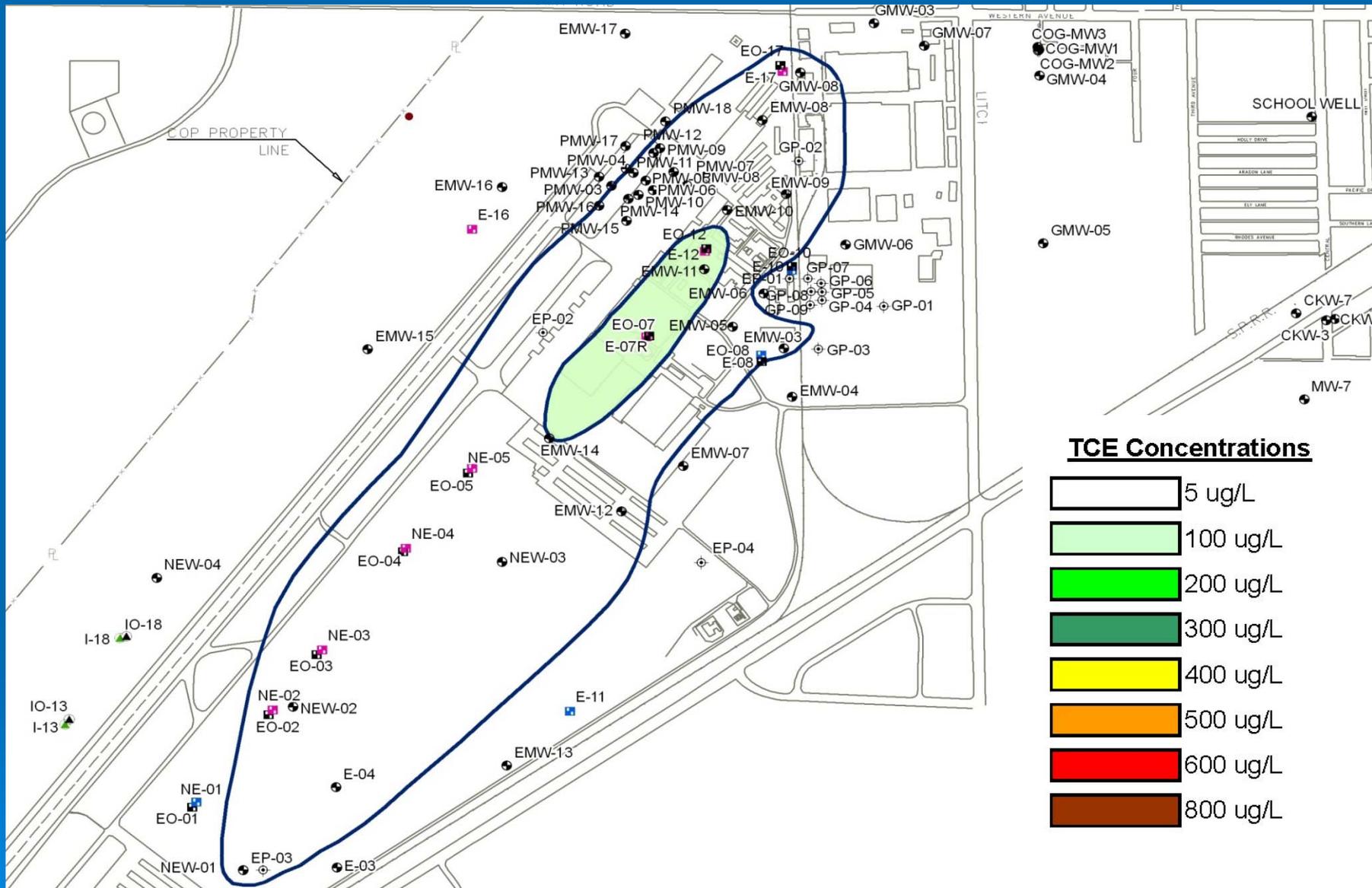
Subunit C Aquifer

- Peak TCE concentrations in Northern Subunit C monitoring wells have declined from 180 µg/L in 1990 to 98 µg/L in August 2011
- Treatment System Uptime during 3rd Quarter of 2011 was 92%

Groundwater TCE Cleanup Progress

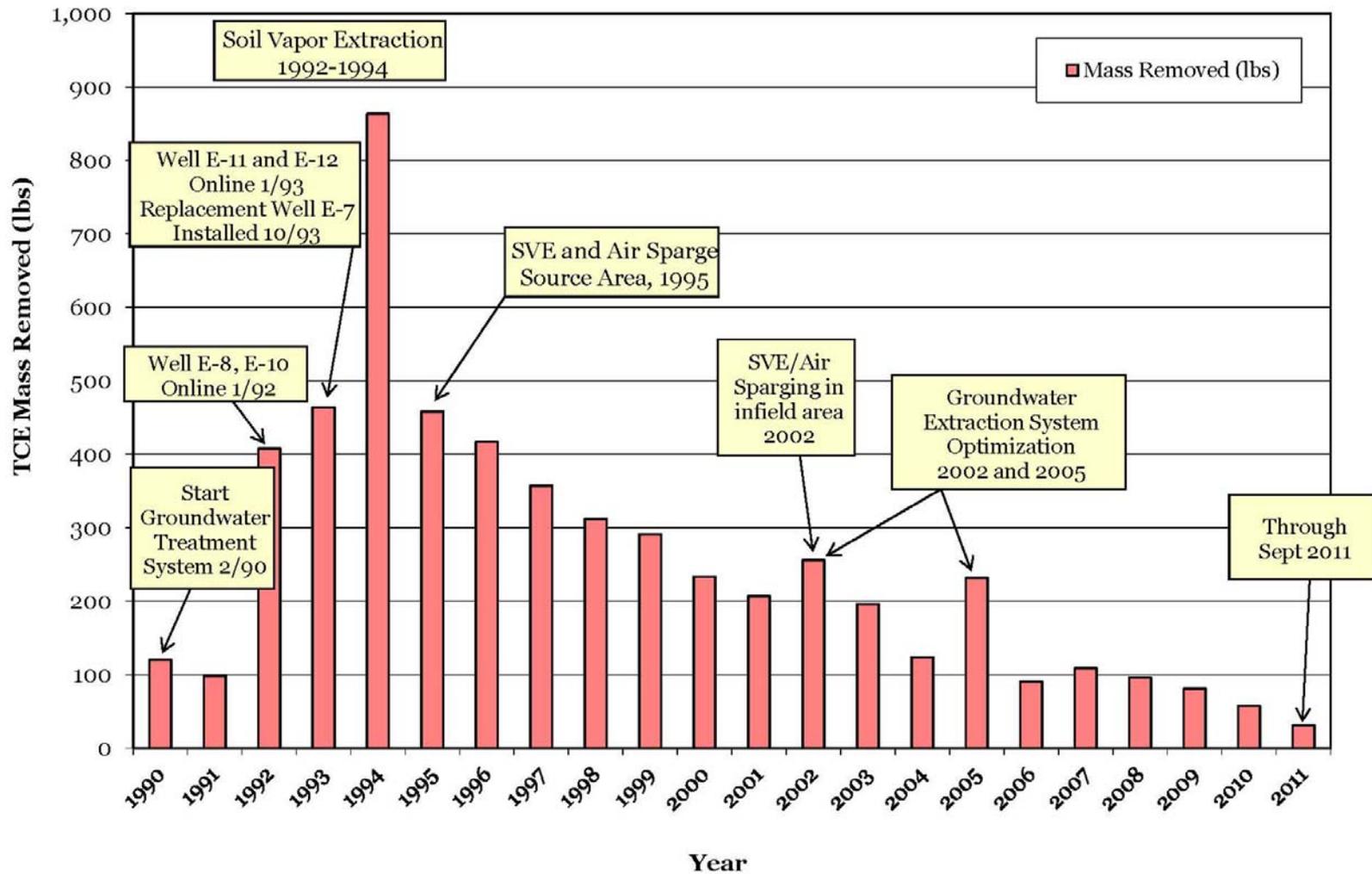
Subunit	Max TCE (µg/L) 1990	Max TCE (µg/L) August 2011	Cumulative Volume Pumped (Mgal)	Cumulative TCE Removed (Lbs)
Subunit A	2,600	88 (NEW-03)	5,540	5,525
Southern Subunit C	150	11 (SB-11LC)	1,826	172
Northern Subunit C	180	98 (GMW-13UC)	2,290	64
		TOTAL	9,656	5,761

Subunit A TCE Map



Subunit A TCE Mass Removal vs. Time

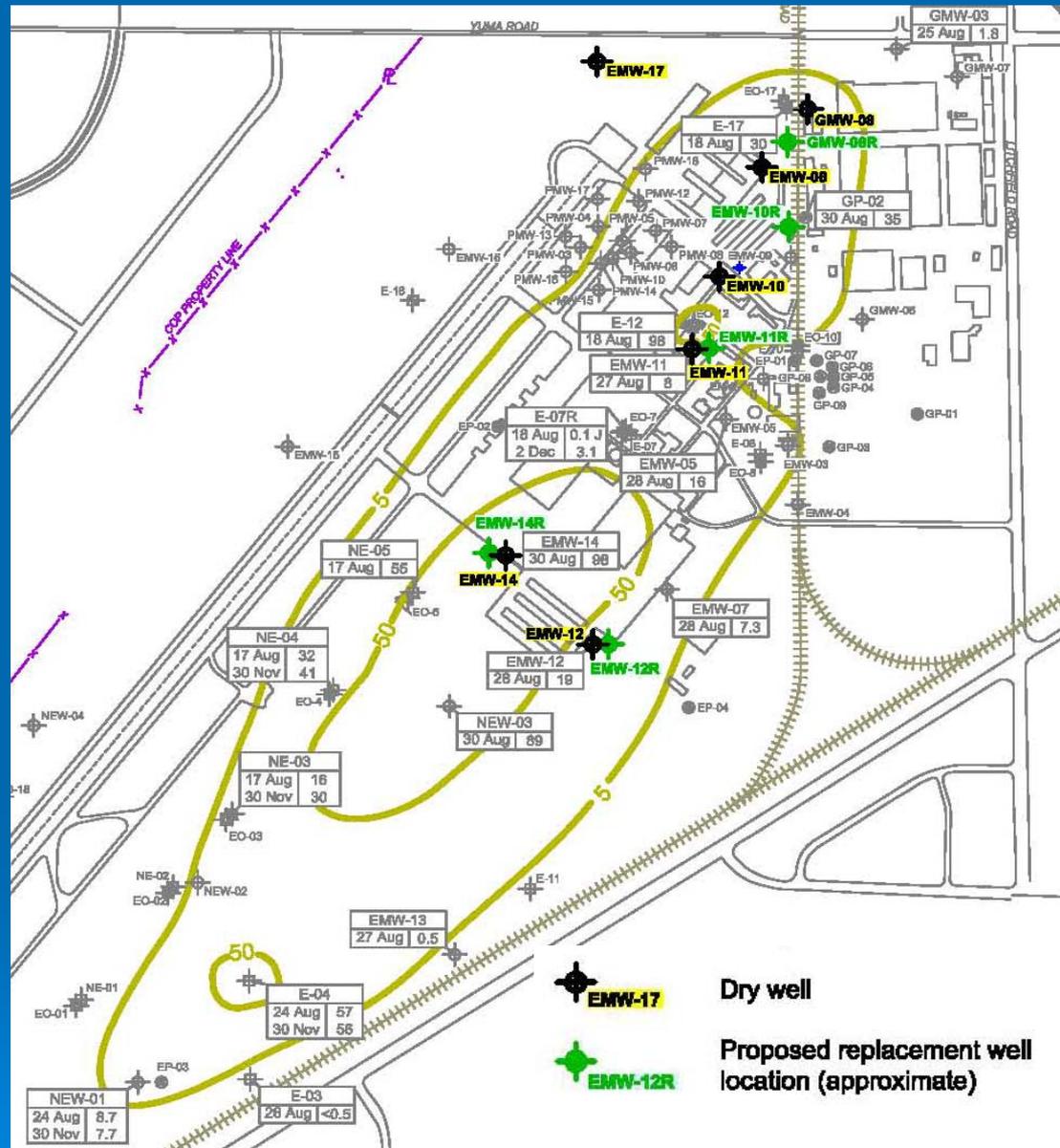
Subunit A - TCE Mass Removal Over Time Including History of Significant Removal Efforts



Subunit A Monitoring Well Replacement

- 8 Subunit A monitoring wells identified as having low water levels and not appropriate for sampling
- Work Plan submitted to replace the wells
- Abandonment of the 8 monitoring wells is planned for Dec 2011
- Installation of 5 replacement Subunit A monitoring wells
- New wells will be incorporated into long-term monitoring program

Proposed Subunit A Well Abandonments and Replacements

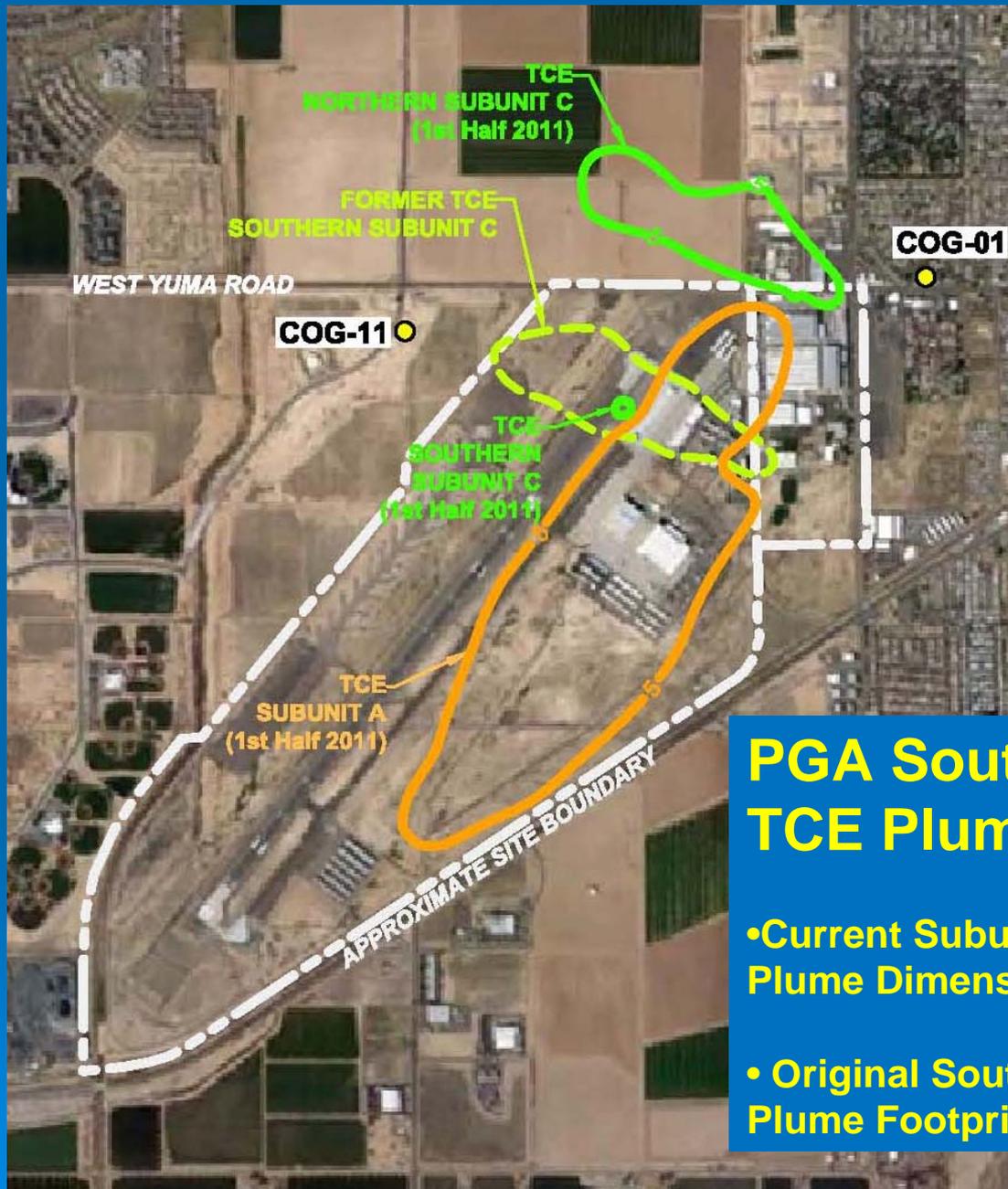


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Southern Subunit C Monitoring Update

- E-201 shut off in September 2009 and quarterly monitoring began to evaluate potential rebound in TCE concentrations
- Southern Subunit C well TCE concentrations remained below 5 µg/l during the August 2011 event with exception of wells GMW-10LC (6.6 µg/l), SB-06UC (8.5 µg/l), and SB-11LC (11 µg/l)
- Expanded Southern Subunit C monitoring plan approved and will begin with the November monitoring event



PGA South Site TCE Plume Locations

- Current Subunit A and Subunit C Plume Dimensions
- Original Southern Subunit C Plume Footprint



Northern Subunit C Monitoring Update

- Implemented agency recommendations and investigation in August including:
 - Monitoring of perchlorate and chromium at selected wells
 - Geochemical analyses (cations and anions) for selected wells
 - Environmental isotope analyses (oxygen, hydrogen, and sulfur) for selected wells
 - Resurveying of some monitoring wells

Current TCE Plume Outline Northern Subunit C

GMW-20LC
12/04/10 0.7 µg/L
02/10/11 0.7 µg/L
08/8/11 0.5 µg/L

GMW-19LC
12/07/10 14 µg/L
02/15/11 14 µg/L
05/12/11 6.9 µg/L
08/11/11 14 µg/L

GMW-17UC
12/05/10 2.0 µg/L
02/12/11 2.0 µg/L
05/11/11 2.3 µg/L
08/09/11 4.8 µg/L

GMW-18UC
12/05/10 3.2 µg/L
02/13/11 3.0 µg/L
05/11/11 3.4 µg/L
08/10/11 2.9 µg/L

E-102
12/01/10 3.0 µg/L
02/08/11 3.0 µg/L
05/04/11 3.1 µg/L
08/06/11 3.0 µg/L

GMW-16UC
12/06/10 12 µg/L
02/14/11 12 µg/L
05/12/11 13 µg/L
08/11/11 15 µg/L

GMW-14UC
12/07/10 13 µg/L
02/15/11 4.9 µg/L
05/12/11 7.2 µg/L
08/10/11 4.1 µg/L

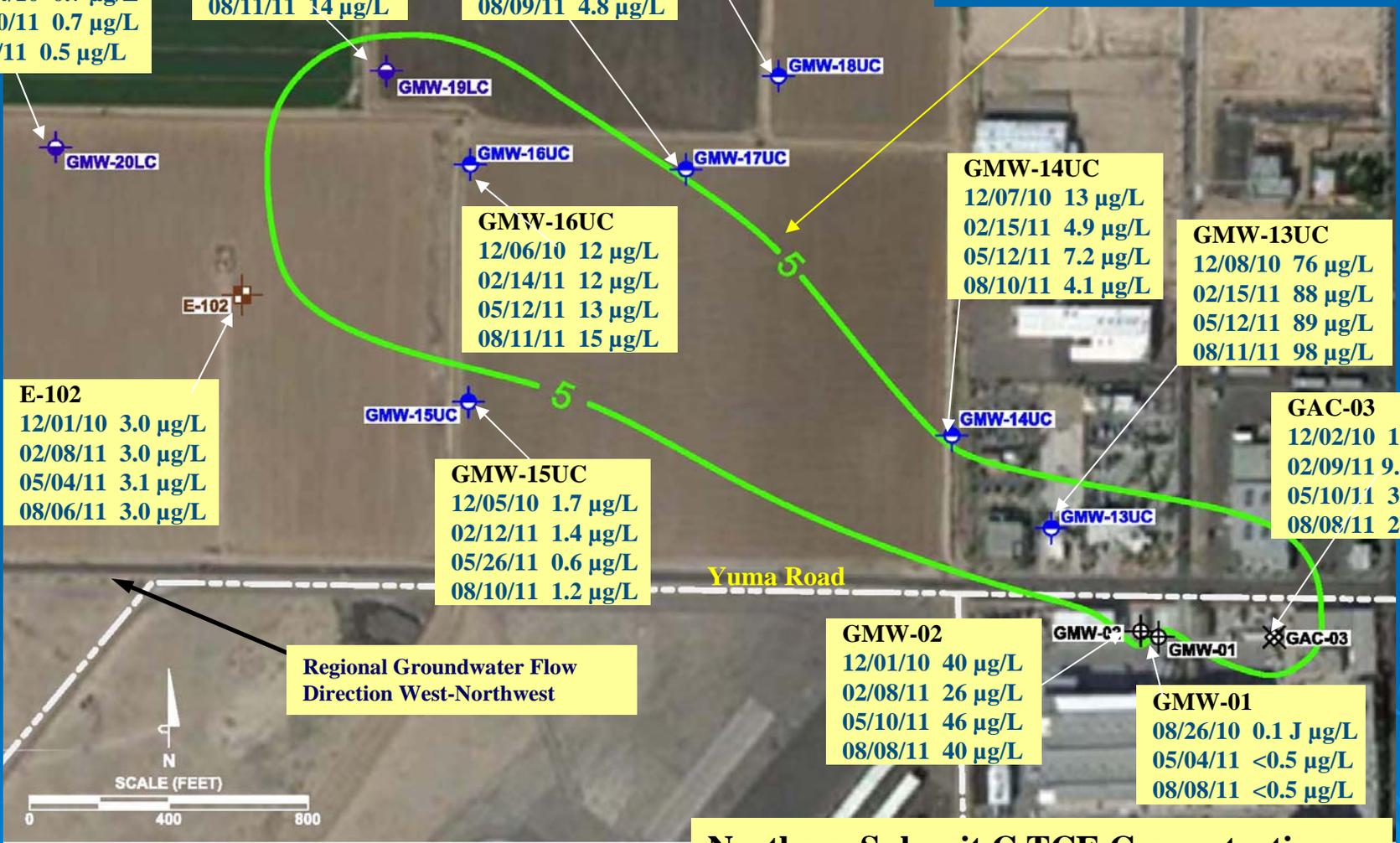
GMW-13UC
12/08/10 76 µg/L
02/15/11 88 µg/L
05/12/11 89 µg/L
08/11/11 98 µg/L

GMW-15UC
12/05/10 1.7 µg/L
02/12/11 1.4 µg/L
05/26/11 0.6 µg/L
08/10/11 1.2 µg/L

GAC-03
12/02/10 16 µg/L
02/09/11 9.9 µg/L
05/10/11 31 µg/L
08/08/11 27 µg/L

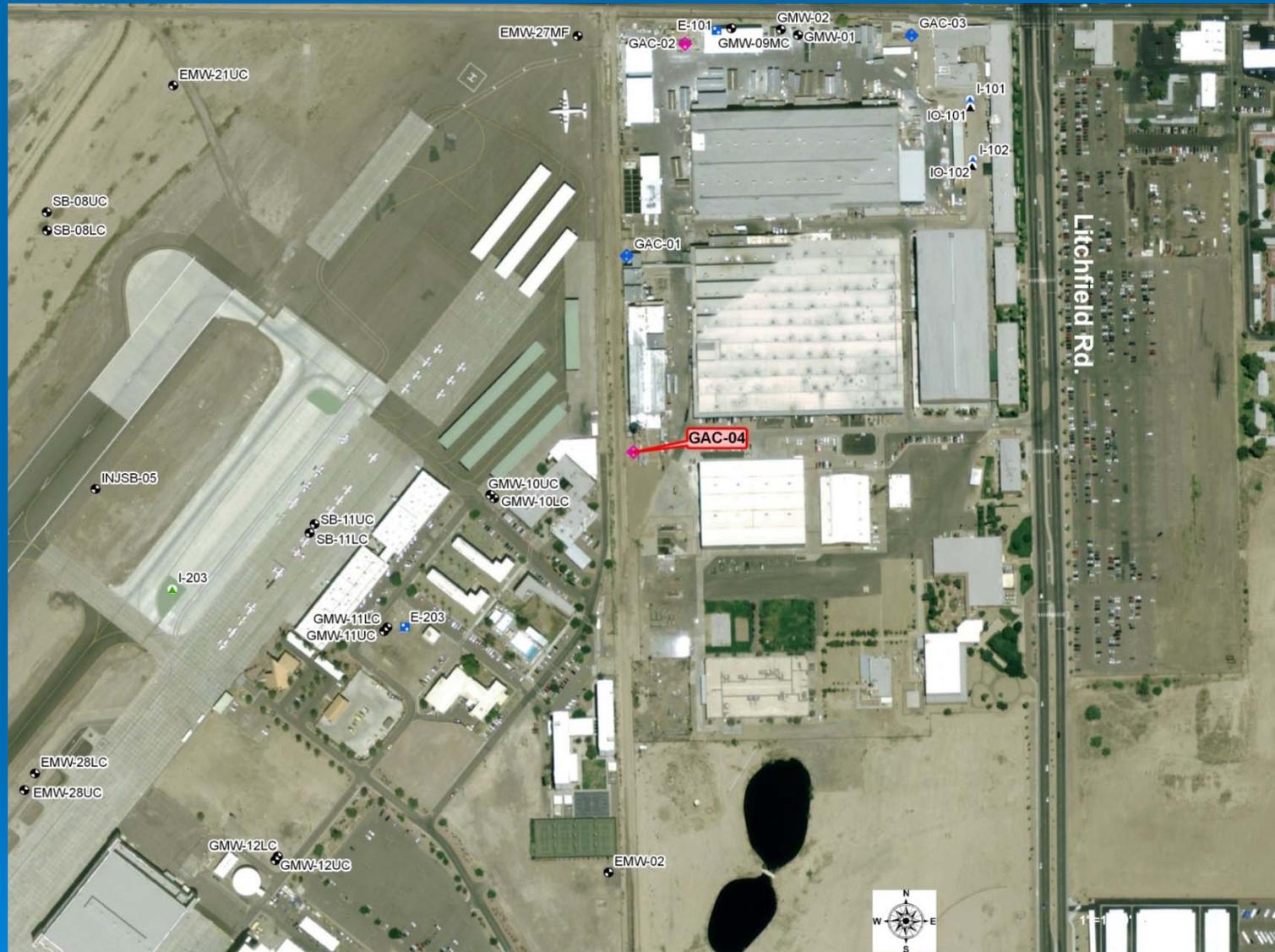
GMW-02
12/01/10 40 µg/L
02/08/11 26 µg/L
05/10/11 46 µg/L
08/08/11 40 µg/L

GMW-01
08/26/10 0.1 J µg/L
05/04/11 <0.5 µg/L
08/08/11 <0.5 µg/L



**Northern Subunit C TCE Concentrations
(Last 4 quarters)**

GAC-04 Investigation Update



GAC-04 Investigation Well Locations

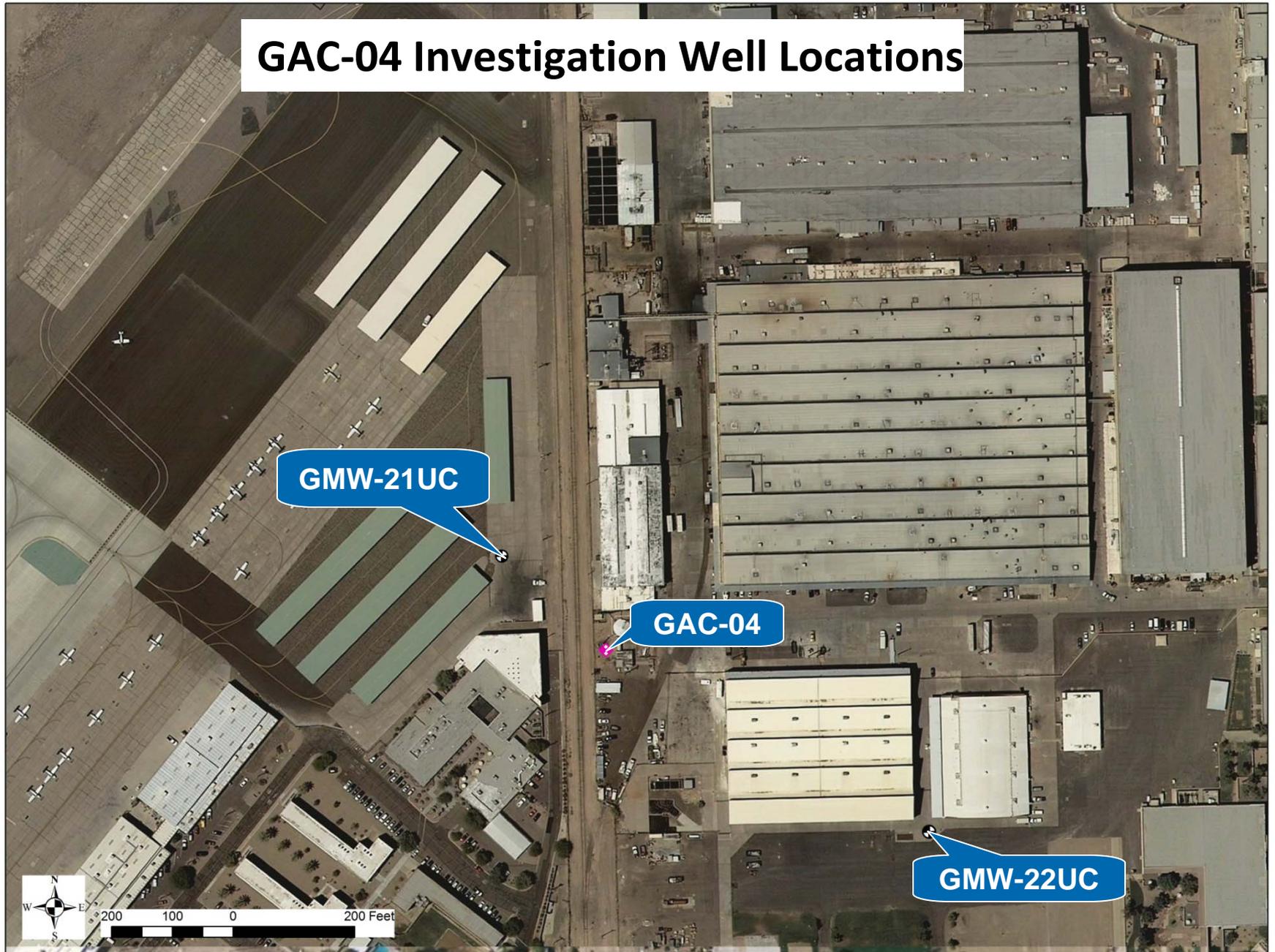
GMW-21UC

GAC-04

GMW-22UC



200 100 0 200 Feet



GAC-04 Investigation and Sampling Update

- Continued operation of GAC-04 and monthly sampling
- Additional GAC-04 investigation completed in August 2011
- Further Investigation proposed including
 - Geochemical analysis
 - Isotope analysis
 - Additional rebound testing

Upcoming Activities

- Fourth Quarter 2011 Groundwater Sampling Event
 - Sampling scheduled for November 14–18, 2011
- Subunit A Replacement Well Installation
- Additional Evaluation of GAC-04
- Continued Monthly Technical Conference Calls with ADEQ/USEPA
- Working with ADEQ/USEPA on Open Five Year Review Items

CAG Meeting

Quarterly Technical Meeting
PGA-North Superfund Site
November 3, 2011



Stephanie Koehne, MBA, Project Manager/Geologist
AMEC Geomatrix

Harry Brenton, RG, Principal Geologist
Matrix New World Engineering

- Leak occurred upon start up of MW-29 following piping modification – 24-hours in duration
- Maximum possible amount of TCE released
 - 0.055 pounds - Same as 1.8 Tablespoon
- Sample of Standing Water – 29 ug/L TCE
- Five Soil Samples – all Below MDL for TCE
- Two, 24-hour composite air samples
 - One Below I-10 Under Pass
 - One Background Sample Along RR R-O-W

- TCE detected in sample under Over Pass
- However, nine other VOCs detected in same sample including PCE
- These other VOCs are not attributable to PGA-N plume/groundwater
- All TCE detected cannot be conclusively attributed to the leak

PGA-N Overview



- A significant amount of testing has been performed to define the Subunit A and Subunit C TCE plumes.
- All soil and groundwater remediation systems are fully operational – *including new EA-08 system*
- Expanded Northeast Area Treatment Systems have contained the Subunit A TCE plume
- Area Water Supply wells are being protected and we are working with the EPA to move towards a “Regional Remediation Program” to control the plume.

REGIONAL GROUNDWATER TREATMENT SYSTEMS UPDATE

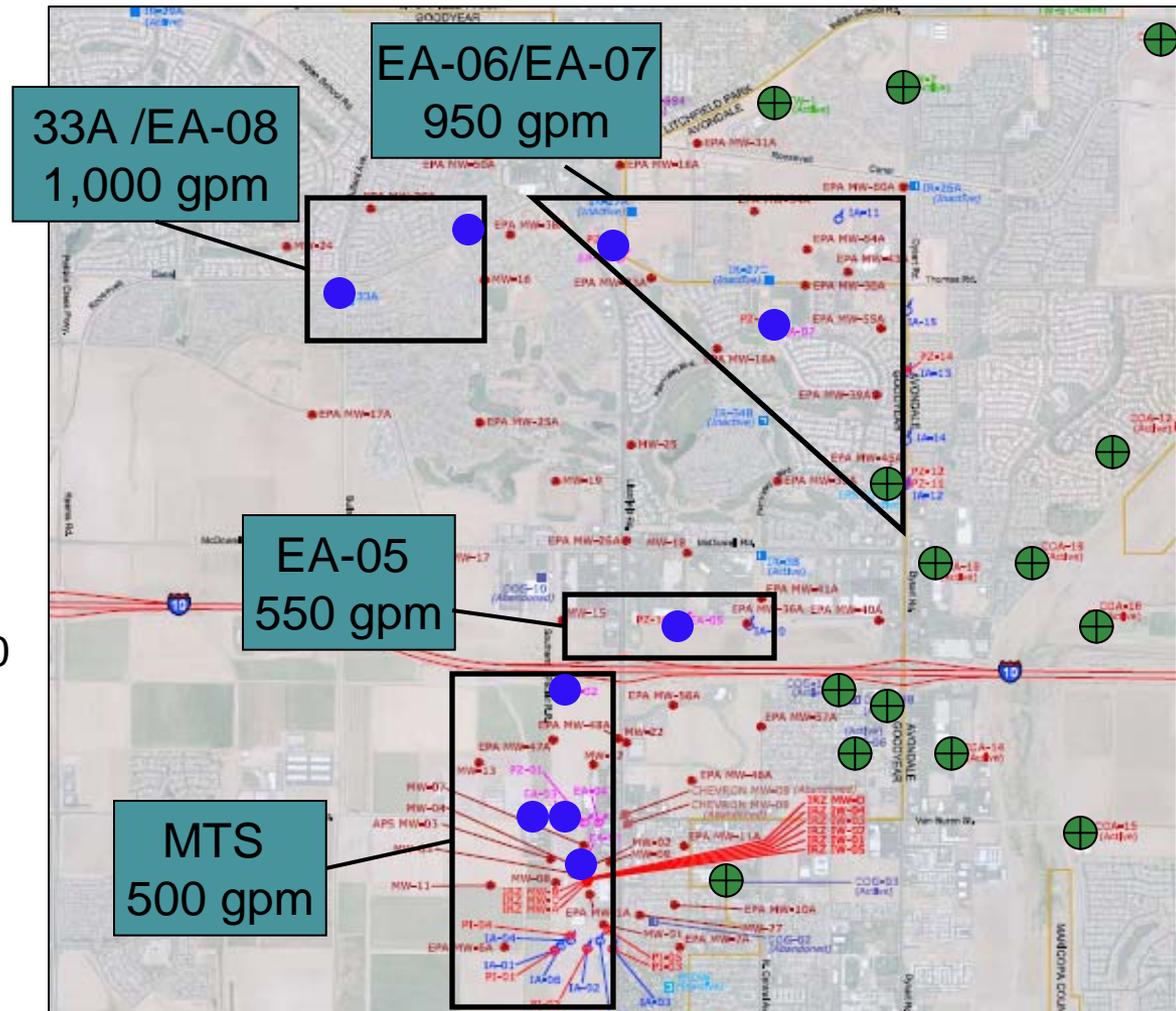
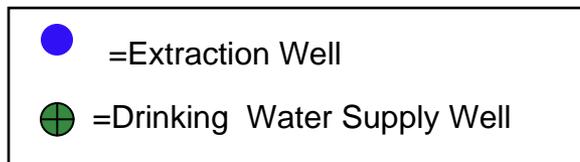


Groundwater Treatment Systems

- MTS – On-Site
- 33A/EA-08 – Northwest Area
- EA-06/EA-07 – Northeast Area
- EA-05 – Central Area-S of I-10

System Totals

- Combined Flow – ~3,000 GPM
- Total TCE Mass Removed – 54,000 lbs



EXPANDED NORTHEAST GROUNDWATER TREATMENT SYSTEM

MATRIX **NEW** WORLD
Enabling Progress



Expanded Northeast System Details

Extraction Well EA-07

- Increased flows in area by 90%
- Injection into IA-11, IA-12 and IA-13
- Injection wells IA-14 and IA15 are in but are not currently being used

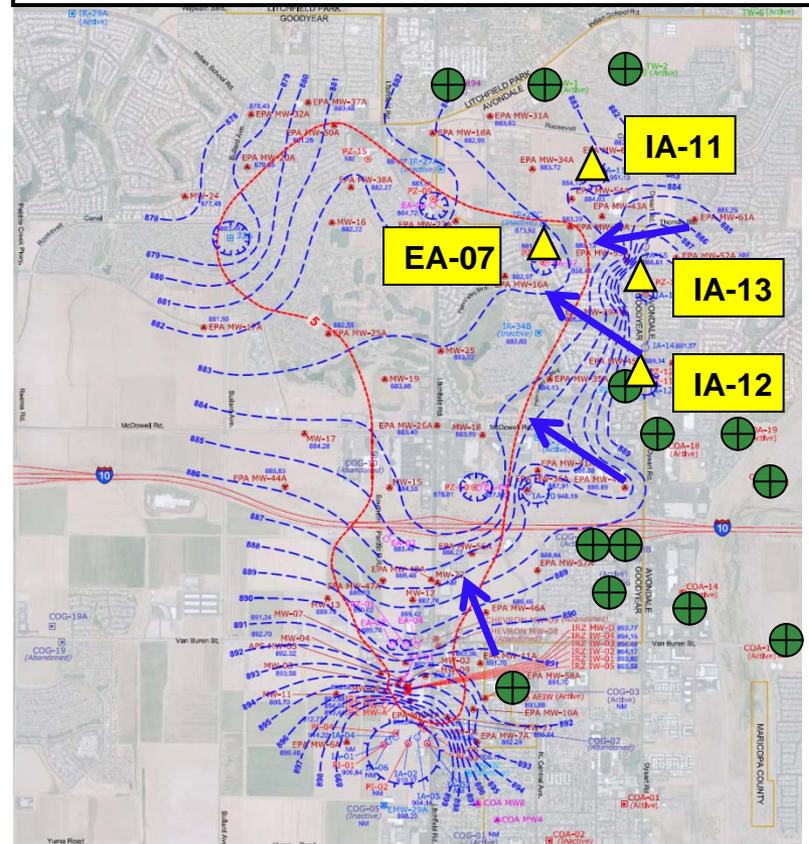
EA-06 GTS Totals (Thru June 2011)

- EA-06- 530 GPM; EA-07 – 400 GPM
- Flow rate to injection wells – 930 GPM
- 228 Mgals of water (700 ac-ft) into IA-11
- 192 Mgals of water (592 ac-ft) into IA-12
- 15 Mgals of Water (42 ac-ft) into IA-13

Results

- Hydraulic barrier created with 3 INJ Wells
- Drinking Water Supply wells are protected
- Summer pumping has not reversed flow

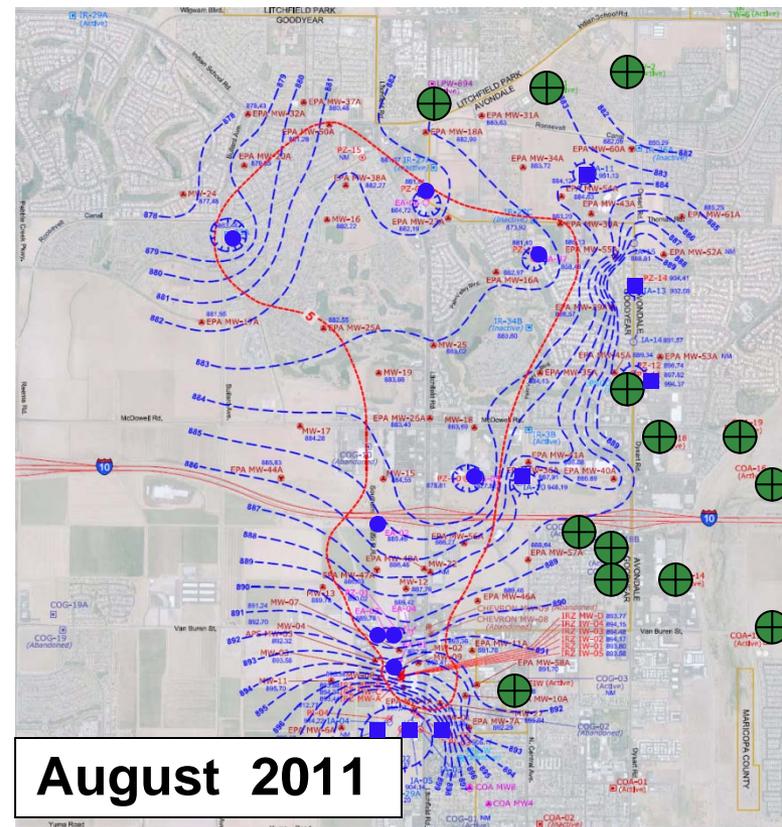
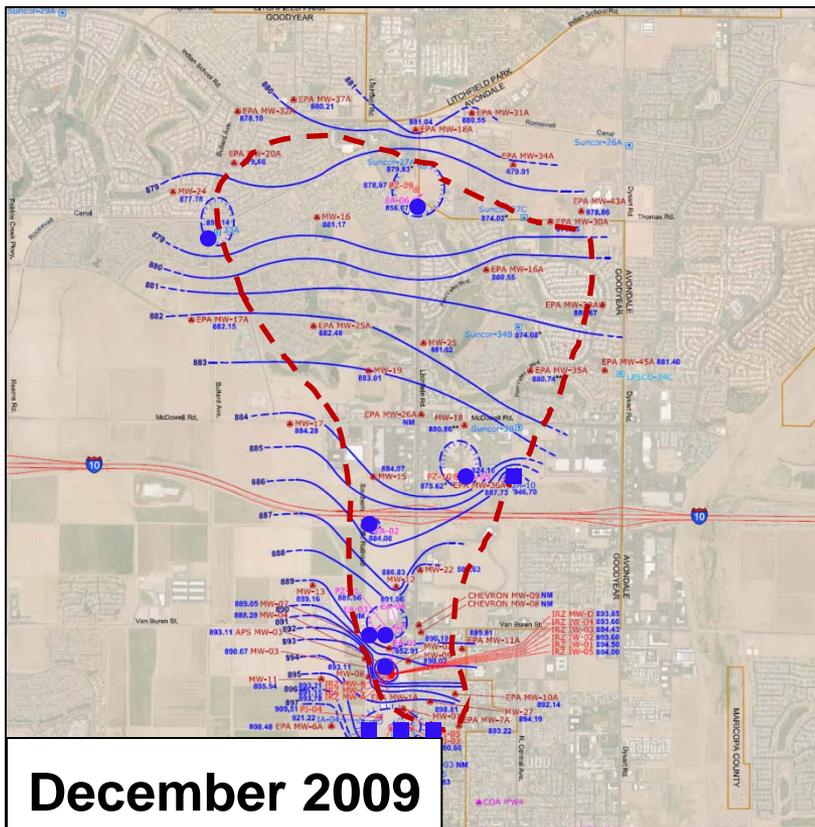
- = Groundwater Flow Direction
- = Drinking Water Supply Well
- = NE System Expansion Well



EXPANDED NORTHEAST TREATMENT SYSTEM - Continued



- Since 2009, the Subunit A TCE plume has remained relatively stable
- TCE has been reduced in key sentinel wells
- Injections have contracted the plume in the Northeast Area

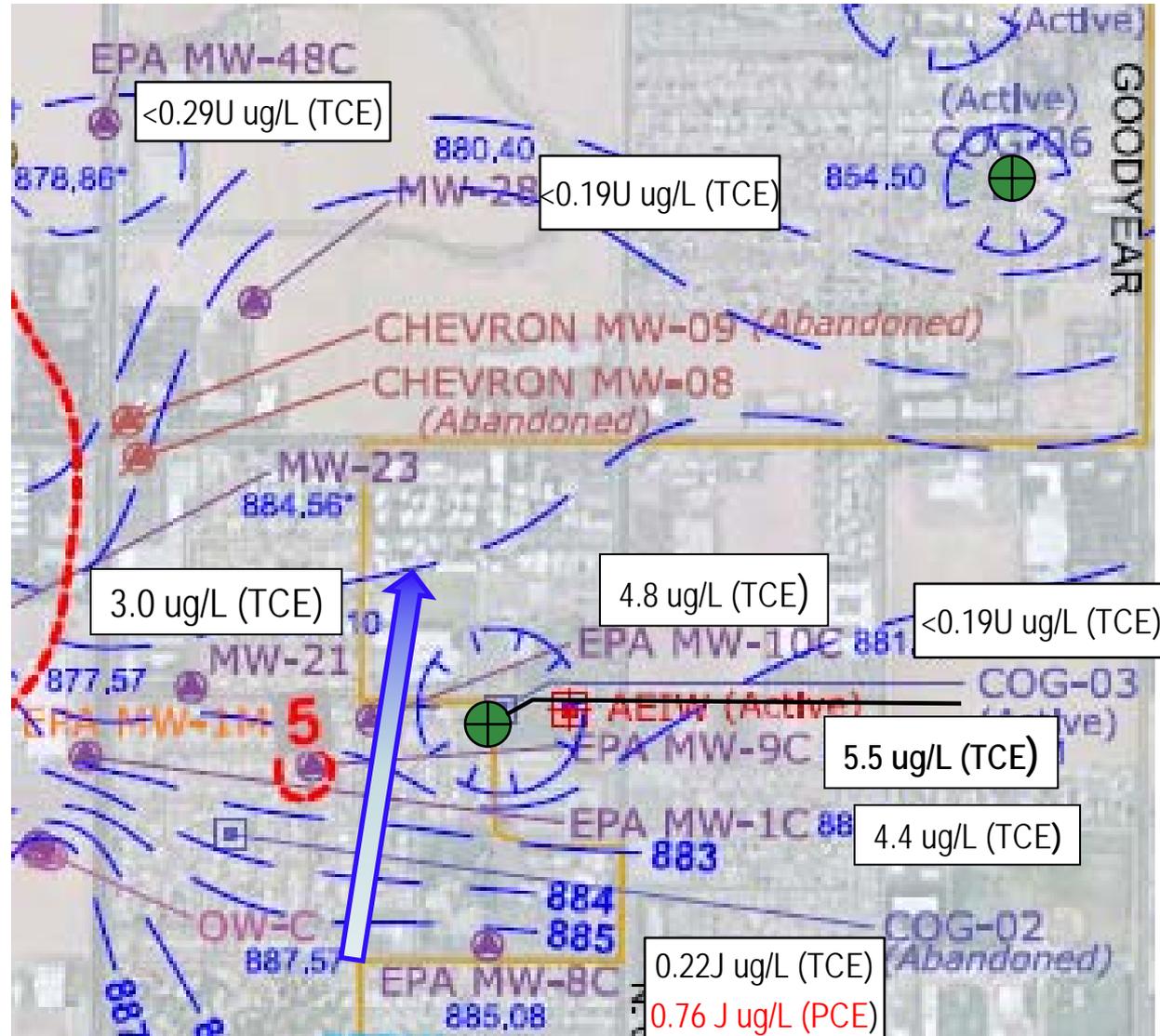


COG-03 Area Update



August 2011 Detections Subunit C

 = Subunit C TCE Plume
 = Water Supply Well
 = Direction of Groundwater Flow



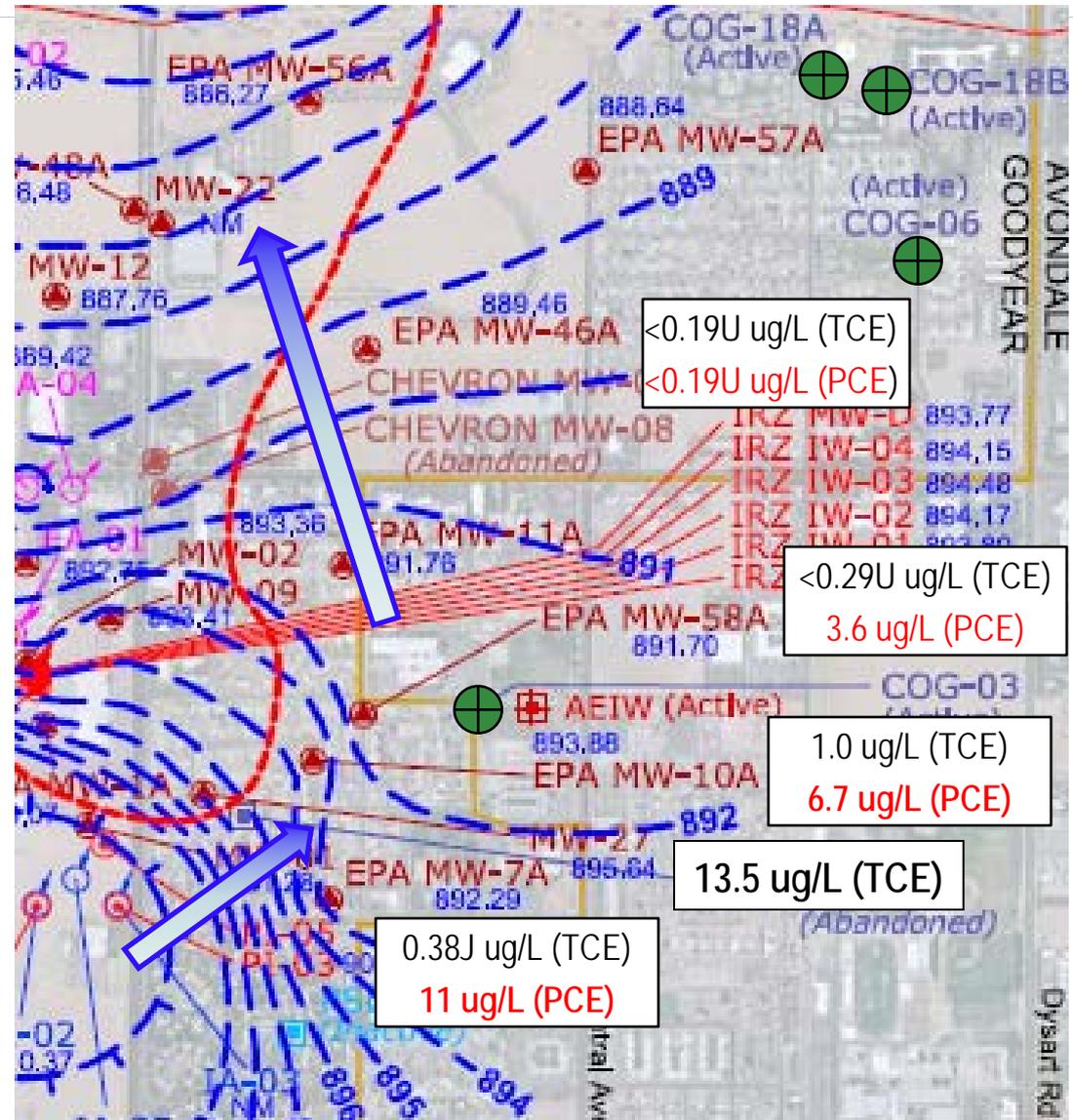
COG-03 Area Update



August 2011 Detections

Subunit A

 = Subunit A TCE Plume
 = Water Supply Well
 = Direction of Groundwater Flow



EA-08 Update



Extraction well

- Completed June 20, 2011
- 14-inch Diameter
- 230 feet deep

Treatment System

- Construction Completed
- Temporary Carbon System
- Operating at ~ 300 gpm

Water Quality

- Plume is defined
- TCE trends in vicinity monitor wells are stable



Upcoming Work



- Source Area Focused Feasibility Study
 - Evaluation of source area treatment technologies
 - To be submitted – January 2012

- Optimization of Soil Vapor Extraction Treatment System

- Area Between the Sites
 - PGA-North has completed the work requested by EPA on it's wells.

QUESTIONS?



Western Avenue WQARF Site





Western Avenue WQARF Site

Delfina Olivarez

**ADEQ Project Manager for the
Western Avenue WQARF Site**

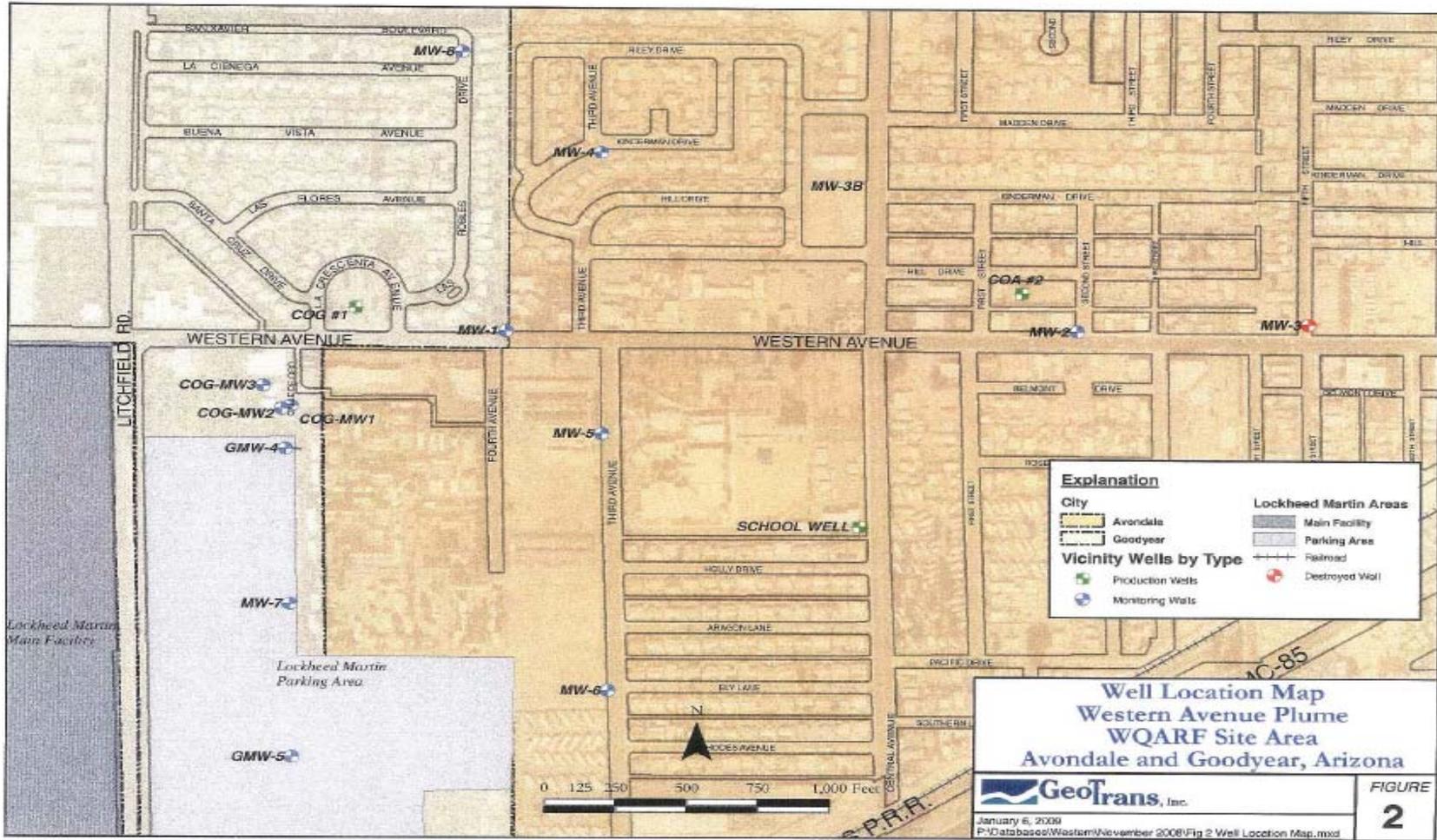
602-771-4710; dco@azdeq.gov

November 3, 2011

Update on Site Activities

- **Monthly Water Level Gauging of the Western Avenue Well Network.**
- **Water Quality Samples of Subunit C Production Well COG #1**
- **Quarterly Groundwater Monitoring.**

Western Avenue WQARF Site



Water Levels at Western Avenue

- **Over the last 5 to 8 years overall depth to water is declining.**
- **Gradient flow is very slow, flat and stable with not changes.**

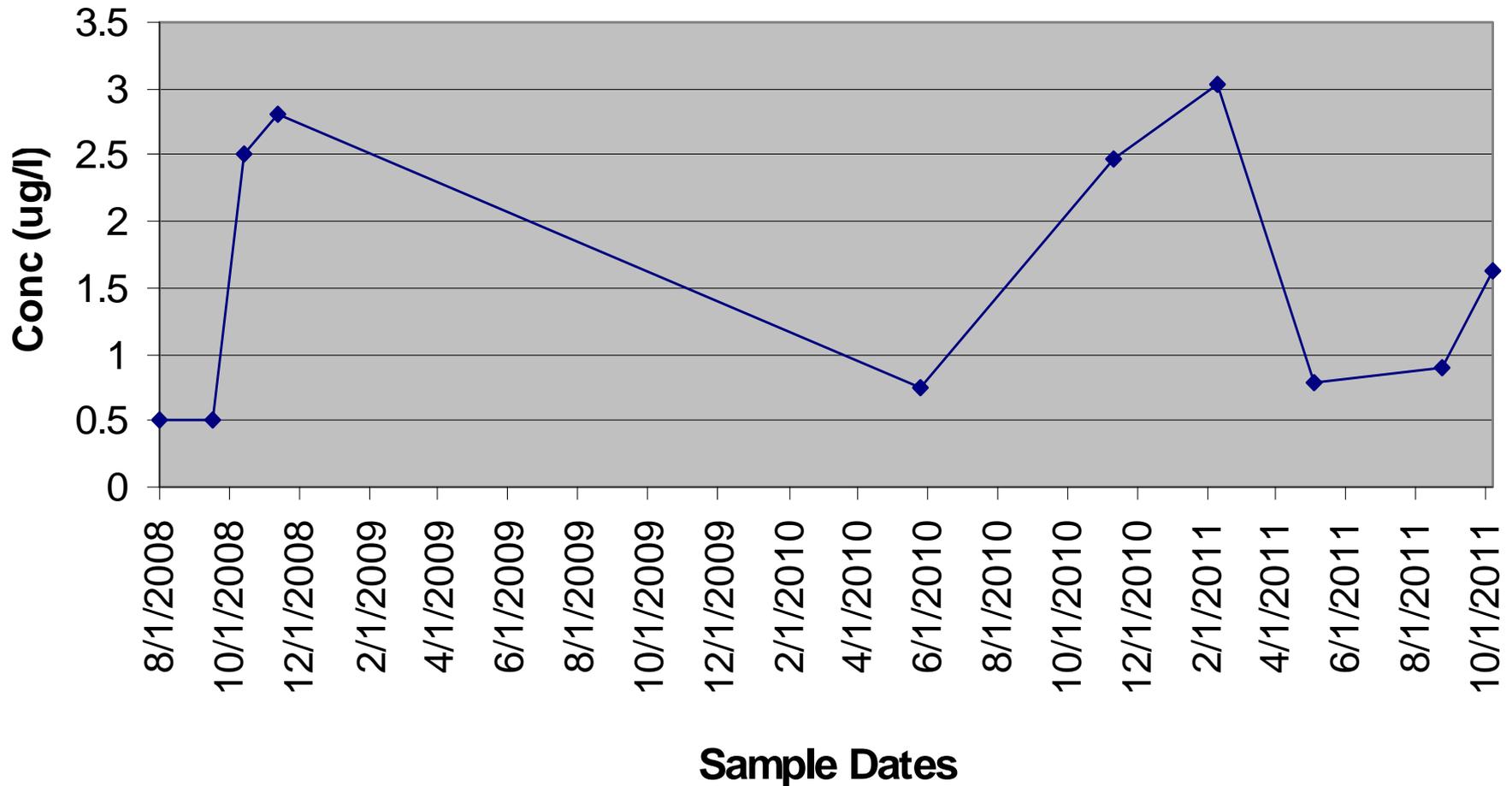
PCE Levels for City of Goodyear Drinking Water Well (COG#1)

- **8/24/11: 0.89 ug/L**
- **10/06/11: 1.63 ug/L**
- **Both less than AWQS of 5 ug/L**

Western Avenue WQARF Site

COG #1

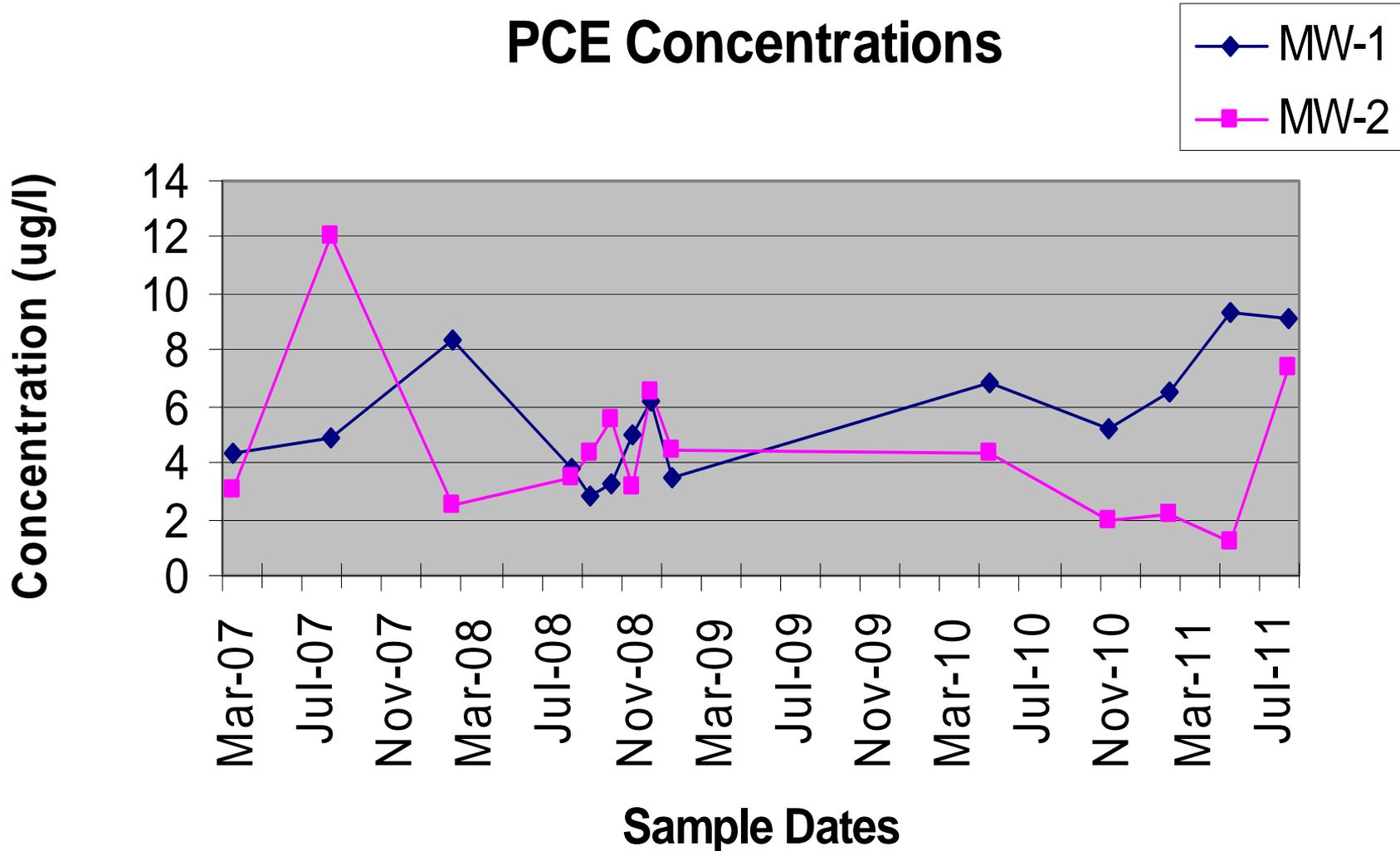
◆ PCE



Western Avenue Wells PCE Sampling Results of August 24, 2011

- **MW-1: 9.07 ug/L**
- **MW-2: 7.40 ug/L**
- **Both wells exceeded AWQS of 5 ug/L**
- **All other Western Ave. wells were non-detect.**

PCE Concentrations



Future of Western Avenue

- **Continue monthly water level sampling and water quality sampling of COG#1**
- **Continue quarterly water quality sampling of Western Avenue Wells**
- **Continue work on Feasibility Study**



Western Avenue WQARF Site

Questions

Thank You,

Delfina Olivarez

Western Avenue Project Manager

602-771-4710, dco@azdeq.gov