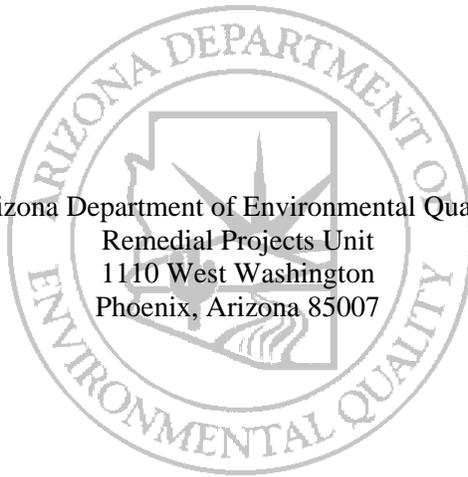


**PROPOSED REMEDIAL OBJECTIVES
REPORT
WEST VAN BUREN AREA
WQARF REGISTRY SITE
PHOENIX, ARIZONA**

May 16, 2011

**PROPOSED REMEDIAL OBJECTIVES
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Arizona Department of Environmental Quality
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1110 West Washington
Phoenix, Arizona 85007



Prepared By:

Arizona Department of Environmental Quality
Remedial Projects Unit

May 16, 2011

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LIST OF ABBREVIATIONS AND ACRONYMS

ADEQ	Arizona Department of Environmental Quality
AFY	Acre-Feet per Year
AWQS	Aquifer Water Quality Standard
CAB	Community Advisory Board
COC	Contaminant of Concern
COP	City of Phoenix
COT	City of Tolleson
ERA	Early Response Action
FS	Feasibility Study
GSF	Groundwater Savings Facility
MCL	Maximum Contaminant Level
RO	Remedial Objective
RI	Remedial Investigation
RID	Roosevelt Irrigation District
SRP	Salt River Project
TASOW	Task Assignment Scope of Work
WQARF	Water Quality Assurance Revolving Fund
WVBA	West Van Buren Area

1.0 INTRODUCTION

The Arizona Department of Environmental Quality (ADEQ) is developing the Proposed Remedial Objectives (ROs) for the site to meet requirements established under Arizona Administrative Code R18-16-406. This report relies upon the Land and Water Use Report (Use Report) prepared by Terranext for the site dated December 2007 and comments received during the public comment period and a revised Land and Water Use Study Questionnaire submitted by Roosevelt Irrigation District (RID) dated January 12, 2010 and received by ADEQ on January 18, 2010.

ROs are established for current and reasonably foreseeable uses of land and waters of the state that have been or are threatened to be affected by a release of a hazardous substance. The rule specifies that the reasonably foreseeable uses of land are those likely to occur at the site, and the reasonably foreseeable uses of water are those likely to occur within 100 years unless site-specific information suggests a longer time period is more appropriate [R18-16-406(D)]. Reasonably foreseeable uses are those likely to occur based on information provided by water providers, well owners, land owners, government agencies, and others. Not every use identified in the Use Report will have a corresponding RO. Uses identified in the Use Report may or may not be addressed based on information gathered during the public involvement process, Water Quality Assurance Revolving Fund (WQARF) limitations, and whether the use is reasonably foreseeable.

ROs chosen for the site will be evaluated in the feasibility study (FS), which will compare remedial measures and strategies required to meet ROs. A remedial strategy is one or a combination of the six general strategies identified in Paragraph B.4 of A.R.S. 49-282.06 (plume remediation, physical containment, controlled migration, source control, monitoring, and no action). A remedial measure is a specific action taken in conjunction with remedial strategies to achieve one or more ROs (for example, well replacement, well modification, water treatment, water supply replacement, and engineering controls).

The FS will propose at least three remedies (a reference remedy and generally two alternative remedies) capable of meeting ROs. A reference remedy is a combination of remedial strategies and measures capable of achieving ROs, and is compared with alternative remedies for purposes of selecting a proposed remedy. An alternative remedy is a combination of remedial strategies and measures different from the reference remedy; alternative remedies are compared with the reference remedy for purposes of selecting a proposed remedy. Proposed remedies will also be generally compatible with future land use specified by land owners.

This report has been prepared with stakeholder input gathered during the December 10, 2009, West Van Buren Area (WVBA) community advisory board meeting and public meeting (Appendix A), as well as written solicitations received during the 45-day public comment period (Appendix B) and a revised Land and Water Use Study Questionnaire submitted by RID dated January 12, 2010 and received by ADEQ on January 18, 2010. A responsiveness summary is included as Appendix C. This report is available to the public for review and comment. Following the 45-day comment period, ADEQ shall issue the final remedial investigation (RI) report which shall contain the final RO report.

2.0 REMEDIAL OBJECTIVES FOR LAND USE

The WVBA extends from approximately 7th Avenue west to 75th Avenue and from Buckeye Road north to Interstate 10, just south of and parallel to McDowell Road. The entire WVBA is located within the City of Phoenix (COP). However, the WVBA abuts the City of Tolleson's (COT) easternmost boundary, which is 75th Avenue between Van Buren Street and the RID Main canal.

The COP is comprised of 15 "urban villages". The WVBA is located in the Central City and Estrella urban villages, with the division between them being I-17 north of Durango Street, and 19th Avenue south of Durango Street. There are no village cores (a central focus with a pedestrian-oriented mix of land uses) or special planning districts within the WVBA. Given the vast acreage of agricultural land available to be developed in the future, the Estrella Village is identified as a Phoenix targeted growth area, and is expected to experience significant increases in both employment and residential growth.

The WVBA abuts the COT easternmost boundary, which is 75th Avenue between Van Buren Street and the RID canal. Land use in the eastern COT, adjacent to the WVBA, is primarily agricultural/ vacant and industrial, but is expected to increase in commercial use.

The WVBA is the areal projection of the western portion of a large commingled plume of contaminated groundwater. Contributors to this commingled plume include both industrial facilities within the WVBA, and contaminated groundwater from the east (as regional groundwater flow is generally westward). The RI report identifies known sources of commingled contaminants in groundwater.

Based upon review of public comments, ADEQ proposes the following ROs for land use in the WVBA area:

- Protect against possible exposure to hazardous substances in surface and subsurface soils that could occur during development of property based upon applicable zoning regulations.
- Protect against possible leaching of hazardous substances in surface and subsurface soils to the groundwater.
- Protect against possible land restrictions required by applicable zoning regulations because of hazardous substances in surface and subsurface soils.

3.0 REMEDIAL OBJECTIVES FOR GROUNDWATER USE

The primary COCs comprising the commingled WVBA plume include the following:

- tetrachloroethene (PCE)
- trichloroethene (TCE)
- 1,1,1-trichloroethane (TCA)
- cis 1,2-dichloroethene (cis 1,2-DCE)
- 1,1-dichloroethane (1,1-DCA)
- 1,1-dichloroethene (1,1-DCE)

Chromium is also a COC in the vicinity of Central Ave and 31st Avenue. The following groundwater uses within the WVBA have been identified:

- Municipal use (drinking water)
- Agricultural use (irrigation)
- Private use (including domestic, irrigation, livestock, and industrial)

3.1 Municipal Groundwater Use

The COP Water Services Department issued a final draft of their water resources plan (Plan) update in 2000. Plans for specific groundwater development within the WVBA are not addressed in the Plan. Since 1985, groundwater use by the COP steadily declined due to the availability of Central Arizona Project water, gateway credits, and declining well system capacity. The COP indicates that it is essential to maintain sufficient groundwater production capacity to provide for flexible water system operations and ensure adequate supplies during drought and temporary water system outages. Projected groundwater use in normal supply years is assumed to be 15,000 acre-feet per year (AFY) in the Plan.

On January 2, 1998, the Arizona Department of Water Resources approved the COP's application for a designation of assured water supply. This designation signifies that the COP has sufficient renewable water supplies to support projected population growth through the year 2100. A portion of these water supplies includes groundwater.

The COP has 35 active wells currently in production that can generate up to 67 million gallons of water per day. These wells are located at least one mile from WVBA boundaries. Due to water quality degradation and the establishment of more stringent maximum contaminant levels (MCLs), wells within the WVBA WQARF site were placed on inactive status. The total loss of COP well production for normal use from 1981 to 2000 due to elevated contaminant concentrations exceeds 90,000 AFY from the closure of over 60 wells. This represents 60 percent of the total production capacity of COP wells.

Degraded groundwater constitutes a vast reserve of water for use in meeting the COP's future water needs. The COP maintains several wells within or adjacent to WQARF sites within the COP for emergency use and future use in meeting service area water needs; these wells could be placed back in service with the addition of wellhead treatment systems or approved blending programs. Also, the COP holds "Special Pump Rights" with SRP, which are rights to groundwater well capacity developed by SRP. In order for the COP to maintain and use these rights in the future, it may be necessary to connect SRP wells directly to the COP water distribution system; this may require the addition of wellhead treatment systems.

According to COP's 50-year plan, the use of potentially degraded groundwater is likely to be somewhat limited within the next decade, but the COP will depend more heavily on this groundwater to provide for service area water demands later in the 50-year planning horizon. Specifically, new groundwater production capacity is needed starting in the year 2030 at 30,000 AFY, increasing to 55,000 AFY in 2050. Assuming average production of two million gallons per day and a 75 percent utilization factor, 18 new wells will be required beginning in 2030, with an additional 15 wells added by 2050.

According to the COT General Plan (2005), COT uses four production wells. Since COT currently receives most of its water from the COP through an Inter-Governmental Agreement, these four wells are used mainly during summer months for backup supply purposes. If the COP should experience a water shortage, COT may become more reliant on these production wells.

RID indicated in a revised Land and Water Use Study Questionnaire submitted on January 12, 2010 to ADEQ that their current use of groundwater from the RID water supply wells is for irrigation but the future use may be drinking water supply for residential and commercial development within the RID water district. The survey indicated that RID was in discussions with west valley water providers regarding delivery of water for municipal use. On September 23, 2010, the Town of Buckeye submitted a letter to ADEQ indicating that the Town of Buckeye was very interested in the utilization of the treated water from the RID ERA system in the future. On September 24, 2010, the City of Goodyear issued a letter expressing support for the RID remediation effort and indicated that Goodyear was interested in the utilization treated water from the RID ERA system in the future.

Based upon review of public comments, ADEQ proposes the following ROs for current and future municipal groundwater use in the WVBA:

- To protect the supply of groundwater for municipal use and for the associated recharge capacity that is threatened by contamination emanating from the WVBA WQARF site.
- To restore, replace or otherwise provide for the groundwater supply lost due to contamination associated with the WVBA WQARF site. This action will be needed for as long as the need for the water exists, the resource remains available and the contamination associated with the WVBA WQARF site prohibits or limits groundwater use.

3.2 Agricultural Groundwater Use

Groundwater is pumped from the WVBA by RID and transported off-site for agricultural purposes. RID has indicated that agricultural use of this water could change in the foreseeable future to drinking water use. SRP has wells near the WVBA which are used to pump groundwater for agricultural purposes but none of these wells are located within WVBA boundaries.

The RID was formed in 1928 after securing an agreement with SRP to pump and deliver water in 1923. RID provides its members with water for agricultural irrigation. RID production wells typically are pumped from March through September. There are currently two sources of RID water. Approximately 30,000 AFY is obtained as effluent from the 23rd Avenue Wastewater Treatment Plant and approximately 135,000 AFY is obtained from groundwater.

Approximately 20,000 AFY of additional reclaimed water from the 23rd Avenue plant could be provided to RID in lieu of groundwater pumpage. RID, in cooperation with the COP, has applied for a groundwater savings facility (GSF) permit for this additional reclaimed water. The GSF, when permitted, will allow the COP to accrue water storage credits for pumpage elsewhere. The COP intends to apply the credits to groundwater pumped to supply the planned Rio Salado Habitat Restoration Project along the Salt River from 19th Avenue to 24th Street; which is outside the WVBA. Thus, implementation of the GSF will result in the reduction of groundwater pumpage within the WVBA by 20,000 acre-feet per year.

RID water is derived from two sources, but is all delivered via a canal system. The Roosevelt Main Canal runs through a portion of the WVBA along its southern and western boundaries. This canal is fed via wells along the southern border and within the WVBA that discharge into laterals that flow south into the canal. A smaller second RID canal, the Salt Canal, flows west along the south side of Van Buren Street beginning at RID well 114 located on the west side of I-17. RID water is currently used to irrigate crops. The RID water users are downgradient of the WVBA; no water in the RID canal is used within the WVBA.

SRP generally uses groundwater to supplement its surface water supply. Thus, annual use of groundwater will fluctuate depending upon the availability of surface water. SRP currently has ten groundwater supply wells near the WVBA. Based on specific well information, the most reliable method of projecting future aquifer use by SRP may be through evaluation of their past aquifer use. The sum total of this historical annual pumpage is 15,820 acre-feet; thus, this may represent the future average annual pumpage by SRP near the WVBA.

Based upon review of public comments, ADEQ proposes the following ROs for current and future agricultural groundwater use in the WVBA:

- To protect the supply of groundwater for agricultural/irrigation use and for the associated recharge capacity that is threatened by contamination emanating from the WVBA WQARF site. To restore, replace or otherwise provide for the groundwater supply lost due to contamination associated with the WVBA WQARF site. This action will be needed for as long as the need for the water exists, the resource remains available and the contamination associated with the WVBA WQARF site prohibits or limits groundwater use.

3.3 Private Groundwater Use

On November 16, 1992, a meeting was hosted by ADEQ and attended by approximately 50 interested parties. The intent of the meeting was to encourage the parties to form a steering committee to address groundwater contamination issues in the WVBA. In post-meeting activities, a letter was sent from ADEQ to attendees requesting their commitment to the steering committee. The letter included a recommended schedule for the development of a consent agreement and a request for the development of an RI and FS. ADEQ would provide oversight to the committee. On January 27, 1993, ADEQ held a meeting with the steering committee to present a draft consent agreement and an outline of activities to be conducted in the study area.

As part of the consent agreement, members of the steering committee agreed to contribute funding for the WVBA site investigation. This meant that ADEQ could recover funds from expenses incurred by the state during investigative activities. Participants of the steering committee then formed the West Van Buren Group (WVBG).

On July 21, 1994, ADEQ offered the WVBG the opportunity to voluntarily participate in a private well survey. ADEQ had planned to conduct a survey of private wells within a portion of the WVBA. The survey conducted in 1994 supplemented previous ADEQ efforts, and a domestic well survey conducted by Maricopa County Department of Environmental Services.

Private groundwater use within the WVBA is minimal. In February, 1995 outreach letters were sent to 48 probable domestic well owners. As of March 1995 only 18 responses were received. Of the 18 responses, three reported operational private domestic wells, 12 reported a municipal water supply and three reported private wells not used for consumptive purposes. A further attempt was made to contact well owners by telephone. Successful contact was made with 17 well owners. Private groundwater use within the WVBA includes domestic, irrigation, livestock, and industrial uses. No private well owners responded to the solicitation for ROs within the WVBA.

Based upon review of public comments, ADEQ proposes ROs for current and future private groundwater use in the WVBA:

- To protect, restore or otherwise provide a water supply for potable or non-potable use by currently impacted private well owners within the WVBA WQARF site if the current use is impaired or lost due to contamination from the site. Actions are needed for as long as the wells are used for potable or non-potable purposes and their use is threatened, impaired or lost as result of contamination from the WVBA WQARF site.
- To protect, restore, replace or otherwise provide a water supply for potable or non-potable use by private well owners outside the current plume boundaries of the WVBA WQARF site if the current use is impaired or lost due to contamination from the site. This RO is applicable until a drinking water provider service connection can be confirmed for potable use.

4.0 REMEDIAL OBJECTIVES FOR CANAL/SURFACE WATER USE

The only canal water present within the WVBA is within RID canals/laterals. The RID Main Canal originates at 19th Avenue south of Interstate 17. Year-round discharge of water into the canal occurs at the COP 23rd Avenue wastewater treatment facility where 30,000 acre-feet per year of treated wastewater is discharged into the canal. Water within the canal is utilized for non-potable agricultural purposes. The canal is also fed by a number of RID production wells located throughout the WVBA as previously described. The wells either discharge directly into the canal, or discharge into both exposed and unexposed lateral canals that feed the main canal.

SRP's Grand Canal trends east-west north of the WVBA. Oriented north-south from the Grand Canal, at approximate 0.5 mile intervals, are open and piped lateral canals that transport water by gravity flow southwards. These lateral canals are located from 19th Avenue westward beyond 83rd Avenue. Water within the lateral canals is utilized for non-potable agricultural purposes.

4.1 RID Canal Water Use

RID currently provides its members with water for agricultural irrigation. RID water is derived from two sources, all delivered via a canal system. The Roosevelt Main Canal runs through a portion of the WVBA along its southern and western boundaries, and this canal is fed via wells along the southern border and within the WVBA that discharge into laterals that flow south into the canal. A smaller second RID canal, the Salt Canal, flows west along the south side of Van Buren Street beginning at RID well 114 located on the west side of I-17. RID water is currently used for crops. RID water users are downgradient of the WVBA; no water in the RID canal is used within the WVBA.

Based upon review of public comments, ADEQ proposes the following ROs for current and future RID canal water use in the WVBA:

- To protect, restore or otherwise provide a water supply for potable or non-potable use by currently impacted private well owners within the WVBA WQARF site if the current use is impaired or lost due to contamination from the site. Actions are needed for as long as the wells are used for potable or non-potable purposes and their use is threatened, impaired or lost as result of contamination from the WVBA WQARF site.
- To protect, restore, replace or otherwise provide a water supply for potable or non-potable use by private well owners outside the current plume boundaries of the WVBA WQARF site if the current use is impaired or lost due to contamination from the site. This RO is applicable until a drinking water provider service connection can be confirmed for potable use.

4.2 SRP Surface Water Use

SRP's Grand Canal trends east-west north of the WVBA. Oriented north-south from the Grand Canal, at approximate 0.5 mile intervals, are open and piped lateral canals that transport water by gravity flow southwards. These lateral canals are located from 19th Avenue westward beyond 83rd Avenue. Water within the lateral canals is utilized for non-potable agricultural purposes. The lateral canals are also fed by a number of SRP production wells located in areas surrounding the

WVBA; no SRP wells are located within the WVBA. Based on the fact that no SRP wells are located within the WVBA, no ROs are required for SRP surface water use in the WVBA.

APPENDIX A

**A COMMENTS RECEIVED FROM ORAL SOLICITATIONS FOR PROPOSED
REMEDIAL OBJECTIVES**

As per R18-16-406(I), a community advisory board meeting was held at Roosevelt Elementary School on December 10, 2009 during the 45-day public comment period. The purpose of the meeting was to solicit and consider proposed remedial objectives for the WVBA. The meeting gave a public forum for oral comments to be submitted. ADEQ received two proposed remedial objectives as follows:

Mr. Phil Lagas

1) The remedial objectives should maintain current groundwater uses.

Mr. Jerry Worsham

1) The remedial objectives should be cost effective and only treat water in contaminated zones and not over-treat from zones not impacted.

APPENDIX B

**B COMMENTS RECEIVED FROM WRITTEN SOLICITATIONS FOR PROPOSED
REMEDIAL OBJECTIVES**

As per R18-16-406(I), remedial objectives should be developed through the public process. ADEQ established a 45-day comment period from November 30, 2009 to January 26, 2010 to receive and consider written solicitations from the public regarding proposed remedial objectives. ADEQ received proposed remedial objectives in writing from six parties:

- Linden Park Neighborhood Association
- Roosevelt Irrigation District
- SRP
- Head/Penn Racquet Sports
- Mr. Phil Lagas
- City of Phoenix
- Univar USA Inc.

The written comments are attached.

LINDON PARK NEIGHBORHOOD ASSOCIATION

January 4, 2010

Jennifer Edward Thies
Project Manager, Remedial Projects Unit
Waste Program Division
Arizona Department of Environmental Quality
1110 W. Washington St., MC4415B-1
Phoenix, AZ 85007

RE: Public Notice Arizona Department of Environmental Quality
Notice of Solicitation of Remedial Objectives for the West Van Buren Area
Water Quality Assurance Revolving Fund Site

Dear Ms. Thies:

I am submitting this letter on behalf of the Lindon Park Neighborhood Association (LPNA) to propose remedial objectives for the West Van Buren Area (WVBA) Water Quality Assurance Revolving Fund (WQARF) Site in response to the solicitation for remedial objectives issued by the Arizona Department of Environmental Quality (ADEQ) on November 30, 2009.

A Remedial Objective (RO) is a goal to be achieved by a selected remedy, which includes the following elements: protecting against the loss or impairment of identified uses of land and waters of the state; restoring, replacing, or otherwise providing for identified uses of land and waters of the state; time-frames when action is needed to protect against or provide for the impairment or loss of the use; and the projected duration of the action needed to protect or provide for the use.

In response to the solicitation from ADEQ, LPNA proposes the following ROs for the West Van Buren Area site:

- 1) That all ROs for this site meet the above elements by being integrated with the existing and future Motorola 52nd Street (M52) Superfund Site remedies to include, but not be limited to, the list of hazardous substances that are contaminants of concern (COCs) that are/will be treated at the M52 site, and the M52 treatment/clean-up standards to be met;
- 2) That any RO protect human health and the environment through the reduction/elimination of exposure to the COCs;
- 3) That community engagement and public involvement be prioritized and maximized throughout the identification, investigation, proposal and clean-up processes;
- 4) That any remedy chosen be coordinated with and integrated with the M52 Superfund Site, as it appears that continuation of M52 contamination beyond the current OU3 border is/has been a contributing factor at the WVBA site as documented in the Draft Remedial Investigation Report;
- 5) That any remedy chosen take into account operation of the M52 Operable Unit 2 (OU2) treatment facility and any future treatment remedy in the M52 Operable Unit 3 (OU3) area; and
- 6) That community engagement and public involvement activities include discussion of the impact of the M52 Superfund Site contamination and remedies as well as the West Central Phoenix Plume to fully understand the sources of contamination, source control activities, the remedies being employed, the time-frames involved and the projected duration of the actions.

In addition to these ROs, LPNA respectfully requests an extension to the 30-day Public Comment Period for the above referenced Solicitation of Remedial Objectives (ROs) for the West Van Buren Area WQARF Site. At the December 10, 2009 WVBA WQARF Community Advisory Board (CAB) meeting a verbal request for an extension to the comment period was made by the co-chair of the CAB, and declined by ADEQ.

LPNA requests that an extension be granted due to the following:

- 1) The end of the public notice period does not appear on the ADEQ online calendar – an irregularity that did not seem to occur in other public notices on the calendar
- 2) Minutes from the December 10, 2009 WVBA WQARF CAB meeting have not been posted on the ADEQ website as of this afternoon
- 3) The difficulties associated with the effective shortening of the 30-day public comment period due to the holiday season, and
- 4) The inaccuracy in the description of the ADEQ RI/RO process in the published Public Notice

The Public Notice describes the process as, “After the 30-day public comment period for the proposed ROs has expired, ADEQ will prepare and provide notice of the availability of the Final Remedial Investigation (RI) Report. The Final RI Report will contain data gathered during the RI, the Final RO Report, and any responsiveness summaries compiled to address comments, issues or concerns raised in the community involvement process.” A community member reading the Public Notice would reasonably conclude that no additional public input would be accepted on the ROs being solicited.

However in response to a question about that conclusion, Julie Riemenschneider, ADEQ Manager Remedial Projects Unit, in an e-mail dated 12-2-09 states that, “ADEQ will gather the ROs from oral and written comments; make a decision on which ROs would be best for the West Van Buren WQARF site and (in this case) hold a second public CAB meeting. Subsequent meetings are warranted on sites where significant public interest exists.” During the December 10, 2009 WVBA WQARF CAB meeting, Ms. Riemenschneider reiterated the point that a public meeting would be held on the proposed ROs. Unfortunately anyone who was not in attendance at the CAB meeting would not be aware of this fact.

LPNA asks that this omission of important and relevant information be corrected in a new Public Notice for the Extension of the Public Comment Period. All members of the public should be in possession of accurate and complete information from the published notice. Members of the public should not be required to do independent research to verify and supplement information provided by ADEQ. If, as in this case, a Public Notice does not contain an accurate description of the process, ADEQ should extend the public comment period, correct the Public Notice, and republish it.

Thank you for your consideration of our comments. Please do not hesitate to contact LPNA if you have any questions regarding this matter.

Respectfully Submitted,



Mary Moore, Vice President
Lindon Park Neighborhood Association
4839 East Brill Street
Phoenix, AZ 85008

cc: Linda Mariner, ADEQ Community Involvement Coordinator
Janet Rosati, EPA Project Manager, Motorola 52nd Street Superfund Site OU3
Andria Benner, EPA Project Manager, Motorola 52nd Street Superfund Site OU2
Leah Butler, EPA Project Manager, Motorola 52nd Street Superfund Site OU1
Leana Rosati, EPA Community Involvement Coordinator

ROOSEVELT IRRIGATION DISTRICT

DIRECTORS
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STANLEY H. ASHBY
SUPERINTENDENT

December 30, 2009

Jennifer Edward Thies, Project Manager
ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
1110 West Washington Street
Phoenix, AZ 85007

**Re: PROPOSED REMEDIAL OBJECTIVES FOR WEST VAN BUREN
WATER QUALITY ASSURANCE REVOLVING FUND SITE**

Dear Ms. Thies:

On behalf of the Roosevelt Irrigation District (RID) and its Board of Directors, I am submitting this letter to propose remedial objectives for the West Van Buren Water Quality Assurance Revolving Fund (WQARF) site (WVBA Site). This letter has been submitted in response to the solicitation for remedial objectives issued by the Arizona Department of Environmental Quality (ADEQ) on November 30, 2009.

RID understands that the remedial objectives pertain to the final groundwater remedy for the WVBA Site, which will be selected by ADEQ after completion of the WQARF remedy selection process¹. However, RID firmly believes that remedial actions should be initiated immediately to mitigate the deleterious impact of the widespread contamination of our groundwater wells, water supply, and operations, as well as to protect the local community and the environment from potential exposure to the groundwater contamination. To this end, RID voluntarily submitted an Early Response Action Work Plan to ADEQ in accordance with applicable requirements under the WQARF program², and respectfully requests ADEQ's prompt approval of this plan. The Early Response Action we have proposed is consistent with the intent of conducting early response actions under the WQARF program³, and the magnitude of our proposed response action is clearly necessary in light of the extensive groundwater contamination and its widespread impact on our operations. Further, the early response action will initiate achievement of defined WQARF program remedial objectives⁴ that require protecting against the loss or impairment of identified uses of waters of the state by restoring, replacing, or otherwise providing for these water uses while the final remedy selection proceeds through the ADEQ administrative process for completion of the Feasibility Study, development of the Proposed Remedial Action Plan, and establishing the final Record of Decision.

¹ See Arizona Administrative Code (A.A.C.), Article 4, Title 18, R18-16-401 through 416

² See A.A.C. R18-16-405

³ See criteria specified in A.A.C. R18-16-405A

⁴ See definitions specified in A.A.C. R18-16-401

In response to ADEQ's request, RID proposes the following remedial objectives for the WVBA Site:

1. Protect human health and the environment by reducing and eventually eliminating potential exposure to hazardous substances that are contaminants of concern (COCs) in the groundwater;
2. Restore groundwater to meet all beneficial uses including potable supply;
3. Prevent further degradation of groundwater quality by COCs;
4. Minimize the relocation, transfer, and/or volatilization of COCs from groundwater to the environment;
5. Restore, replace, or otherwise provide alternate water supply for all existing water supply wells that are impacted by COCs in excess of Aquifer Water Quality Standards, equivalent to the legally permitted pumping capacity of the impacted wells;
6. Maintain plume containment to prevent impacts to wells that are not currently impacted by COCs;
7. Provide all water users a water source that meets the maximum anticipated beneficial use as drinking water;
8. Maximize the beneficial use of the treated groundwater to support the goals and objectives of the Arizona Groundwater Management Act; and,
9. Provide long-term management of contaminated groundwater to improve the regional aquifer's suitability for potable use.

These proposed remedial objectives were developed based on the following considerations:

- The need to restore the groundwater quality within the WVBA Site by reducing contaminant concentrations to less than Aquifer Water Quality Standards to allow use of this water for its maximum beneficial use as a source of drinking water;
- RID maintains the legally permitted right to pump over 120,000 gallons per minute from the WVBA Site (see attached Table 1)⁴. Over 50,000 gallons per minute of this permitted capacity are impacted by the groundwater contamination and over 70,000 gallons per minute of this permitted capacity are threatened by the groundwater contamination;
- Containment of contaminated groundwater is necessary to prevent plume movement and to protect down-gradient and peripheral supply wells;
- ADEQ and U.S. Environmental Protection Agency requirements to limit the transfer of volatile organic compounds from contaminated groundwater to air; and,
- The necessity for effective management of groundwater resources in the State of Arizona.

RID appreciates the opportunity to provide input to ADEQ on the remedial objectives for the WVBA Site.

Very truly yours,



Stanley H. Ashby

⁴ See Arizona Revised Statutes 45-462 and 45-494 1.a and b.

**Co: David P. Kimball, III Esq., Gallagher & Kennedy, P.A.
Sheryl Sweeney, Esq., Ryley Carlock & Applewhite
Dennis Shirley, Montgomery & Associates**

TABLE 1. SUMMARY OF ADWR WELLS 55 DATABASE REPORTED PUMPING CAPACITY FOR RID WATER SUPPLY WELLS

WELL ID	ADWR REGISTRATION NUMBER	CADASTRAL LOCATION	REPORTED PUMPING CAPACITY (gpm)	TOTAL DEPTH (ft, bls)	LAND SURFACE ALTITUDE (ft, msl)
RID-83	55-607227	A-01-01 11ACB	1,940	790	1,029
RID-84	55-607226	A-01-01 12DBA2	2,419	600	1,033
RID-85	55-607225	A-01-02 07CCC2	3,495	700	1,033
RID-86	55-607224	A-01-02 18ACB	5,286	300	1,030
RID-87	55-607223	A-01-02 17CAA	4,570	500	1,033
RID-88	55-607222	A-01-02 17ADD	3,718	1,800	1,032
RID-89	55-607221	A-01-02 09CBC	3,853	1,800	1,047
RID-90	55-607220	A-01-02 16DBB2	3,494	460	1,035
RID-91	55-607219	A-01-02 15BCC2	5,510	449	1,043
RID-92	55-607218	A-01-02 10CCB	1,971	500	1,052
RID-93	55-607217	A-01-02 15ACC	6,944	540	1,045
RID-94	55-607216	A-01-02 14BBC	6,138	425	1,051
RID-95	55-607215	A-01-02 11CBC2	3,875	1,800	1,062
RID-96	55-607214	A-01-02 14CCB	4,480	800	1,043
RID-97	55-607213	A-01-02 14CDD	5,958	1,800	1,045
RID-98	55-607212	A-01-02 24BBB2	5,286	1,675	1,052
RID-99	55-607211	A-01-02 14AAD	2,778	420	1,055
RID-100	55-607210	A-01-02 12CBC	2,778	302	1,061
RID-101	55-607209	A-01-02 13CDD2	6,720	400	1,052
RID-102	55-607196	A-01-02 13ABD2	5,958	440	1,059
RID-103	55-607208	A-01-02 13DAD	4,614	440	1,054
RID-104	55-607207	A-01-03 18BBC	5,510	410	1,058
RID-105	55-607206	A-01-01 12BBB	2,374	622	1,035
RID-106	55-607205	A-01-02 07BBB	3,000	790	1,044
RID-107	55-607204	A-01-02 08BBB	2,195	414	1,053
RID-108	55-607203	A-01-02 08BAA1	1,711	284	1,056
RID-109	55-607202	A-01-02 09BBB	2,845	500	1,061
RID-110	55-607201	A-01-02 09AAB2	3,069	500	1,060
RID-111	55-607200	A-01-02 10ABA	2,016	454	1,063
RID-112	55-607199	A-01-02 11BAB	3,136	650	1,066
RID-113	55-607198	A-01-02 11AAA	3,136	415	1,070
RID-114	55-607197	A-01-02 12BAA	2,240	395	1,072
VOC-IMPACTED WELLS PUMPING CAPACITY			52,490		
TOTAL PUMPING CAPACITY			123,017		

Well ID shown in red has concentrations of volatile organic compounds in excess of aquifer water quality standard

gpm = gallons per minute

ft, bls = feet below land surface

ft, msl = feet above mean sea level

ADEQ

Arizona Department
of Environmental Quality

COMMENT FORM

To comment on the proposed Remedial Objectives for the West Van Buren WQARF Site

Please provide the following:

Name: KEVIN WANTTAJA

Organization/Company: SALT RIVER PROJECT

Address: 1521 North Project Drive

City, State, Zip: Tempe, Arizona 85281

Phone: 602-236-2968 E-Mail: kevin.wanttaja@srpnet.com

Please summarize your major comments or concerns below (use back or additional sheet if needed):

PROPOSED REMEDIAL ACTION OBJECTIVES:

1) Prevent infiltration and leaching of contaminants of concern from soil to groundwater that would exceed any respective Aquifer Water Quality Standard.

2) Protect human health and the environment by:

a) Efficiently capturing and controlling the plume of VOC groundwater contamination.

b) Ensuring groundwater meets all applicable end use water quality standards

c) Ensuring conformance with applicable air quality regulations and standards

3) Conforms to applicable federal and state water right laws and conservation requirements.

4) Be reasonable, appropriate, and cost effective

You may also submit a copy of your oral statement and any attachments to:
Jennifer Thies, Project Manager
Remedial Projects Unit
Arizona Department of Environmental Quality
1110 West Washington Street, Mail Code 4415-B
Phoenix, Arizona 85007

Deadline: Comments must be submitted to ADEQ by 5:00 p.m., Monday, January 4, 2010



(Please sign)

01/04/2010
Date

GAMMAGE & BURNHAM

A PROFESSIONAL LIMITED LIABILITY COMPANY

ATTORNEYS AT LAW

TWO NORTH CENTRAL AVENUE

EIGHTEENTH FLOOR

PHOENIX, ARIZONA 85004-4470

TELEPHONE (602) 256-0566

FACSIMILE (602) 256-4475

RICHARD B. BURNHAM
MICHAEL R. KING
CURTIS ULLMAN
THOMAS J. McDONALD
KEVIN R. MERRITT
KEVIN J. BLAKLEY
JEFFREY J. MILLER
SUSAN L. WATCHMAN
CHRISTOPHER A. WOMACK
LISA T. HAUSER
GEORGE U. WINNEY III
MANJULA M. VAZ
JAMES F. POLESE
RACHEL R. WEISS
HEATHER J. BOYSEL
JONATHAN A. BENNETT

GRADY GAMMAGE, JR.
RICHARD K. MAHRLE
MARY B. ARTIGUE
JAMES A. CRAFT
RANDALL S. DALTON
JOHN R. DACEY
CAMERON C. ARTIGUE
STEPHEN W. ANDERSON
TIMOTHY J. MARTENS
JERRY D. WORSHAM II
ANTHONY J. MEIER
KAY BIGELOW
PATRICIA E. NOLAN
GREGORY J. GNEPPER
RYAN J. MILLECAM
CAROLYN V. WILLIAMS

OF COUNSEL:

F. WILLIAM SHEPPARD
DIANE K. GEIMER

December 16, 2009

WRITER'S DIRECT LINE

(602) 256-4452

jworsham@gblaw.com

File No. 3836-4

RECEIVED
DEC 17 2009
JERRY D. WORSHAM II

Arizona Department of Environmental Quality
Jennifer Thies, Project Manager
Remedial Projects Unit
1110 West Washington Street
Mail Code 4415-8
Phoenix, AZ 85007

West Van Buren WQARF Site – Remedial Objectives

Dear Jennifer:

On behalf of Head/Penn Racquet Sports located at 306 S. 45th Avenue, Phoenix, AZ 85043, please consider these comments on the proposed Remedial Objectives and include these comments in the official ADEQ record.

Call me with any questions.

Sincerely yours,

GAMMAGE & BURNHAM P.L.C.


By

Jerry D. Worsham II

JDW/clr

Enclosures

cc: Wayne Smith, Head/Penn



COMMENT FORM

To comment on the proposed Remedial Objectives for the
West Van Buren WQARF Site

Please provide the following:

Name: Wayne Smith, Engineering Manager

Organization/Company: HEAD/Penn Racquet Sports

Address: 306 South 45th Avenue

City, State, Zip: Phoenix, AZ 85043

Phone: (602)447-2252 E-Mail: wsmith@us.head.com

Please summarize your major comments or concerns below (use back or additional sheet if needed):

The Remedial Objectives should incorporate the following:

- (1) Provide the most cost effective solution to remediate the contamination to the appropriate water quality standard for its current use.
- (2) Should treat the least amount or volume of water necessary to remediate the plume to the appropriate water quality standard for its current use.
- (3) Should not pump water from wells, aquifers, or geologic zones that are not contaminated.
- (4) Be reasonable, necessary and cost effective.

You may also submit a copy of your oral statement and any attachments to:

Jennifer Thies, Project Manager
Remedial Projects Unit
Arizona Department of Environmental Quality
1110 West Washington Street, Mail Code 4415-8
Phoenix, Arizona 85007

Deadline: Comments must be submitted to ADEQ by 5:00 p.m., Monday, January 4, 2010.

Wayne Smith
(Please Sign)

12/15/2009
date

Comment Form - Continuation Page:

Name: Wayne Smith

Organization: HEAD/Penn Racquet Sports

- (5) Identify and evaluate the appropriate groundwater cleanup standards.
- (6) Before adopting the final Remedial Objectives, ADEQ should conduct an engineering evaluation/cost analysis (EE/CA). [Note: The EE/CA is an analysis of remedial alternatives for the WVB WQARF area.]
- (a) Publish a notice of availability and brief description of the EE/CA in a major local newspaper of general circulation;
 - (b) Provide a reasonable opportunity, not less than 30 calendar days, for submission of written and oral comments after completion of the EE/CA. Upon timely request, the ADEQ will extend the public comment period by a minimum of 15 days; and
 - (c) Prepare a written response to significant comments.
- (7) Reject the use of an Early Response Action.

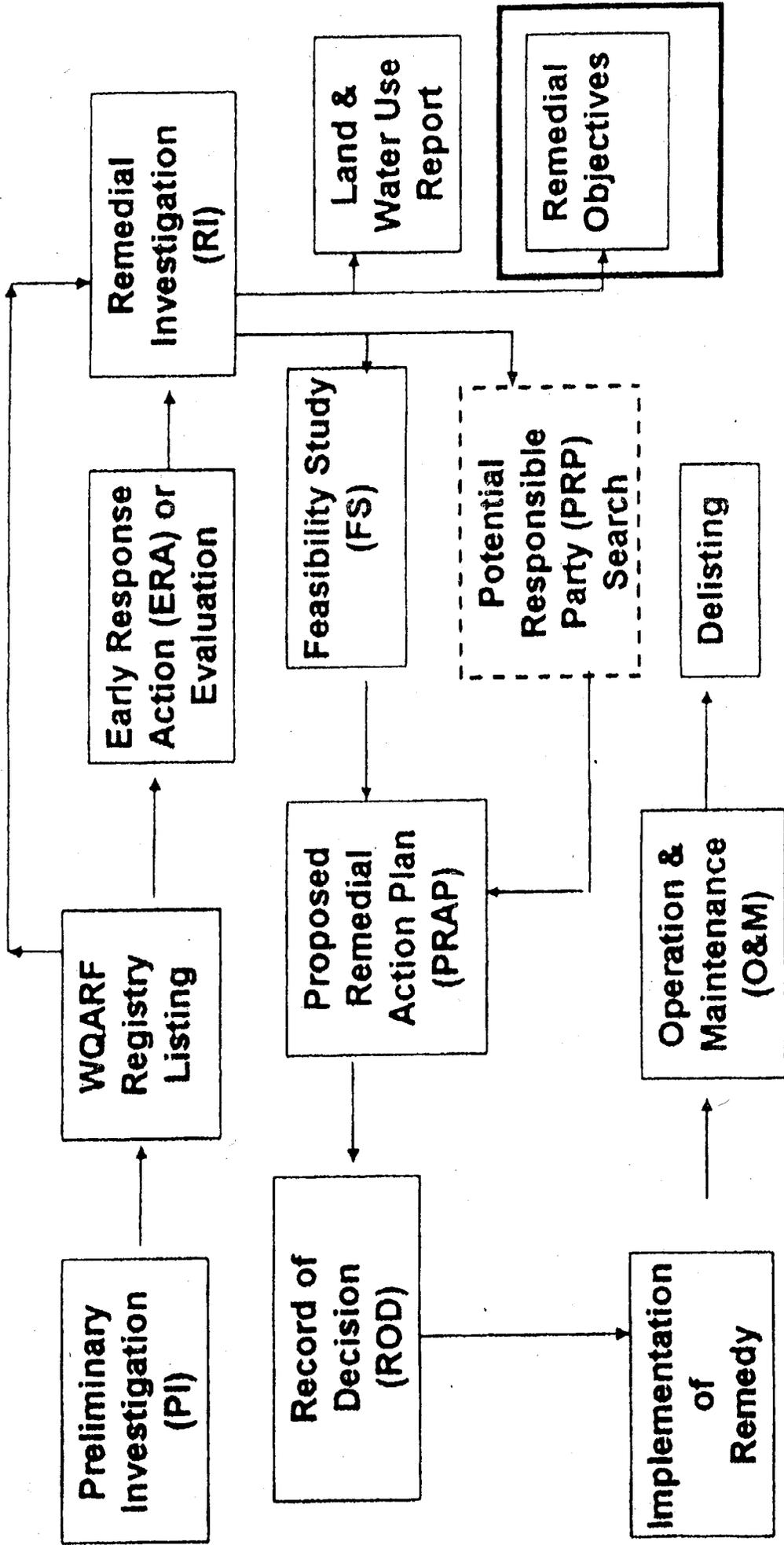
You may also submit a copy of your oral statement and any attachments to:
Jennifer Thies, Project Manager
Remedial Projects Unit
Arizona Department of Environmental Quality
1110 West Washington Street, Mail Code 4415-8
Phoenix, Arizona 85007

Deadline: Comments must be submitted to ADEQ by 5:00 p.m., Monday, January 4, 2010.

Wayne Smith
(Please Sign)

12/15/2009
date

WQARF process map



Jennifer Thies

From: Lagas, Phil [PLagas@brwnncald.com]
Sent: Monday, January 04, 2010 12:37 PM
To: Jennifer Thies
Cc: Julie Riemenschneider; Kevin C. Snyder; Littell, Jeff; Rakowski, Steve
Subject: Proposed Remedial Objectives for the West Van Buren WQARF Site

Jennifer:

Attached are a few additional remedial objectives for the West Van Buren WQARF site for ADEQ's consideration.

- Protect against the loss or impairment of existing municipal and irrigation uses of the groundwater resource within the West Van Buren WQARF Site. Remedial action under this objective would be required when a current use is demonstrated to be threatened or lost due to contamination caused by the release of a hazardous substance, provided the groundwater resource cannot be replaced or otherwise provided for. Remedial action would be needed for as long as, and to such extent that, the level of contamination threatens or prohibits the use of the groundwater resource.
- Ensure short-term and long-term effectiveness and viability of all remedial actions by implementing cost-effective technologies that address, but do not exceed, the specific requirements of the groundwater uses within the West Van Buren WQARF Site.

I appreciate the opportunity to provide proposed remedial objectives and look forward to reviewing the draft Remedial Objectives Report. Give me a call if you have any questions.

Phil

Philip J. Lagas, R.G.
Vice President
Brown and Caldwell
201 East Washington Street
Suite 500
Phoenix, Arizona 85004
602.567.3851 (office)
602.999.9084 (cell)
plagas@brwnncald.com



City of Phoenix
OFFICE OF ENVIRONMENTAL PROGRAMS



January 7, 2010

Ms. Julie Riemenschneider
Remedial Projects Section
Arizona Department of Environmental Quality
1110 West Washington Street
Phoenix, Arizona 85007

Re: Suggested Remedial Objectives for the West Van Buren WQARF Site

Dear Ms. Riemenschneider:

This letter is in response to ADEQ's solicitation of proposed remedial objectives for the West Van Buren WQARF site. As you know, the city of Phoenix Water Services Department supplies potable water to approximately 1.4 million people. The sources for this water are surface water from the Salt, Verde, and Colorado rivers and groundwater from wells. Groundwater, as in the past, will continue to be a vital source to meet our future water demands. Groundwater is used to provide water on a continuous basis to isolated areas within our water service area, and for backup water supplies in the event of surface water supply cutbacks due to drought, water main breaks, or water treatment plant outages. Over the next 20 to 50 years, as service area demands increase with growing population, groundwater will be relied upon more heavily on a continuous basis to provide water supplies in our service area.

One remedial objective should be for the future long-term groundwater use. The city of Phoenix requests that the aquifer be available for drinking water use, and not cause damage or harm to our future wells, and associated recharge projects. Phoenix has plans to develop a new water resource project and recharge facilities in an area within close proximity to the West Van Buren site.

Where groundwater treatment is necessary to protect future long-term groundwater use, the remedy should include measures to provide for the long-term operation and maintenance of reliable and cost-effective water treatment technologies. As an interim measure, water produced from the contaminated area during remediation that is intended for irrigation or non-potable uses should be applied, or if necessary, treated appropriately, to prevent a health risk to the end users or others with an exposure pathway to the water.

Ms. Julie Riemenschneider
January 7, 2010
Page 2

As the entity that regulates land use for the area encompassed by this site, Phoenix requests that ADEQ select remedial objectives that are supportive of unrestricted use of the land. The West Van Buren WQARF site includes residential, commercial, and industrial land uses, although the latter two are most prominent. A remedial objective for the site should be to remediate soils that would allow continuation of the current land uses.

For the volatile contaminants of concern, the remediation of groundwater and soil contamination should be to levels adequate to avoid a health risk caused by soil vapor intrusion into occupied structures. The potential for vapor intrusion should be predicted through application of peer-reviewed models and validated with field data.

The city of Phoenix would like to meet with you and your staff to discuss our plans for developing groundwater near the West Van Buren WQARF site before ADEQ finalizes the remedial objectives. Thank you for consideration of these suggestions and we look forward to future discussions.

Sincerely,



Philip McNeely, Manager
Office of Environmental Programs

Univar USA Inc.
1804 N. 20th Street
Nampa, ID 83687

T 208 888 1094
F 208 884 1602
www.univarusa.com



January 26, 2010

VIA EMAIL

Ms. Jennifer Edwards Thies, Project Manager
Arizona Department of Environmental Quality
1110 West Washington Street
Phoenix, AZ 85007

Re: Proposed Remedial Objectives
West Van Buren WQARF Site
Phoenix, AZ

Dear Ms. Thies:

Univar USA Inc. is providing the following remedial objective comments for the West Van Buren WQARF Site.

1. The remedial objectives should result in remedial actions that are reasonable, necessary and cost effective.
2. The remedial objectives should protect against actual risk to public health and the environment.
3. The remedial objectives should ensure that cost effective remedial technologies and strategies are selected to remediate contaminated groundwater to the applicable water quality standards for its current end use.

Thank you for the opportunity to provide these comments. If you have any questions related to our comments, or wish to discuss any of them in more detail, please contact me at 208/888-1094.

Sincerely,

Michael Gaudette
Senior Project Manager

cc: James Hooper, Univar, Director, Environmental Affairs (via email)
Benjamin H. Grumbles, ADEQ Director (via email)
Amanda Stone, ADEQ Director, Office of Waste Programs (via email)
Julie Riemenschneider, Manager ADEQ Remedial Project Section (via email)
Gail Clement, G.M. Clement Associates, Inc. (via email)
Joseph A. Drazek, Quarles & Brady (via email)

APPENDIX C

C RESPONSIVENESS SUMMARY TO COMMENTS RECEIVED REGARDING SOLICITED REMEDIAL OBJECTIVES

As per R18-16-406(I)(2), “during the public meeting the Department shall solicit and consider proposed remedial objectives for the site.” On December 10, 2009 ADEQ held a public meeting where two oral solicitations were provided by the public for ADEQ’s consideration. The solicitation period was held from November 30, 2009 through January 26, 2010. ADEQ requested both oral and written comments, issues and concerns during the solicitation of proposed remedial objectives for the WVBA site. ADEQ received six written solicitations for proposed remedial objectives. This responsiveness summary is being issued in conjunction with the release of the Proposed Remedial Objective Report. The Proposed Remedial Objective Report will also be made available to the public for comment. The Proposed Remedial Objectives Report considered four criteria for the development of ROs: 1) protect against the loss or impairment of the use; 2) restore, replace or otherwise provide for each use; 3) statement of when action is needed to provide for or protect against each use; and 4) how long an action is required to protect or provide for each use.

Oral Comments on Proposed Remedial Objectives Report

ADEQ received 2 comments on the proposed remedial objectives as follows:

Phil Lagas

- 1) The remedial objectives should maintain current groundwater uses.

Response: **Proposed RO:** To protect the supply of groundwater for municipal use and for the associated recharge capacity that is threatened by contamination emanating from the WVBA WQARF site. To restore, replace or otherwise provide for the groundwater supply lost due to contamination associated with the WVBA WQARF site. This action will be needed for as long as the need for the water exists, the resource remains available and the contamination associated with the WVBA WQARF site prohibits or limits groundwater use.

Jerry Worsham

- 2) The remedial objectives should be cost effective and only treat water in contaminated zones and not over-treat from zones not impacted.

Response: This comment refers to issues to be addressed in the FS process.

Written Comments on the Proposed Remedial Objectives Report

ADEQ established a 45-day comment period to receive and consider written solicitations regarding the proposed remedial objectives report. ADEQ received solicitations in writing from six parties as follows:

Lindon Park Neighborhood Association

- 1) That all ROs for this site meet the above elements by being integrated with the existing and future Motorola 52nd Street (M52) Superfund site remedies to include, but not be limited to, the list of hazardous substances that are contaminants of concern (COC) that are/will be treated at the M52 site, and the M52 treatment/clean-up standards to be met;

Response: The WVBA WQARF registry site is a separate site under separate jurisdiction from the Motorola 52nd Street CERCLA site and therefore, ROs will be established for the WVBA site. Current remedial actions taking place within the M52 site are located such that ROs for the WVBA are not expected to affect current remedial actions within the M52 site.

- 2) That any RO protect human health and the environment through the reduction/elimination of exposure to the COCs;

Response: **Proposed RO:** Protect against possible exposure to hazardous substances in surface and subsurface soils that could occur during development of property based upon applicable zoning regulations.

- 3) That community engagement and public involvement be prioritized and maximized throughout the identification, investigation, proposal and clean-up process;

Response: A Community Advisory Board (CAB) has been established to support community engagement and public involvement.

- 4) That any remedy chosen be coordinated with and integrated with the M52 Superfund site, as it appears that continuation of M52 contamination beyond the current OU3 border is/has been a contributing factor at the WVBA site as documented in the Draft Remedial Investigation Report;

Response: The WVBA WQARF registry site is a separate site under separate jurisdiction from the Motorola 52nd Street CERCLA site and therefore, ROs will be established for the WVBA site. Current remedial actions taking place within the M52 site are located such that ROs for the WVBA are not expected to affect current remedial actions within the M52 site.

- 5) That any remedy chosen take into account operation of the M52 Operable Unit 2 (OU2) treatment facility and any future treatment remedy in the M52 Operable Unit 3 (OU3) area; and

Response: The WVBA WQARF registry site is a separate site under separate jurisdiction from the Motorola 52nd Street CERCLA site and therefore, ROs will be established for the WVBA site. Current remedial actions taking place within the M52 site are located such that ROs for the WVBA are not expected to affect current remedial actions within the M52 site.

- 6) That community engagement and public involvement activities include discussion of the impact of the M52 superfund site contamination and remedies as well as the West Central Phoenix plume to fully understand the sources of contamination, source control activities,

Response: The WVBA WQARF registry site is in itself a separate site under separate jurisdiction from the Motorola 52nd Street CERCLA site and therefore, ROs will be established for the WVBA site. Current remedial actions taking place within the M52 site are located such that ROs within the WVBA site are not expected to affect current remedial actions within the M52 site.

Roosevelt Irrigation District

7) Protect human health and the environment by reducing and eventually eliminating potential exposure to hazardous substances that area contaminants of concern (COCs) in the groundwater;

Response: Data collected to date do not indicate a current risk to human health or the environment by groundwater contamination within the WVBA WQARF site. Data collection has been requested of the RID to confirm historic determinations. As soon as these data are available, ADEQ will reassess the potential for risk.

8) Restore groundwater to meet all beneficial uses including potable supply;

Response: **Proposed RO:** To protect the supply of groundwater for municipal, irrigation, and private use and for the associated recharge capacity that is threatened by contamination emanating from the WVBA WQARF site. To restore, replace or otherwise provide for the groundwater supply lost due to contamination associated with the WVBA WQARF site. This action will be needed for as long as the need for the water exists, the resource remains available and the contamination associated with the WVBA WQARF site prohibits or limits groundwater use.

9) Prevent further degradation of groundwater quality by COCs;

Response: **Proposed RO:** Protect against possible leaching of hazardous substances in surface and subsurface soils to the groundwater.

10) Minimize the relocation, transfer, and/or volatilization of COCs from groundwater to the environment;

Response: This comment refers to issues to be addressed in the FS process.

11) Restore, replace, or otherwise provide alternate water supply for all existing water supply wells that are impacted by COCs in excess of Aquifer Water Quality Standards, equivalent to the legally permitted pumping capacity of the impacted wells;

Response: **Proposed RO:** To protect the supply of groundwater for municipal, irrigation, and private use and for the associated recharge capacity that is threatened by contamination emanating from the WVBA WQARF site. To restore, replace or otherwise provide for the

groundwater supply lost due to contamination associated with the WVBA WQARF site. This action will be needed for as long as the need for the water exists, the resource remains available and the contamination associated with the WVBA WQARF site prohibits or limits groundwater use.

12) Maintain plume containment to prevent impacts to wells that are not currently impacted by COCs;

Response: **Proposed RO:** To protect, restore, replace or otherwise provide a water supply for potable use by private well owners outside the current plume boundaries of the WVBA WQARF site if the current use is impaired or lost due to contamination from the site. This RO is applicable until COP service connections can be confirmed.

13) Provide all water users a water source that meets the maximum anticipated beneficial use as drinking water;

Response: **Proposed RO:** To protect the supply of groundwater for municipal, irrigation, and private use and for the associated recharge capacity that is threatened by contamination emanating from the WVBA WQARF site. To restore, replace or otherwise provide for the groundwater supply lost due to contamination associated with the WVBA WQARF site. This action will be needed for as long as the need for the water exists, the resource remains available and the contamination associated with the WVBA WQARF site prohibits or limits groundwater use.

14) Maximize the beneficial use of the treated groundwater to support the goals and objectives of the Arizona Groundwater Management Act; and

Response: **Proposed RO:** To protect the supply of groundwater for municipal, irrigation, and domestic use and for the associated recharge capacity that is threatened by contamination emanating from the WVBA WQARF site. To restore, replace or otherwise provide for the groundwater supply lost due to contamination associated with the WVBA WQARF site. This action will be needed for as long as the need for the water exists, the resource remains available and the contamination associated with the WVBA WQARF site prohibits or limits groundwater use.

15) Provide long-term management of contaminated groundwater to improve the regional aquifer's suitability for potable use.

Response: **Proposed RO:** To protect the supply of groundwater for municipal, irrigation, and private use and for the associated recharge capacity that is threatened by contamination emanating from the WVBA WQARF site. To restore, replace or otherwise provide for the groundwater supply lost due to contamination associated with the WVBA WQARF site. This action will be needed for as long as the need for the water exists, the resource remains available and the contamination associated with the WVBA WQARF site prohibits or limits groundwater use.

Salt River Project

16) Prevent infiltration and leaching of contaminants of concern from soil to groundwater that would exceed any respective Aquifer Water Quality Standard.

Response: **Proposed RO:** Protect against possible leaching of hazardous substances in surface and subsurface soils to the groundwater.

17) Protect human health and the environment by:

- a. Efficiently capturing and controlling the plume of VOC groundwater contamination.
- b. Ensuring groundwater meets all applicable end use water quality standards

Response: **Proposed RO:** To protect the supply of groundwater for municipal use and for the associated recharge capacity that is threatened by contamination emanating from the WVBA WQARF site. To restore, replace or otherwise provide for the groundwater supply lost due to contamination associated with the WVBA WQARF site. This action will be needed for as long as the need for the water exists, the resource remains available and the contamination associated with the WVBA WQARF site prohibits or limits groundwater use.

- c. Ensuring conformance with applicable air quality regulations and standards

Response: This comment refers to issues to be addressed in the FS process.

18) Conforms to applicable federal and state water right laws and conservation requirements.

Response: **Proposed RO:** To protect the supply of groundwater for municipal, irrigation, and private use and for the associated recharge capacity that is threatened by contamination emanating from the WVBA WQARF site. To restore, replace or otherwise provide for the groundwater supply lost due to contamination associated with the WVBA WQARF site. This action will be needed for as long as the need for the water exists, the resource remains available and the contamination associated with the WVBA WQARF site prohibits or limits groundwater use.

19) Be reasonable, appropriate, and cost effective

Response: This comment refers to issues to be addressed in the FS process.

HEAD/Penn Racquet Sports

20) Provide the most cost effective solution to remediate the contamination to the appropriate water quality standard for its current use.

Response: This comment refers to issues to be addressed in the FS process.

21) Should treat the least amount or volume of water necessary to remediate the plume to the appropriate water quality standard for its current use.

Response: This comment refers to issues to be addressed in the FS process.

22) Should not pump water from wells, aquifers, or geologic zones that are not contaminated.

Response: This comment refers to issues to be addressed in the FS process.

23) Be reasonable, necessary and cost effective.

Response: This comment refers to issues to be addressed in the FS process.

24) Identify and evaluate the appropriate groundwater cleanup standards.

Response: This comment refers to issues to be addressed in the FS process.

25) Before adopting the final Remedial Objectives, ADEQ should conduct an engineering evaluation/cost analysis (EE/CA). [Note: The EE/CA is an analysis of remedial alternatives for the WVB WQARF area.]

- a. Publish a notice of availability and brief description of the EE/CA in a major local newspaper of general circulation;
- b. Provide a reasonable opportunity, not less than 30 calendar days, for submission of written and oral comments after completion of the EE/CA. Upon timely request, the ADEQ will extend the public comment period by a minimum of 15 days; and
- c. Prepare a written response to significant comments.

Response: This comment refers to issues to be addressed in the FS process.

26) Reject the use of an Early Response Action.

Response: This comment is not appropriate to the development of ROs.

Mr. Phil Lagas

27) Protect against loss or impairment of existing municipal and irrigation uses of the groundwater resource within the West Van Buren WQARF site. Remedial action under this objective would be required when a current use is demonstrated to be threatened or lost due to contamination caused by the release of a hazardous substance, provided the groundwater resource cannot be replaced or otherwise provided for. Remedial action would be needed for as long as, and to such extent that, the level of contamination threatens or prohibits the use of the groundwater resource.

Response: **Proposed RO:** To protect the supply of groundwater for municipal use and for the associated recharge capacity that is threatened by contamination emanating from the WVBA WQARF site. To restore, replace or otherwise provide for the groundwater supply lost due to contamination associated with the WVBA WQARF site. This action will be needed for as long as the need for the water exists, the resource remains available and the contamination associated with the WVBA WQARF site prohibits or limits groundwater use.

28) Ensure short-term and long-term effectiveness and viability of all remedial actions by implementing cost-effective technologies that address, but do not exceed, the specific requirements of the groundwater uses within West Van Buren WQARF site.

Response: This comment refers to issues to be addressed in the FS process.

City of Phoenix

29) One remedial objective should be for the future long-term groundwater use. The City of Phoenix requests that the aquifer be available for drinking water use, and not cause damage or harm to our future wells, and associated recharge projects.

Response: **Proposed RO:** To protect the supply of groundwater for municipal use and for the associated recharge capacity that is threatened by contamination emanating from the WVBA WQARF site. To restore, replace or otherwise provide for the groundwater supply lost due to contamination associated with the WVBA WQARF site. This action will be needed for as long as the need for the water exists, the resource remains available and the contamination associated with the WVBA WQARF site prohibits or limits groundwater use.

30) Where groundwater treatment is necessary to provide future long-term groundwater use, the remedy should include measures to provide for the long-term operation and maintenance of reliable and cost-effective water treatment technologies. As an interim measure, water produced from the contaminated area during remediation that is intended for irrigation or non-potable uses should be applied, or if necessary, treated appropriately, to prevent a health risk to the end users or others with an exposure pathway to the water.

Response: This comment refers to issues to be addressed in the FS process.

31) As the entity that regulates land use for the area encompassed by this site, Phoenix requests that ADEQ select remedial objectives that are supportive of unrestricted use of the land. The West Van Buren WQARF site includes residential, commercial, and industrial land uses, although the latter two are most prominent. A remedial objective for the site should be to remediate soils that would allow continuation of the current land uses.

Response: **Proposed RO:** Protect against possible land restrictions because of hazardous substances in surface and subsurface soils based upon applicable zoning regulations.

32) For the volatile contaminants of concern, the remediation of groundwater and soil contamination should be to levels adequate to avoid a health risk caused by soil vapor intrusion into occupied structures. The potential for vapor intrusion should be predicted through application of peer-reviewed models and validated with field data.

Response: ADEQ has no data to suggest that exposure to vapors, through vapor intrusion, poses a threat within WVBA. ADEQ has investigated and remediated source areas and continues to work with facilities where remediation is warranted to address contaminants of

concern that could be impacting the environment or threaten the public, in all environmental media.

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33) The remedial objectives should result in remedial actions that are reasonable, necessary and cost effective.

Response: This comment refers to issues to be addressed in the FS process.

34) The remedial objectives should protect against actual risk to public health and the environment.

Response: Data collected to date do not indicate a current risk to human health or the environment by groundwater contamination within the WVBA WQARF site. Data collection has been requested of the RID to confirm historic determinations. As soon as these data are available, ADEQ will reassess the potential for risk.

35) The remedial objectives should ensure that cost effective remedial technologies and strategies are selected to remediate contaminated groundwater to the applicable water quality standards for its current end use.

Response: This comment refers to issues to be addressed in the FS process.