RECLAMATION
Managing Water in the West

Draft FINDING OF NO SIGNIFICANT IMPACT

Amendment to the Meyers Groundwater Banking Exchange Agreement

FONSI-11-013

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U.S. Department of the Interior
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Introduction

In accordance with section 102(2)(c) of the National Environmental Policy Act (NEPA) of 1969, as amended, the South-Central California Area Office of the Bureau of Reclamation (Reclamation), has determined that an environmental impact statement (EIS) is not required for the amendment to the existing long-term water banking exchange program between Reclamation and Meyers Family Farm Trust's groundwater bank. This Finding of No Significant Impact (FONSI) is supported by Reclamation's Environmental Assessment (EA)-11-013, *Amendment to the Meyers Groundwater Banking Exchange Agreement*, and is hereby incorporated by reference.

Background

Meyers Family Farm Trust (Meyers Farm) has farmland located within San Luis Water District (SLWD) and an entitlement of up to 8,000 acre-feet (AF) of Central Valley Project (CVP) water from the Sacramento-San Joaquin River Delta (Delta). In order to increase reliability of the water supply and irrigate existing crops, Meyers Farm pursued development of the Meyers Farm Water Bank (Meyers Bank) to store water in above-normal and wet years for later use during below-normal, dry, and critically-dry years. The Meyers Bank is a privately-owned facility located southeast of Mendota, California, and east of the Fresno Slough in Fresno County, California.

Meyers Bank's facilities and operations are privately funded by Meyers Farm and have been upgraded and improved annually since its inception. Meyers Bank's operations are adaptively managed to improve efficiency. Key components of Meyers Bank includes a series of existing ponds, an intake pump, existing and proposed extraction wells, a solar field to power electrical pumps, and diversion channels on the east side of the Fresno Slough. Annual maintenance of the existing ponds includes removing accumulated silt as well as discing and ripping pond bottoms to promote percolation and prevent vegetation establishment. Silt removal and discing is done at a minimum once a year and ripping is done as needed in ponds that are currently used for recharge and in existing ponds that are proposed for future use.

CVP and non-CVP water is diverted and stored in the bank when available. Under the banking program, water to be banked is pumped from the Mendota Pool into five recharge ponds totaling 91 acres during the fall, winter, and spring and is allowed to infiltrate to the shallow aquifer for underground storage. Depending on need, returned water is extracted from up to seven extraction wells located west and north of the recharge ponds and pumped into Mendota Pool. The water is then exchanged via agreement with Reclamation for CVP water delivered via the San Luis Canal for irrigation of lands farmed by Meyers Farm in SLWD.

Proposed Action

Reclamation will amend the existing long-term water banking exchange program to increase the annual rate of extraction from 6,316 AF to 10,526 AF, increase the cumulative total amount of CVP water banked in Meyers Bank at any given time from 35,000 AF to 60,000 AF, increase the amount of Banta Carbona Irrigation District's (BCID's) non-CVP water conveyed in the Delta-Mendota Canal for banking from 5,000 AFY to 10,000 AFY, to approve the annual transfer of

up to 10,000 AFY of BCID's CVP water in-lieu of their non-CVP water for banking at Meyers Bank and to include the delivery of banked water via the existing exchange program to other lands within the service area of SLWD.

The Proposed Action is subject to the following conditions:

- The water would only be used for beneficial purposes and in accordance with Federal Reclamation law and guidelines.
- The water would not be used to place untilled or new lands into production, or to convert undeveloped land to other uses.
- The Proposed Action would not affect CVP or State Water Project operations; all supplies would be previously scheduled for delivery points south-of-Delta, and do not require additional Delta exports.
- The movement of the water would not require the construction of any new water diversion or conveyance facilities.
- The Proposed Action must comply with water quality standards specified in Exhibit C of the Exchange Contract (see Appendix B in EA-11-013).
- Selenium concentrations within the Mendota Pool would not exceed two parts per billion.

Reclamation's finding that implementation of the Proposed Action will result in no significant impact to the quality of the human environment is supported by the following findings:

Findings

Surface Water Resources

Delivery of surface water to be banked at Meyers Bank will continue to occur in the same manner as previously analyzed and will not change from baseline conditions. Banked water will continue to be returned to Meyers Farm's lands in SLWD via the existing exchange program. In addition, other lands within the service area of SLWD will also be able to receive banked water from Meyers Bank via the existing exchange agreement. The amendment to the existing exchange agreement will provide Meyers Farm and SLWD with additional water supplies to meet their water demands during dry or critically dry years. Up to 10,000 AFY of BCID's non-CVP surface water could be conveyed within the Delta-Mendota Canal through February 2033 for banking within Meyers Bank. Reclamation's water quality standards for introduction of non-CVP water into federal facilities (see Appendix B in EA-11-013) will be implemented to prevent water quality impacts. Depending on timing, BCID may provide up to 10,000 AFY of their CVP supply in lieu of their non-CVP supply to Meyers Bank for banking. Banked CVP water will be used in the same manner as BCID's banked non-CVP water. As this will be in lieu of their non-CVP water supply, BCID's overall available water supply will not be impacted.

No natural streams or water courses will be affected by delivery of water for banking as water will be moved through existing facilities to Meyers Bank. In addition, modification of the facilities within Meyers Bank will occur within the existing bank features as shown in Figure 2-1 of EA-11-013 and will not impact natural streams or water courses. There will be no impacts to CVP or State Water Project facilities or water deliveries as water under the Proposed Action

must be scheduled and approved by Reclamation and the California Department of Water Resources.

Extraction of water from Meyers Bank could have water quality impacts in Mendota Pool; however, Meyers Bank must meet established criteria as described in Appendix B of EA-11-013 which will minimize water quality impacts. Water quality monitoring will continue as described in FONSI/EA-05-09.

Groundwater Resources

Under the Proposed Action, banked water extraction rates will increase from 6,316 AFY to 10,526 AFY and the cumulative total amount of CVP water banked in Meyers Bank at any given time will increase from 35,000 AF to 60,000 AF. Extraction of banked water will likely be similar to what has been done in the past, although extracted water will also be delivered to lands owned by other SLWD members. As groundwater is generally not used to meet demands in most of SLWD, this is not expected to impact groundwater resources by offsetting pumping within that area. However, there may be a slight increase in groundwater recharge due to the importation of additional surface water.

Annual extractions of banked water will be from shallow wells that will not likely cause further subsidence as described in FONSI/EA-05-09. Monitoring of groundwater levels to prevent impacts to Mendota Pool will continue. Meyer's Banking operations were evaluated in FONSI/EA-05-09 and were found not to be a significant impact to water resources. It is expected that there will be slight beneficial impacts to water levels overtime as five percent of the increased amount of banked water will be left within Meyers Bank for recharge of the aquifer. Water quality in the bank will continue to fluctuate, depending on the source of water brought in for banking, but is expected to improve overtime, similar to the No Action Alternative. As Meyers Bank will continue to operate as analyzed in FONSI/EA-05-09, including implementing all environmental commitments, the Proposed Action is not expected to have adverse impacts to groundwater resources.

Land Use

Under the Proposed Action, neither Meyers Farm nor SLWD will change historic land and water management practices. Water from Meyers Bank will move through existing facilities for delivery to lands within SLWD, including Meyers Farm's lands, and will be used on existing crops. The water will not be used to place untilled or new lands into production, or to convert undeveloped land to other uses. Therefore, there will be no change to land use. Expansion of Meyers Bank as described in Section 2.2.1 of EA-11-013 will be consistent with the current zoning and will have no impact on land use.

Biological Resources

Under the Proposed Action Alternative, as with the No Action Alternative, San Joaquin kit fox will continue to potentially use agricultural lands for foraging, and western yellow-billed cuckoos may fly over the area. Those two species will not be affected at all. The giant garter snake will be subject to insignificant water quality effects and minor effects from ground disturbance as a result of the Proposed Action. The protective measures contained in the project description above serve to reduce the effects. Reclamation will conduct an informal consultation

with the Service for the Proposed Action. The EA will not be finalized until consultation is complete.

Cultural Resources

The Proposed Action includes: increasing the rate of water extraction from the Meyers Water Bank from 6,316 AFY to 10,526 AFY; amending the cumulative total amount of CVP water baked from 35,000 AF to 60,000 AF; increasing the amount of BCID water conveyed in the Delta-Mendota Canal from 5,000 AFY to 10,000 AFY; and allowing the delivery of banked water via exchanges to other areas within the SLWD service area. All of these actions will be completed via existing water conveyance, banking, and extraction facilities, or occur in areas disturbed by construction of the existing recharge ponds; therefore, the Proposed Action does not have the potential to affect historic properties pursuant to the regulations at 36 CFR Part 800.3(a)(1).

Indian Sacred Sites

The Proposed Action will not limit access to and ceremonial use of Indian sacred sites on Federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites. There will be no impacts to Indian Sacred Sites as a result of the Proposed Action.

Indian Trust Assets

The Proposed Action will not impact Indian Trust Assets are there are none in the Proposed Action area. The nearest Indian Trust Asset is Table Mountain Rancheria located approximately 42 miles northeast of the Proposed Action area.

Environmental Justice

The Proposed Action will not cause dislocation, changes in employment, or increase flood, drought, or disease and will not disproportionately impact economically disadvantaged or minority populations.

Socioeconomic Resources

The ability to bank or recharge any groundwater within this area from surplus surface water supplies will increase water supply reliability which could be used to help meet summertime peak demands, thereby, improving the viability of farm labor jobs. The increased water supply reliability will have beneficial impacts on socioeconomic resources for Meyers Farm and SLWD as this water will be used to help sustain existing crops.

Air Quality

Similar to the No Action Alternative, air quality impacts due to dust generation and equipment emissions from annual operation and maintenance and proposed upgrades and improvements will be localized and temporary. Meyers Bank will continue to comply with the San Joaquin Valley Air Pollution Control District's Regulation VIII to reduce air quality impacts from PM_{10}. Extraction of banked water will occur from the existing wells and from up to three new wells. All well pumps will be powered by electricity offset by solar panels previously installed by Meyers Bank. Generation of electricity is part of the existing conditions and will not change under the Proposed Action.

Global Climate

CVP water allocations are made dependent on hydrologic conditions and environmental requirements. Since Reclamation operations and allocations are flexible, any changes in hydrologic conditions due to global climate change will be addressed within Reclamation's operation flexibility and therefore water resource changes due to climate change will be the same with or without the Proposed Action.

Cumulative Impacts

Cumulative impacts result from incremental impacts of the Proposed Action or No Action alternative when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. To determine whether cumulatively significant impacts are anticipated from the Proposed Action or the No Action alternative, the incremental effect of both alternatives were examined together with impacts from past, present, and reasonably foreseeable future actions in the same geographic area.

Existing or foreseeable projects that could affect or could be affected by the Proposed Action or No Action alternative include the following:

Mendota Pool Group Exchange Program The Mendota Pool Group (MPG) is comprised of an unincorporated association of farmers that own approximately 50,000 acres of historically irrigated farmland in Westlands Water District (WWD) and SLWD. The MPG members have wells located near the Mendota Pool and in Farmers Water District. The MPG program involves a 10-year (through February 2015) exchange agreement between Reclamation whereby the members of the MPG can deliver up to 25,000 AFY of groundwater into the Mendota Pool in exchange for CVP irrigation water delivered to the San Luis Canal for use by MPG farmers in SLWD and WWD. Reclamation and the MPG prepared an Environmental Impact Statement (EIS) for the 10 year program, and a Record of Decision (ROD) was completed March 30, 2005. The 10-year exchange agreement was anticipated to have less-than-significant effects on the majority of resource areas considered in the analysis. The primary adverse effect of the action was to increase the cumulative rate of groundwater degradation in wells west of the Mendota Pool, primarily MPG wells. The degradation of groundwater quality was not anticipated to result in significant effects on surface water quality because of the adaptive management of surface water quality using modeling to forecast potential effects. Mitigation actions that addressed potential impacts of the exchange program were included in the EIS and incorporated into the exchange agreement. These mitigation actions include a baseline pumping program, design constraints, a monitoring program, and adaptive management.

Exchange Contractors 25-Year Water Transfer Program The San Joaquin River Water Authority Exchange Contractors (Exchange Contractors) are currently transferring up to 130,000 AF of their substitute water to Reclamation under a 10-year (March 1, 2005, through February 28, 2014) water transfer program. Under the current program, the Exchange Contractors develop sources of water to temporarily reduce the need for delivery of substitute water by Reclamation. The sources of water developed by the Exchange Contractors include a maximum of 80,000 AF from conservation, tailwater recapture, and groundwater as well as a maximum of 50,000 AF

from voluntary temporary land fallowing. For each acre-foot of water developed by the Exchange Contractors, an in-kind amount of water is considered acquired and left within the CVP for Reclamation to deliver to CVP contractors or wildlife areas. Reclamation and the Exchange Contractors prepared an EIS/Environmental Impact Report (EIR) for the 10-year program and a ROD was completed March 23, 2005. As the program will expire soon, Reclamation and the Exchange Contractors have proposed extending the program for another 25 years. A draft EIS/EIR was released for a 60 day public review on May 4, 2012.

San Joaquin River Restoration Program In 2006, the San Joaquin River Restoration Program (SJRRP) was established to implement the Stipulation of Settlement in *NRDC, et al. v. Kirk Rodgers et al.* The Settlement's two primary goals include: (1) restoration and maintenance of fish population in the San Joaquin River below Friant Dam to the confluence of the Merced River; and (2) management of water resources in order to reduce or avoid adverse water supply impacts to Friant Division long-term contractors. The SJRRP is a long-term effort to restore flows to the San Joaquin River from Friant Dam to the confluence of the Merced River in order to meet the two goals established in the Settlement. In 2007, Reclamation released a notice of intent to prepare a programmatic EIS/EIR in the Federal Register. The draft programmatic EIS/EIR was released for a 60 day public review on April 22, 2011. A final programmatic EIS/EIR is pending.

As an initial action to guide implementation of the SJRRP, the Settlement requires that Reclamation modify releases from Friant Dam from October 1 to September 30 for a program of interim flows in order to collect pertinent scientific data and to implement a monitoring program. Environmental effects from the release of interim flows from Friant Dam down the San Joaquin River were addressed in a FONSI and EA/Initial Study entitled *Water Year 2010 Interim Flows Project*. Supplemental EAs and FONSIs for continuation of interim flows were also completed for Water Years 2011 and 2012 (October 1, 2011 through September 30, 2013). Full restoration flows are scheduled to start no later than January 1, 2014.

In order to reduce or avoid adverse water supply impacts to all of the Friant Division long-term contractors that may result from the interim flows, Reclamation developed plans for recirculation, recapture, reuse, and exchange or transfer of interim flows. An EA that analyzed the impacts of recirculation of interim flows entitled *Recirculation of Recaptured Water Year 2012 San Joaquin River Restoration Program Interim Flows* was released for public comment on February 7, 2012 and a FONSI completed on April 3, 2012.

Tranquillity Irrigation District Transfer to San Luis Water District Under this project, Tranquillity Irrigation District could transfer up to 15,000 AF of its pumped groundwater to SLWD via exchange with Reclamation at the Mendota Pool from March 1, 2011 through February 28, 2014 (Contract Years 2011 through 2013). Transfer in any single water year will not exceed 7,500 AF. The project was analyzed in EA-10-092 *Tranquillity Irrigation District/ San Luis Water District Groundwater Transfer/Exchange Program–2011 through 2013* and a FONSI completed on March 11, 2011.

Conveyance of Kings River Flood Flows to Westlands Water District Under this project, WWD could convey up to 50,000 AF of Kings River flood flows in the San Luis Canal from

January 1, 2012 through December 31, 2016. The project was analyzed in EA-11-002 *Westlands Water District – Warren Act Contract for Conveyance of Kings River Flood Flows in the San Luis Canal* and a FONSI signed January 26, 2012.

Groundwater Pump-in Programs for San Luis Unit and Delta Division Contractors Under this project, participating CVP contractors within the Delta Division and San Luis Unit of the CVP could pump up to 50,000 AF total of groundwater into the Delta-Mendota Canal between March 1, 2012 through February 28, 2014 (Contract Years 2012 and 2013). The project was analyzed in EA-12-005 *Two-Year Exchange Agreements and/or Warren Act Contracts for Conveyance of Groundwater in the Delta-Mendota Canal – Contract Years 2012 through 2014 (March 1, 2012 – February 28, 2014)* and a FONSI was completed on May 8, 2012 (Reclamation 2012d). The action was previously conducted between March 1, 2010 through February 28, 2012 (Contract Years 2010 and 2011) and analyzed in EA-09-169. It is likely that these actions will be requested in the future.

Byron-Bethany Irrigation District Long-term Exchange Agreement Reclamation has received a request from Byron Bethany Irrigation District to enter into a 40-year contract for the introduction of up to 4,725 AFY of their non-CVP surface water in to the Delta-Mendota Canal for exchange with Reclamation. Reclamation is currently preparing an EA for the proposed project.

Donald J. Peracchi and affiliates Exchange Program Reclamation has received a request from Donald J. Perachhi and affiliates to approve a series of exchange agreements with Donald J. Peracchi and his affiliates through February 2015 for their portion of groundwater pumped by Farmers Water District. This is the same amount of water previously included under the MPG exchange program; therefore, no additional groundwater will need to be pumped for the Proposed Action and there will be no additional cumulative impacts to water resources beyond what was previously analyzed in EIS-01-81. Reclamation is currently preparing an EA for the proposed project.

Surface Water Resources As in the past, hydrological conditions and other factors are likely to result in fluctuating water supplies which drive requests for water service actions. Water districts aim to provide water to their customers based on available water supplies and timing, while attempting to minimize costs. Farmers irrigate and grow crops based on these conditions and factors, and a myriad of water service actions are approved and executed each year to facilitate water needs. Each water service transaction involving Reclamation undergoes environmental review prior to approval.

Water service actions, like those described above, do not result in increases or decreases of water diverted from rivers or reservoirs. Each water service transaction involving CVP and non-CVP water undergoes environmental review prior to approval. The Proposed Action and No Action alternative and other similar projects will not interfere with the projects listed above, nor will they hinder the normal operations of the CVP and Reclamation's obligation to deliver water to its contractors or to local fish and wildlife habitat. Neither alternative, when added to other water service actions, will result in cumulative effects to surface water resources beyond historical fluctuations and conditions.

Groundwater Resources The impact of the proposed extraction facilities was evaluated in FONSI/EA-05-09 and found that overdraft was not occurring within the vicinity of the bank but was occurring northeast of the bank in Madera County and some within Fresno Water District. A small amount of subsidence was also reported at the Yearout Extensometer between Meyers Bank and Farmers Water District (Reclamation 2005). However, recharge activities have been occurring at Meyers Bank since its inception in 2001 with a net increase in groundwater levels of over 30 feet beneath the recharge ponds (Meyers Farms 2011). The net result of implementation of the Proposed Action will be to improve groundwater levels by bringing more water into the groundwater basin. The No Action Alternative will have similar but reduced effect.

Biological Resources The current distribution and abundance of the giant garter snake is much reduced from previous years. Less than 10 percent, or approximately 319,000 acres (129,000 hectares), of the historic 4.5 million acres (1.8 million hectares) of Central Valley wetlands remain, and little of this provides habitat suitable for the giant garter snake. Loss of habitat due to agricultural activities and flood control have apparently extirpated the snake from the southern one-third of its range in former wetlands associated with the historic Buena Vista, Tulare, and Kern lakebeds. These lakebeds once supported vast expanses of ideal snake habitat, consisting of cattail and bulrush dominated marshes. Valley flood wetlands are now subject to cumulative effects of upstream watershed modifications, water storage and diversion projects, as well as urban and agricultural development. Water quality issues continue to impact the giant garter snake in the San Joaquin Valley, where the species is quite rare; these effects include those previously addressed by Reclamation in a formal consultation with the U.S. Fish and Wildlife Service in 2010 on the Grassland Bypass project.

Socioeconomic Resources The Proposed Action will have slight beneficial impacts on socioeconomics by sustaining existing crop lands and maintaining economic stability within Meyers Farm and SLWD. It will not increase crop lands or change the existing economic conditions within either district beyond maintaining economic stability within the region and therefore will not contribute to cumulative effects on such resources. The No Action Alternative will likely have the opposite effect as additional water supplies may need to be purchased on the open market in order for SLWD to make up for shortages during water shortage years.

Air Quality Impacts to air quality resulting from either alternative will be temporary and minimized through compliance with SJVAPCD's Regulation VIII; therefore, there will be no cumulative adverse impacts to air quality as a result of either alternative.

As the Proposed Action will not result in any direct or indirect impacts on land use, cultural resources, Indian Sacred Sites, Indian Trust Assets, economically disadvantage or minority populations, or global climate, it will not contribute cumulatively to impacts on these resources.

RECLAMATION

Managing Water in the West

Draft Environmental Assessment

Amendment to the Meyers Groundwater Banking Exchange Agreement

EA-11-013

U.S. Department of the Interior
Bureau of Reclamation
Mid Pacific Region
South-Central California Area Office
Fresno, California

July 2012

Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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Appendix A Evaluation of Proposed Expansion of Meyers Bank
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List of Acronyms and Abbreviations

AF	Acre-feet
AFY	Acre-feet per year
BCID	Banta-Carbona Irrigation District
CCID	Central California Irrigation District
CVP	Central Valley Project
CWA	Clean Water Act
Delta	Sacramento-San Joaquin River Delta
DWR	California Department of Water Resources
EA	Environmental Assessment
EC	Electrical Conductivity
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
Exchange Contractors	San Joaquin River Exchange Contractors Water Authority
FONSI	Finding of No Significant Impact
FWCA	Fish and Wildlife Coordination Act
ITA	Indian Trust Asset
Meyers Bank	Meyers Farm Water Bank
Meyers Farm	Meyers Family Farm Trust
mg/L	Milligram per liter
MPG	Mendota Pool Group
NHPA	National Historic Preservation Act
O&M	Operation and Maintenance
$PM_{2.5}$	Particulate matter less than 2.5 microns in diameter
PM_{10}	Particulate matter between 2.5 and 10 microns in diameter
ppb	Parts per billion
Reclamation	Bureau of Reclamation
ROD	Record of Decision
SEA	Supplemental Environmental Assessment
Service	U.S. Fish and Wildlife Service
SJRRP	San Joaquin River Restoration Program
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SLWD	San Luis Water District
SOD	South-of-Delta
TDS	Total Dissolved Solids
TMDLs	Total Maximum Daily Loads
WWD	Westlands Water District

Section 1 Introduction

1.1 Background

Meyers Family Farm Trust (Meyers Farm) has farmland located within San Luis Water District (SLWD) and an entitlement of up to 8,000 acre-feet (AF) of Central Valley Project (CVP) water from the Sacramento-San Joaquin River Delta (Delta). In order to increase reliability of the water supply and irrigate existing crops, Meyers Farm pursued development of the Meyers Farm Water Bank (Meyers Bank) to store water in above-normal and wet years for later use during below-normal, dry, and critically-dry years. The Meyers Bank is a privately-owned facility located southeast of Mendota, California, and east of the Fresno Slough in Fresno County, California (Figure 1-1).

Meyers Bank's facilities and operations are privately funded by Meyers Farm and have been upgraded and improved annually since its inception. Meyers Bank's operations are adaptively managed to improve efficiency. Key components of Meyers Bank includes a series of existing ponds, an intake pump, existing and proposed extraction wells, a solar field to power electrical pumps, and diversion channel on the east side of the Fresno Slough. Annual maintenance of the existing ponds includes removing accumulated silt as well as discing and ripping pond bottoms to promote percolation and prevent vegetation establishment. Silt removal and discing is done at a minimum once a year and ripping is done as needed in ponds that are currently used for recharge and in existing ponds that are proposed for future use.

CVP and non-CVP water is diverted and stored in the bank when available. Under the banking program, water to be banked is pumped from the Mendota Pool into five recharge ponds totaling 91 acres during the fall, winter, and spring and is allowed to infiltrate to the shallow aquifer for underground storage. Depending on need, returned water is extracted from up to seven extraction wells located west and north of the recharge ponds and pumped into Mendota Pool. The water is then exchanged via agreement with the Bureau of Reclamation (Reclamation) for CVP water delivered via the San Luis Canal for irrigation of lands farmed by Meyers Farm in SLWD.

Reclamation prepared an Environmental Assessment (EA)-05-09, *Meyers Farm Water Banking Project – Mendota, California*, which analyzed the environmental impacts of storage of Meyers Farm's CVP water outside the SLWD service area within the Meyers Bank for later extraction and use on Meyers Farm's agricultural lands within SLWD over a 22 year period. A Finding of No Significant Impact (FONSI) was signed on May 9, 2005. FONSI/EA-05-09 also analyzed the utilization of exchange agreements with Reclamation for the extracted water, including both CVP and non-CVP, to be returned to Meyers Farm's lands within SLWD. Both FONSI and EA are hereby incorporated by reference (Reclamation 2005a).

Subsequently, Reclamation received a request from Meyers Farm to increase their annual maximum extraction rate. Reclamation prepared a supplemental EA (SEA)-07-102, *2007 Supplement to Meyers Farm Water Banking Project EA, Mendota, CA*, to consider the

environmental effects of approving an increase of maximum annual extraction from 5,000 AF per year (AFY) to 6,316 AFY and an extension of the timeline for extraction from four months (May 1 to August 31) to five and a half months (April 15 to September 30). A FONSI was signed on November 9, 2007, and both SEA and FONSI are hereby incorporated by reference (Reclamation 2007).

In 2009, Reclamation received a request from Meyers Farm to approve the conveyance of Banta Carbona Irrigation District (BCID) non-CVP surface water through the Delta-Mendota Canal for banking at Meyers Bank. Reclamation prepared SEA-09-062, *Meyers Farm Water Banking Project Addition of Banta Carbona Irrigation District Supplies*, which analyzed the execution of a series of 22 one-year temporary Warren Act contracts (term of Meyers Farm's exchange contract with Reclamation) and the annual banking, extraction, and exchange of up to 5,000 AF of BCID's non-CVP water supplies for use on Meyers Farm lands within SLWD. A FONSI was signed on October 5, 2009, and both SEA and FONSI are hereby incorporated by reference (Reclamation 2009a).

Reclamation has recently received a request to increase the rate of extraction from Meyers Bank from 6,316 AFY to 10,526 AFY, to amend the cumulative total amount of CVP water banked from 35,000 AF to 60,000 AF at any given time, to increase the amount of BCID's non-CVP water conveyed in the Delta-Mendota Canal for banking from 5,000 AFY to 10,000 AFY, to approve the annual transfer of up to 10,000 AFY of BCID's CVP water in-lieu of their non-CVP water for banking at Meyers Bank, and to deliver banked water via exchange to other areas within the service area of SLWD.

1.2 Purpose and Need

Meyers Farm and other contractors within the SLWD service area need a reliable water supply to sustain agricultural operations, especially permanent crops, during water short years. Groundwater banking is an acceptable water management tool and increases the reliability of a water supply for permanent crops. Banking water for later extraction and use enables SLWD contractors, including Meyers Farm, to invest in permanent crops by assuring an irrigation supply in water short years.

The purpose of the Proposed Action is to increase the reliability of existing water supplies for Meyers Farm and other contractors located within SLWD.

1.3 Scope

This EA is being prepared to examine the possible effects of amending Meyers Farm's existing long-term (through February 2033) water banking program to increase the cumulative total amount of CVP water banked in Meyers Bank at any given time from 35,000 AF to 60,000 AF, increase the amount of BCID's non-CVP water conveyed in the Delta-Mendota Canal for banking from 5,000 AFY to 10,000 AFY, to approve the annual transfer of up to 10,000 AFY of BCID's CVP water in-lieu of their non-CVP water for banking and to include the delivery of banked water via the existing exchange program to other lands within the service area of San Luis Water District.

This EA has also been prepared to examine the possible effects of the No Action Alternative.

1.4 Resources Eliminated from Further Analysis

Reclamation analyzed the affected environment of the Proposed Action and No Action Alternative and has determined that there is no potential for direct, indirect, or cumulative effects to the following resources:

Cultural Resources

There would be no impact to cultural resources under the No Action alternative as conditions would remain the same as existing conditions. The Proposed Action includes: increasing the rate of water extraction from the Meyers Water Bank from 6,316 AFY to 10,526 AFY; amending the cumulative total amount of CVP water baked from 35,000 AF to 60,000 AF; increasing the amount of BCID water conveyed in the Delta-Mendota Canal from 5,000 AFY to 10,000 AFY; and allowing the delivery of banked water via exchanges to other areas within the SLWD service area. All of these actions would be completed via existing water conveyance, banking, and extraction facilities, or occur in areas disturbed by construction of the existing recharge ponds; therefore, the Proposed Action does not have the potential to affect historic properties pursuant to the regulations at 36 CFR Part 800.3(a)(1).

Environmental Justice

No impact to economically disadvantaged or minority populations would occur under the No Action alternative as conditions would remain the same as existing conditions. The Proposed Action would not cause dislocation, changes in employment, or increase flood, drought, or disease and would not disproportionately impact economically disadvantaged or minority populations.

Global Climate

No impact to global climate change would occur under the No Action alternative as conditions would remain the same as existing conditions. CVP water allocations are made dependent on hydrologic conditions and environmental requirements. Since Reclamation operations and allocations are flexible, any changes in hydrologic conditions due to global climate change would be addressed within Reclamation's operation flexibility and therefore water resource changes due to climate change would be the same with or without the Proposed Action.

Indian Sacred Sites

No impact to Indian Sacred Sites would occur under the No Action alternative as conditions would remain the same as existing conditions. The Proposed Action would not limit access to and ceremonial use of Indian sacred sites on Federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites. There would be no impacts to Indian Sacred Sites as a result of the Proposed Action.

Indian Trust Assets

No impact to Indian Trust Assets (ITA) would occur under the No Action alternative as conditions would remain the same as existing conditions. The Proposed Action would not

impact ITA are there are none in the Proposed Action area. The nearest ITA is Table Mountain Rancheria located approximately 42 miles northeast of the Proposed Action area.

Land Use

There would be no impact to land use under the No Action alternative as conditions would remain the same as existing conditions. Under the Proposed Action, neither Meyers Farm nor SLWD would change historic land and water management practices. Water from Meyers Bank would move through existing facilities for delivery to lands within SLWD, including Meyers Farm's lands, and would be used on existing crops. The water would not be used to place untilled or new lands into production, or to convert undeveloped land to other uses. Therefore, there would be no change to land use. Expansion of Meyers Bank as described in Section 2.2.1 would be consistent with the current zoning and would have no impact on land use.

As there would be no impact to the resources listed above as a result of the Proposed Action or the No Action alternative, they will not be considered further.

1.5 Resources Requiring Further Analysis

This EA will analyze the affected environment of the Proposed Action and No Action Alternative in order to determine the potential direct, indirect, and cumulative effects to the following resources:

- Surface Water Resources
- Groundwater Resources
- Biological Resources
- Socioeconomic Resources
- Air Quality

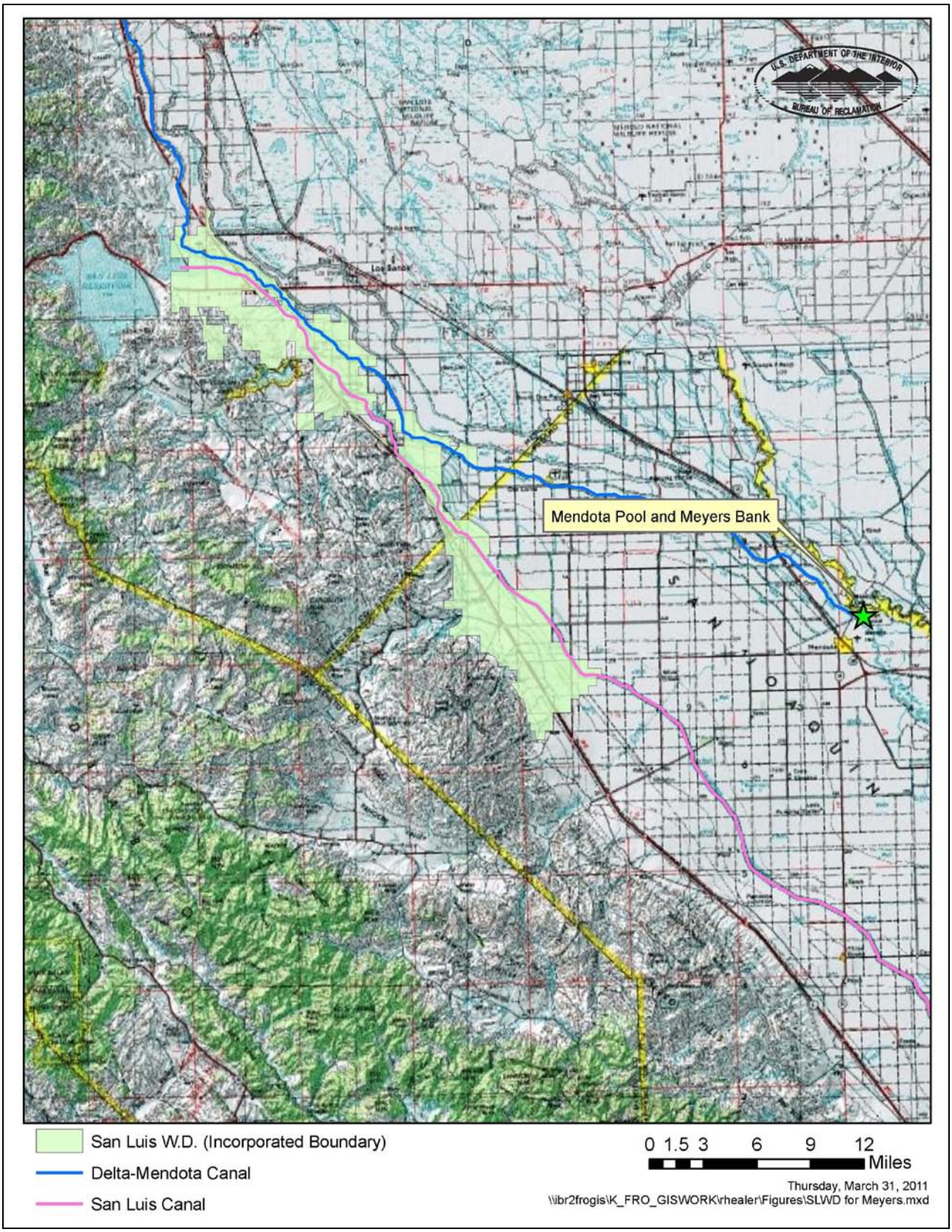

Figure 1-1 Proposed Action Location Map

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Section 2 Alternatives Including the Proposed Action

This EA considers two possible actions: the No Action Alternative and the Proposed Action. The No Action Alternative reflects future conditions without the Proposed Action and serves as a basis of comparison for determining potential effects to the human environment.

2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not amend Meyers Farm's existing long-term water banking exchange program at Meyers Bank to increase the rate of extraction, to increase the cumulative total amount of CVP water banked in Meyers Bank at any given time, or to deliver previously banked water to additional lands within SLWD. Reclamation would not approve the annual transfer of BCID's CVP water for banking at Meyers Bank nor would they issue Warren Act contracts for conveyance of BCID's non-CVP water in the Delta-Mendota Canal through February 2033. Meyers Farm would continue to engage in their existing banking opportunities and exchanges in order to maximize management of its water supply within the facilities available to them in Meyers Bank. They would also continue to upgrade and improve annually as they have in the past.

2.2 Proposed Action

2.2.1 Exchange Program Amendments

Reclamation proposes to amend the existing long-term water banking exchange program to increase the annual rate of extraction from 6,316 AF to 10,526 AF, increase the cumulative total amount of CVP water banked in Meyers Bank at any given time from 35,000 AF to 60,000 AF, and to include the delivery of banked water via the existing exchange program to other lands within the service area of SLWD.

Exchange of Banked Water

Exchange of banked water from Meyers Bank would be done in the same manner as described in EA-05-09. Five percent of the banked water would be left in the aquifer to increase groundwater levels and improve groundwater quality in the vicinity of Meyers Bank. Extraction of banked water would be done by electric pumps at some or all of the seven extraction wells within Meyers Bank. This water would be pumped back into the Mendota Pool to be used by Reclamation to meet contractor demands at the Mendota Pool, minus a five percent loss at the Mendota Pool for conveyance of the banked water. A like amount of water, less the ten percent loss at the aquifer and Mendota Pool, would be made available from San Luis Reservoir and conveyed via the San Luis Canal for delivery to SLWD for use on lands within SLWD (Figure 1-1). Annual extraction amounts would be limited to 10,526 AFY.

2.2.2 Banking of Banta-Carbona Irrigation District's Non-CVP Water

Reclamation proposes to issue a series of five-year Warren Act contracts to Meyers Farm for conveyance of up to 10,000 AFY of BCID's non-CVP surface water within the Delta-Mendota Canal through February 2033 for banking within Meyers Bank.

Under the Proposed Action, BCID's pre-1914 San Joaquin River water would be delivered in the same manner as previously analyzed in SEA-09-062 which would entail conveyance of non-CVP water from the Delta-Mendota Canal at milepost 20.42L to the Mendota Pool where it would be lifted by electric pump and delivered via gravity to Meyers Bank. Five percent of the non-CVP water conveyed in the Delta-Mendota Canal to the Meyers Bank would be lost to conveyance losses and an additional five percent of the water banked would be left in Meyers Bank to maintain groundwater recharge.

2.2.3 Transfer of Banta-Carbona Irrigation District's CVP Water to Meyers Bank

Reclamation proposes to approve the annual transfer of up to 10,000 AF of BCID's CVP water for banking in Meyers Bank. Any transferred CVP water would be in-lieu of BCID's non-CVP water. Delivery of the transferred water to Meyers Bank would require delivery of the water to Mendota Pool via the Delta-Mendota Canal. At the Mendota Pool this water would be lifted by electric pump and delivered via gravity to Meyers Bank. Five percent of the CVP water would be lost to conveyance losses at the Mendota Pool and an additional five percent of the water banked would be left in Meyers Bank to maintain groundwater recharge. Banked water would later be exchanged with Reclamation under the exchange program.

2.2.4 Environmental Commitments

The Proposed Action is subject to the following conditions:

- The water would only be used for beneficial purposes and in accordance with Federal Reclamation law and guidelines.
- The water would not be used to place untilled or new lands into production, or to convert undeveloped land to other uses.
- The Proposed Action would not affect CVP or State Water Project operations; all supplies would be previously scheduled for delivery points south-of-Delta, and do not require additional Delta exports.
- The movement of the water would not require the construction of any new water diversion or conveyance facilities.
- The Proposed Action must comply with water quality standards specified in Exhibit C of the Exchange Contract (see Appendix B).
- Selenium concentrations within the Mendota Pool would not exceed two parts per billion (ppb).

2.2.5 Meyers Bank Modifications

As described in Section 1, Meyers Bank is a privately funded facility which has been upgraded and improved annually since its inception and is adaptively managed to improve efficiency. Annual maintenance of the existing ponds includes removing accumulated silt as well as discing and ripping pond bottoms to promote percolation and prevent vegetation establishment. Discing is done at a minimum once a year and ripping is done as needed. The proposed expansion of

Meyers Bank was analyzed in EA-05-09 and included additions of up to five extraction wells (above the original six proposed in EA-05-09), construction of a new pond, and the inclusion of existing ponds for future use in the banking program. These ponds, as well as others not proposed for future use, were used previously by Spreckels Sugar Company for discharge of water during sugar processing and have since been used for placement of spoil materials.

The existing ponds proposed for incorporation into the water bank include Ponds 3A to 3E and Ponds 4A and 4B shown in Figure 2-1 and the Meyers Bank Facilities map in Appendix A. These ponds would require the following preparations prior to use:

- Previously deposited spoil material would be removed from all of the existing ponds proposed for inclusion. The removed material would remain on the Spreckels property, but not on property owned by Meyers Bank.
- Dirt islands within Ponds 3A to 3E would be removed and pond bottoms would be leveled and brought even with Pond 3.
- Levee banks for Ponds 3A to 3E would be groomed and sloped with a goal of 3 to 1 and lined with material that is used throughout the banking project facilities to prevent erosion.
- Pond 4A would be lined on the west bank (closest to Pond 4) to avoid future erosion.
- One to two pipelines with head gates would be installed within the levees between all of the ponds for water movement. The pipelines would be 36 inches in diameter and made of ABS material. Pipeline lengths would vary depending on the size of the levee.

Up to three extraction wells would be installed at Meyers Bank (see Facilities map in Appendix A for approximate locations). Extraction wells would be similar to the seven existing extraction wells. Each well would be approximately 140 feet deep and screened from 45 to 130 feet below ground surface (an 85-foot interval), with a 10-foot sump at the bottom. They would be constructed using 17-inch diameter polyvinyl chloride well casing and screen. The capacities of the new extraction wells would be similar to existing wells, which range from about 1,000 to 1,700 gallons per minute. Extracted water would be moved through above-ground pipelines utilizing the shortest distance necessary for return to the Mendota Pool.

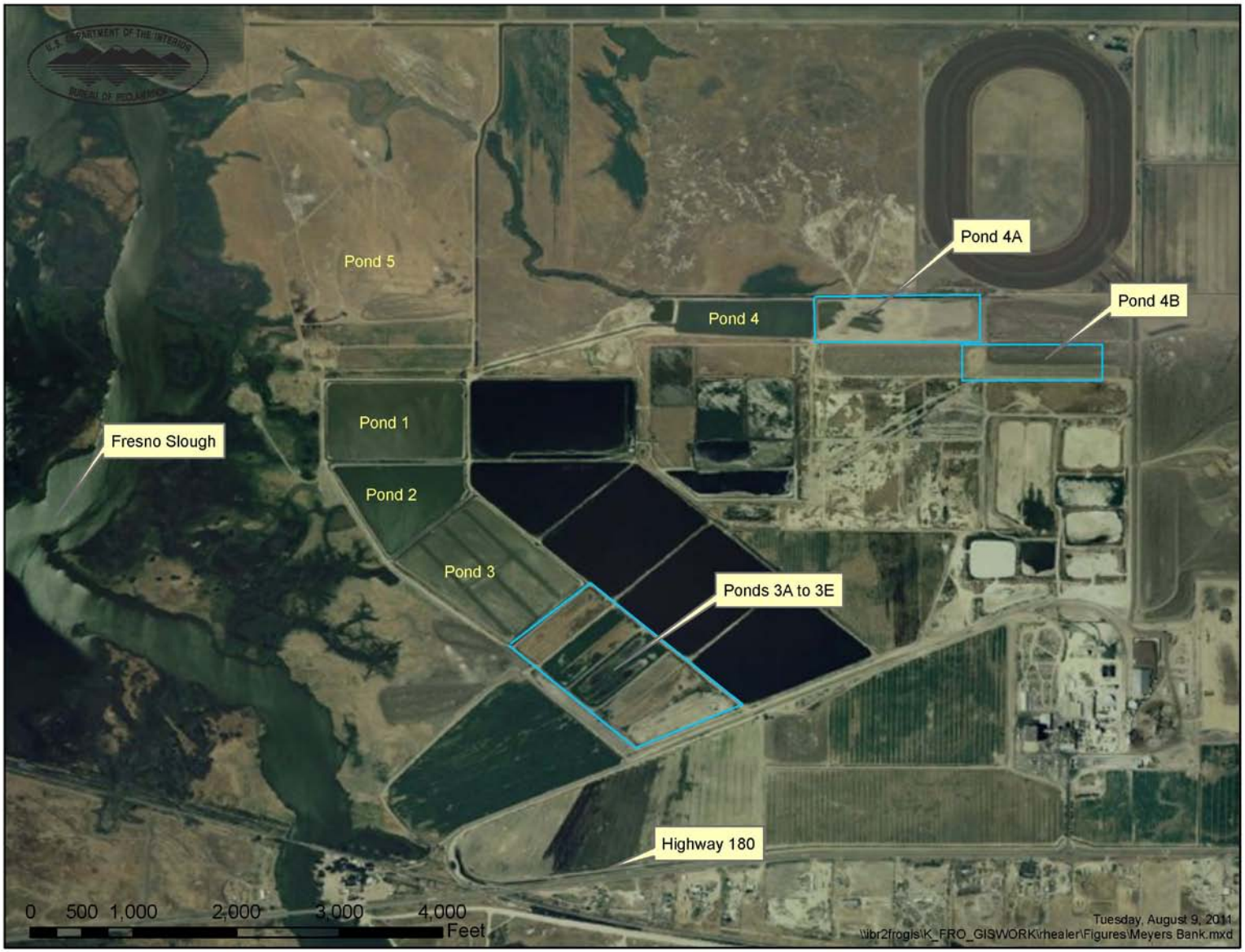

Figure 2-1 Existing Ponds at Meyers Bank

Section 3 Affected Environment and Environmental Consequences

This section identifies the potentially affected environment and the environmental consequences involved with the Proposed Action and the No Action Alternative, in addition to environmental trends and conditions that currently exist.

FONSI/EA-05-09, FONSI/SEA-07-102, and FONSI/SEA-09-062 analyzed the environmental impacts of storage of Meyers Farm's CVP water outside the SLWD service area within the Meyers Bank for later extraction and use on Meyers Farm's agricultural lands within SLWD over a 22 year period (through 2033). FONSI/EA-05-09, FONSI/SEA-07-102, and FONSI/SEA-09-062 also analyzed the utilization of exchange agreements with Reclamation for the extracted water, including both CVP and non-CVP, to be returned to Meyers Farm's lands within SLWD. As FONSI/EA-05-09, FONSI/SEA-07-102, and FONSI/SEA-09-062 have been incorporated by reference the affected environment in this EA will focus on updates to the previous affected environment as well as areas that were not previously covered.

3.1 Surface Water Resources

3.1.1 Affected Environment

Meyers Farm is a CVP contractor with a CVP allocation from SLWD of up to 8,000 AFY (Contract No. 14-06-200-7773A) from the Delta. In addition, Meyers Farm has an agreement with the Kings River Water Association which allows for the diversion of Kings River flood flows for banking when flows are available (Kings River Water Association 2001). Meyers Farm also has an agreement to bank up to 5,000 AFY of BCID's pre-1914 San Joaquin River water over a 22 year period (through 2033). This could be increased to 10,000 AFY should the Proposed Action be approved.

Meyers Bank Meyers Farm created the Meyers Bank in order to increase reliability of their water supply by storing water in above-normal and wet years for later use during below-normal, dry, and critically-dry years. Under the existing banking program surface water is delivered to the Mendota Pool from the Delta-Mendota Canal where it is diverted by Meyers Bank from the Fresno Slough branch of the Pool into five recharge ponds totaling 91 acres during the fall, winter, and spring (Ponds 1-5 in Figure 2-1). Once delivered to the recharge ponds, surface water is allowed to infiltrate to the shallow aquifer for underground storage.

Most of the water recharged by Meyers Bank, since January 2001, has been carry-over water from Meyers Farm's CVP allocation from SLWD. When available, Kings River flood releases, Section 215 temporary water supplies from the Friant Division, and pre-1914 non-CVP water are also used to supplement carry-over water. Table 3-1 includes a list of banked water between 2005 and 2012.

Table 3-1 Meyers Bank Banked Water by Source (AF)

Year	CVP Supplies	Pre-1914 Water	Kings River flood flows	CVP Section 215 Water	Annual Total
2005	4,103	0	577	295	4,975
2006	3,601	0	1,113	0	4,714
2007	2,008	0	0	0	2,008
2008	4,983	95	0	0	5,078
2009	0	0	0	0	0
2010	1,862	10,936	0	0	12,798
2011	1,537	1,498	2,706	0	5,741
2012	1,828	0	0	0	1,828
Total	**19,922**	**12,529**	**4,396**	**295**	**37,142**

Banked water is later extracted and returned to the Mendota Pool where it is exchanged with Reclamation under an exchange agreement for CVP water from San Luis Reservoir delivered through the San Luis Canal to Meyers Farm's lands in SLWD.

Mendota Pool

The Mendota Pool is impounded by Mendota Dam, which is owned and operated by Central California Irrigation District (CCID). The Pool primarily serves as a conveyance facility but is also used as a short-term storage and re-regulation reservoir. The Pool is supplied with surface water from the Delta-Mendota Canal (its' primary source), the San Joaquin River (during restoration and flood releases from Friant Dam), and the Kings River via Fresno Slough (during flood releases from Pine Flat Dam). In addition, local wells owned by the Mendota Pool Group (MPG), Tranquillity Irrigation District, and Fresno Slough Water District also pump groundwater into the Pool, and the Mendota Wildlife Area drains its waterfowl ponds into the Pool during the spring. Water is diverted from the Pool for agricultural and wildlife uses. Most of this water is used by the members of the San Joaquin River Exchange Contractors Water Authority (Exchange Contractors) to irrigate lands within their service areas, but there are other CVP contractors that divert water from the Pool for irrigation.

Water Quality Water quality conditions in the Mendota Pool depend on inflows from the Delta-Mendota Canal, groundwater pumped into Mendota Pool from local wells and, to a limited extent, San Joaquin River and Kings River inflows. Salinity as a measure of water quality refers to the concentration of dissolved minerals in water and is measured directly as total dissolved solids (TDS) or indirectly as Electrical Conductivity (EC). Water quality in the San Joaquin River varies considerably along the river's length. Between Friant Dam and the Mendota Pool, the quality of water is generally excellent with TDS of less than 50 milligrams per liter (mg/L). However, during the irrigation season, most of the water in the Mendota Pool is imported from the Delta via the Delta-Mendota Canal and this water has concentrations of TDS generally greater than 300 mg/L. The majority of the dissolved minerals consist of sodium chloride and other salts.

Concerns about water quality in the affected environment focus on contaminant effects on fish and wildlife resources, and on salinity as it affects soils and crops. The Mendota Pool has been listed by the State Water Resources Control Board as an impaired water body requiring total

maximum daily loads (TMDLs) for selenium and mercury. TMDLs for these pollutants are expected to be reached by 2019 and 2021, respectively (State Water Resources Control Board 2012).

Surface water quality in the Mendota Pool is monitored extensively by Reclamation, the Exchange Contractors, and the MPG. Continuous EC recorders are located at the Delta-Mendota Canal terminus (Check 21), the four Exchange Contractors' canal intakes, the Mendota Wildlife Area, and James Irrigation District. Meyers Farm has also installed a continuous EC recorder in Pond 1 near the intake. Selenium concentrations are measured daily at the Delta-Mendota Canal terminus and the CCID Main Canal intake. Grab samples are collected from 13 locations and analyzed for various constituents including salinity and trace elements. The grab samples are typically collected monthly from the Delta-Mendota Canal, the Exchange Contractors' canal intakes, and four locations in the southern portion of the Pool. Additional grab samples are also collected semiannually from other sampling locations. A summary of applicable water quality criteria used for monitoring Mendota Pool can be found in Table 3-2.

Table 3-2 Summary of Applicable Water Quality Criteria for Constituents in Mendota Pool

Constituent	EPA: Freshwater Aquatic Life Protection Criteria[1] (Hardness = 85 mg/L)	State Water Resources Control Board: Water Quality Objectives for Inland Surface Waters[2]	Reclamation Water Quality Thresholds[3]
Arsenic		10 µg/L	
Barium		100 µg/L	
Boron		800 µg/L (3/15-9/15) 1,000 µg/L (9/16-3/14)	
Cadmium	0.22 µg/L		
Chromium (III)[4]	65 µg/L		
Copper	7.8 µg/L		
Iron		300 µg/L	
Lead	2.1 µg/L		
Manganese		50 µg/L	
Mercury[5]	0.77 µg/L		
Molybdenum		19 µg/L	
Nickel	45 µg/L		
Selenium[6]		2 µg/L	2 µg/L
Silver	2.4 µg/L		
TDS			800 mg/L (daily mean) 600 mg/L (monthly mean) 450 mg/L (annual mean) 400 mg/L (5 year mean)
Zinc	100 µg/L		

Source: Reclamation 2005
[1]EPA criteria are based on the California Toxic Rules Criterion Continuous Concentration values.
[2] State Water Resources Control Board's criteria are based on Sacramento-San Joaquin Valley Basin Plan.
[3]Reclamation's criteria are based on contract requirements as identified in Appendix B.
[4]Used as a surrogate for total chromium.
[5]Mercury criterion does not vary with hardness.
[6]Selenium criterion based on Service criterion established for Grassland watershed.

Banta Carbona Irrigation District

BCID is an entirely agricultural district and does not supply or intend to supply any water for municipal and industrial use. BCID extends from the City of Tracy to the San Joaquin-Stanislaus County line near the town of Vernalis. BCID has an annual allocation of CVP water from the Delta of up to 20,000 AF. BCID also holds 123,102 AFY of pre-1914 water rights to

the San Joaquin River for irrigation. San Joaquin River water is directly diverted at approximately river mile 63.5 located about five miles north of Vernalis in San Joaquin County. As part of their normal operating procedures, BCID sells water that has become excess of their in-district demands due to conservation or other means.

San Luis Water District

SLWD is located on the western side of the San Joaquin Valley near the City of Los Banos, in both Merced and Fresno Counties (Figure 1-1). SLWD has an annual allocation of up to 125,080 AF of CVP supply from the Delta-Mendota Canal and San Luis Canal. CVP water is SLWD's only long-term water supply. The district does not own any groundwater wells and has no long-term contracts for surface water or groundwater supplies. There are approximately 20 active privately owned and operated groundwater wells that provide water to approximately 6,000 acres in the Direct Service Area. There are no agricultural wells within the three improvement districts. The vast majority of the SLWD's water users do not have the option of using groundwater for irrigation because the pumping lifts are too great, and therefore, supplementation of the CVP supply is necessary.

South-of-Delta CVP Allocations

South-of-Delta (SOD) CVP agricultural allocations averaged 62.5 percent from 2002 to 2011 and ranged from 10 percent to 100 percent during this period (Table 3-3). SOD CVP water supply allocations have been severely impacted over the last few years. Due to operational constraints and fluctuating hydrologic conditions, water allocations in the future are likely to be similar to those shown in Table 3-3. For example, the annual contract entitlement for SLWD is 125,080 AFY, thus the average CVP supply (125,080 AF x 0.625) is 78,175 AF. At 62.5 percent supply, the Meyers Farms CVP allocation would be 5,000 AF, which would be used directly for irrigation in SLWD. This leaves an average annual deficit for Meyers Farms of 5,000 AF and 46,905 AF for all of SLWD.

Table 3-3 Average SOD Agricultural Allocation[1]

Contract Year[1]	Agricultural Allocations (%)[2]	SLWD Available Contract Quantity (AFY)[3]	Meyers Farms Available Allocation (AFY)[4]
2011	80	100,064	6,400
2010	45	56,286	3,600
2009	10	12,508	800
2008	40	50,032	3,200
2007	50	62,540	4,000
2006	100	125,080	8,000
2005	85	106,318	6,800
2004	70	87,556	5,600
2003	75	93,810	6,000
2002	70	87,556	5,600
Average	**62.5**	**78,175**	**5,000**

[1]As percentage of Water Service Contract total
[2]A Contract Year is from March 1 of a given year through February 28/29 of the following year.
[3]SLWD's Total Contract Allocation is 125,080 AFY
[4]Meyers Farms' Total Contract Allocation from SLWD is 8,000 AFY

3.1.2 Environmental Consequences

No Action

Under the No Action Alternative, extraction rates and the cumulative total amount of CVP water banked in Meyers Bank at any given time would continue to be the same as outlined under the existing long-term exchange agreement. Meyers Farm and SLWD would continue to receive their CVP allocation dependent upon hydrologic conditions. Meyers Farm would continue to engage in their existing banking opportunities and exchanges in order to maximize management of its water supply within the facilities available to them in Meyers Bank. Banked water would only be returned to Meyers Farm's lands within SLWD and would not go to additional lands within SLWD. Conveyance of up to 5,000 AFY of BCID's non-CVP water in the Delta-Mendota Canal would continue through 2033 as previously analyzed in EA-09-062. BCID would likely continue to sell water in excess of their in-district demands as they have in the past. In order to meet water demands, Meyers Farm and SLWD may need to find alternative water sources on the open market.

Operation and maintenance (O&M) of Meyers Bank would continue as it has in the past as it is part of their ongoing operations.

Proposed Action

Delivery of surface water to be banked at Meyers Bank would continue to occur in the same manner as previously analyzed and would not change from baseline conditions. Banked water would continue to be returned to Meyers Farm's lands in SLWD via the existing exchange program. In addition, other lands within the service area of SLWD would also be able to receive banked water from Meyers Bank via the existing exchange agreement. The amendment to the existing exchange agreement would provide Meyers Farm and SLWD with additional water supplies to meet their water demands during dry or critically dry years. Up to 10,000 AFY of BCID's non-CVP surface water would be conveyed within the Delta-Mendota Canal through February 2033 for banking within Meyers Bank. Reclamation's water quality standards for introduction of non-CVP water into federal facilities (Appendix B) would be implemented to prevent water quality impacts. Depending on timing, BCID may provide up to 10,000 AFY of their CVP supply in lieu of their non-CVP supply to Meyers Bank for banking. Banked CVP water would be used in the same manner as BCID's banked non-CVP water. As this would be in lieu of their non-CVP water supply, BCID's overall available water supply would not be impacted.

No natural streams or water courses would be affected by delivery of water for banking as water would be moved through existing facilities to Meyers Bank. In addition, modification of the facilities within Meyers Bank would occur within the existing bank features as shown in Figure 2-1 and would not impact natural streams or water courses. There would be no impacts to CVP or State Water Project facilities or water deliveries as water under the Proposed Action must be scheduled and approved by Reclamation and DWR.

Extraction of water from Meyers Bank could have water quality impacts in Mendota Pool; however, Meyers Bank must meet established criteria as described in Appendix B which would minimize water quality impacts. Water quality monitoring would continue as described in FONSI/EA-05-09.

3.2 Groundwater Resources

3.2.1 Affected Environment

Groundwater overdraft and the potential resulting land subsidence are prevalent in the southern two-thirds of the Central Valley. Currently all basins in this region are in overdraft conditions (California Department of Water Resources [DWR] 2003). During drought, as surface supplies dwindle and carryover storage in reservoirs is not replaced, groundwater pumping increases. Between 1970 and 1993, the total mean annual groundwater extraction within this area was 4.6 million AF (DWR 2003). An annual total average of 0.44 million AF (9.5 percent) was used to meet urban needs and 4.2 million AF (90.5 percent) was used for agriculture. The total mean annual overdraft during this period was nearly 0.8 million AF (DWR 2003).

Meyers Bank

Water banking at Meyers Bank began as pilot projects in January 2001. Since its inception, Meyers Bank has recharged water every year except 2009 (Table 3-4). As of May 31, 2011, the total amount of water recharged was 42,135 AF and the total amount of water extracted was 8,544 AF. As Meyers Bank leaves 5 percent of total recharged water behind to replenish the underlying aquifer and improve groundwater quality, the total amount of banked water available to Meyers Farm as of May 31, 2011 is 31,484 AF (Table 3-4).

Table 3-4 Recharge, Extraction, and Banked Water at Meyers Bank

Year	Pumpage to Recharge Ponds (AF)[1]	5% of Total Recharge (AF)	Extraction of Banked water (AF)	Available Banked Water (AF)[2]
2011[3]	3,774	189	0	31,484
2010	12,798	640	13	27,899
2009	1	0	5,771	15,754
2008	5,078	254	2,105	21,524
2007	2,008	100	655	18,805
2006	4,714	236	0	17,552
2005	4,976	249	0	13,074
2004	4,804	240	0	8,347
2003	2,502	125	0	3,783
2002	1,431	72	0	1,406
2001	49	2	0	47
Total	**42,135**	**2,107**	**8,544**	**31,484[4]**

Source: Appendix A
[1]Water pumped from Mendota Pool to recharge ponds.
[2]Water available for extraction by Meyers Bank.
[3]Totals through May 31, 2011.
[4]Cumulative total available less 5% recharge and extracted amounts.

Water is not extracted from Meyers Bank on an annual or regular basis (Table 3-5). During wet and above normal water years, Meyers Farm has no need to extract water. Water stored in Meyers Bank is extracted only after other supplemental water supplies are exhausted. This extraction typically occurs during dry and critically-dry years but could also occur during below normal years.

Table 3-5 Meyers Bank Acre-Feet Extractions by Month[1]

Year	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Total
2009-2010[2]	0	0	0	0	0	0	-933	-1001	-989	-881	-895	-407	-5106
2008-2009	0	0	0	0	0	-655	0	0	0	0	0	0	-655
2007-2008	0	0	0	0	0	0	0	0	-456	-723	-769	-150	-2098
2006-2007	0	0	0	0	0	0	0	0	0	-62	-470	-123	-655
2005-2006	0	0	0	0	0	0	0	0	0	0	0	0	0
2004-2005	0	0	0	0	0	0	0	0	0	0	0	0	0
2003-2004	0	0	0	0	0	0	0	0	0	0	0	0	0
2002-2003	0	0	0	0	0	0	0	0	0	0	0	0	0
2001-2002	0	0	0	0	0	0	0	0	0	0	0	0	0
2000-2001	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**	**-655**	**-933**	**-1001**	**-1145**	**-1666**	**-2134**	**-680**	**-8514**

Source: Meyers Bank 2008 and 2011
[1]Differences in number totals between Table 3-4 and Table 3-5 are due to time period overlaps used for Table 3-5.
[2]Based on draft Annual Report; therefore, numbers are approximate.

Groundwater levels Meyers Bank currently uses five recharge ponds for their groundwater banking (Ponds 1-5 in Figure 2-1). Water infiltration to the shallow aquifer for storage creates a groundwater mound in the vicinity of the pond. During recharge events, groundwater levels beneath the recharge ponds approach the pond bottoms' elevation (approximately 155 feet above mean sea level). During November and December 2010 groundwater levels beneath the ponds were about one foot below the pond bottoms. In general, groundwater levels decrease with distance from the recharge ponds. In 2010 and 2011, groundwater levels were lowest in a well located north of the recharge ponds. An analysis of groundwater levels beneath Meyers Bank and the immediate surrounding area indicates that groundwater storage at the bank could be increased by approximately 25,000 AF (Appendix A).

Water level data collected by the MPG since 1999 show that overdraft is not occurring near the Fresno Slough, including the vicinity of Meyers Bank (Luhdorff & Scalmanini and Kenneth D. Schmidt & Associates 2011). In addition, monitoring at Meyers Bank is done at least six times per year and has shown an increase in groundwater levels beneath the bank of more than 30 feet since banking began in 2001 (Meyers Bank 2011). Hydrographs created from data collected from monitoring wells in and around the bank's recharge ponds show that groundwater levels rise during recharge events and decline between recharge events; however, the extent of the rise and fall is dependent on proximity to recharge ponds. Overall, the groundwater mound has expanded laterally since inception and continues to expand laterally in all directions from the recharge ponds (Meyers Bank 2011).

Groundwater Quality As described in FONSI/EA-05-09, Meyers Bank conducts groundwater sampling twice a year (fall and spring) on 16 wells surrounding the bank for the following constituents: EC, TDS, pH, hardness (total alkalinity), sodium , calcium, potassium, magnesium, chloride, bicarbonate, sulfate, nitrate, iron, manganese, copper, and zinc. In addition, Meyers Bank conducts groundwater sampling annually for the following additional trace elements: boron, barium, arsenic, molybdenum, and selenium. Samples from the extraction wells and discharge water are also analyzed for these trace elements semi-annually during extraction events. Nine of the 16 wells in the monitoring program were installed by Meyers Farm (MF-1 to MF-9) and have been monitored since 2002. The remaining seven wells are monitoring wells installed by Spreckels Sugar Company (MW-1 to MW-3, MW10, MW-11, MW-13, and MW-18) that have been monitored since 1982. The 2008-2010 average annual concentration of

constituents in these 16 wells that have criteria for Mendota Pool has been summarized in Table 3-6. Complete results of sampling from all 16 wells can be found in Appendix C.

Table 3-6 2008-2010 Average Annual Constituents with Criteria for Mendota Pool

Well	Arsenic (µg/L)	Barium (mg/L)	Boron (mg/L)	Copper (mg/L)	Iron (mg/L)	Manganese (mg/L)	Mo[2] (µg/L)	Selenium (µg/L)	TDS (mg/L)	Zinc (mg/L)
Criteria[1]	**10**	**0.1**	**0.8**	**0.0078**	**0.3**	**0.05**	**19**	**2**	**450**	**0.1**
MF-1	4.97	0.09	0.21	0.0022	0.61	0.51	7.16	0.4	677	0.005
MF-2	0.67	0.12	0.25	0.0021	0.2	0.68	3.9	0.27	778	0.007
MF-3	1.03	0.05	0.29	0.0010	1.87	1.01	19.6	0.27	822	0.006
MF-4	56.3	0.25	0.31	0.0008	8.72	1.44	2.38	0.27	1022	0.005
MF-5	3.07	0.13	0.36	0.0037	9.78	0.55	4.6	0.27	622	0.023
MF-6	6.7	0.14	0.30	0.0060	4.53	0.55	9.72	0.27	1002	0.006
MF-7	1.83	0.09	0.33	0.0021	4.47	0.59	6.27	1.02	488	0.007
MF-8	36.7	0.48	0.52	0.0035	27.7	4.17	29.5	0.49	1867	0.006
MF-9	1.77	0.1	0.8	0.0019	3.2	0.84	29.9	0.27	1600	0.005
MW-1	1.45	0.03	0.46	0.0007	0.21	0.16	19.8	0.2	1130	ND
MW-2	33	0.27	0.44	0.0008	8.5	3.2	3.03	0.2	1533	ND
MW-3	62	0.05	0.38	0.0014	7.78	0.85	4.65	0.2	874	0.01
MW-10	1.55	0.06	0.14	0.0005	0.15	0.21	1.2	0.2	855	ND
MW-11	1.49	0.19	0.23	0.0007	0.99	0.56	1.2	0.2	1325	0.01
MW-13	3.65	0.02	0.23	0.0004	0.1	0.47	8	0.2	410	0.01
MW-18	6.3	0.18	0.3	0.0018	3.73	0.27	18.3	0.2	2325	0.01
Average	**13.9**	**0.14**	**0.35**	**0.0018**	**5.16**	**1**	**10.6**	**0.31**	**1083**	**0.01**
Maximum	**62**	**0.48**	**0.87**	**0.0060**	**27.7**	**4.17**	**29.9**	**1.02**	**2325**	**0.02**
Minimum	**0.67**	**0.02**	**0.14**	**0.0004**	**0.1**	**0.16**	**1.2**	**0.2**	**410**	**ND**

[1]Microgram per liter values have been converted to milligram per liter values where applicable to coincide with tested values. See Table 3-2.
[2]Molybdenum
ND = Non Detect

As shown in Table 3-6, between April 2008 and September 2010, average annual concentrations of boron, copper, selenium, and zinc did not exceed established criteria in any of the 16 wells. However, the average annual concentrations exceeded the criteria for arsenic, barium, iron, manganese, molybdenum and TDS in some or all wells.

3.2.2 Environmental Consequences

No Action

Under the No Action Alternative, Meyers Bank would continue to operate as it has in the past. Water quality would be similar and would continue to vary depending on the quality of water brought in for recharge and other factors. Meyers Bank was determined to have an overall beneficial impact on groundwater quality in FONSI/EA-05-09; however, one potential impact to groundwater quality was identified due to extraction from the bank. During periods of extraction, pumping of the extraction wells could cause a cone of depression that could cause contaminated groundwater to migrate toward the extraction wells from the east. The impact was analyzed in FONSI/EA-05-09 and it was determined that extraction well pumping would not appreciably alter migration of contaminated groundwater. This would continue to be the case under the No Action Alternative and the Proposed Action. Overall, groundwater quality at

Meyers Bank is expected to improve with the addition of higher quality surface water recharged by the bank.

In FONSI/EA-05-09, subsidence data collected by the MPG for the Mendota Pool area indicated that shallow wells typically do not affect subsidence. This is not expected to change under the No Action Alternative.

Proposed Action

Under the Proposed Action, banked water extraction rates would increase from 6,316 AFY to 10,526 AFY and the cumulative total amount of CVP water banked in Meyers Bank at any given time would increase from 35,000 AF to 60,000 AF. Extraction of banked water would likely be similar to what has been done in the past, although extracted water would also be delivered to lands owned by other SLWD members. As groundwater is generally not used to meet demands in most of SLWD, this is not expected to impact groundwater resources by offsetting pumping within that area. However, there may be a slight increase in groundwater recharge due to the importation of additional surface water.

Annual extractions of banked water would be from shallow wells that would not likely cause further subsidence (Reclamation 2005). Monitoring of groundwater levels to prevent impacts to Mendota Pool would continue. Meyer's Banking operations were evaluated in FONSI/EA-05-09 and were found not to be a significant impact to water resources. It is expected that there would be slight beneficial impacts to water levels overtime as five percent of the increased amount of banked water would be left within Meyers Bank for recharge of the aquifer. Water quality in the bank would continue to fluctuate, depending on the source of water brought in for banking, but is expected to improve overtime, similar to the No Action Alternative. As Meyers Bank would continue to operate as analyzed in FONSI/EA-05-09, including implementing all environmental commitments, the Proposed Action is not expected to have adverse impacts to groundwater resources.

3.3 Biological Resources

3.3.1 Affected Environment

The U.S. Fish and Wildlife Service (Service) regularly updates its database as species are proposed, listed, and delisted. Therefore, the Service recommends that federal agencies get an updated list every 90 days. As the previous EA from 2005 and the previous SEA from 2009 are well over 90 days old, Reclamation requested another list and conducted the following re-evaluation of the affected environment for biological resources to supplement the previous environmental documents.

A species list for the Mendota Dam and Tranquility U.S. Geological Survey 7.5 minute quadrangles was obtained from http://www.fws.gov/sacramento/ES_Species/Lists/es_species_lists-form.cfm on May 9, 2012 (document number 120509114422). Table 3-7 below lists these species and summarizes their potential for occurrence/effects determinations. The only species for which the list included critical habitat was the Fresno kangaroo rat. One species under the jurisdiction of the National Marine Fisheries Service (Central Valley steelhead) also appears on the list.

Table 3-7 Special Status Species Potentially Occurring with the Action Area

Species	***Status[1]***	***Effects[2]***	***Occurrence in the Study Area[3]***
Amphibians			
California red-legged frog (*Rana draytonii*)	T	NE	**Absent**. No longer occurs on valley floor.
California tiger salamander (*Ambystoma californiense*)	T	NE	**Absent**. No seasonal wetlands in or within 1.3 miles of the Proposed Action area.
Birds			
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	C	NE	**Possible**. Extensive cottonwood-willow riparian forest no longer occurs in San Joaquin Valley, but birds could fly over en route to or returning from breeding habitat along the Sacramento River.
Fish			
Central Valley Steelhead (*Oncorhynchus mykiss*)	T, NMFS	NE	**Absent**. No natural waterways within the species' range will be affected by the proposed action.
Delta smelt (*Hypomesus transpacificus*)	T	NE	**Absent**. No natural waterways within the species' range will be affected by the proposed action.
Invertebrates			
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	T	NE	**Absent**. Elderberry shrubs are not present within 100 feet of the Proposed Action area.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	T	NE	**Absent**. No vernal pools in Proposed Action area.
Mammals			
Fresno kangaroo rat (*Dipodomys nitratoides exilis*)	E, X	NE	**Absent**. The Proposed Action area was examined for signs of kangaroo rats and no evidence of their occurrence was found.
San Joaquin kit fox (*Vulpes mactotis mutica*)	E	NE	**Possible**. Could forage in agricultural lands that would receive water involved in the Proposed Action. Cannot den in agricultural lands.
Plant			
Palmate-bracted bird's-beak (*Cordylanthus palmatus*)	E	NE	**Absent.** Alkali sink and alkali grassland habitat does not occur either at the bank or in agricultural lands.
San Joaquin woolly-threads (Monolopia congdonii)	E	NE	**Absent.** There is no arid grassland or saltbush scrub in the Proposed Action area.
Reptiles			
Blunt-nosed leopard lizard (*Gambelia sila*)	E	NE	**Absent.** There is no arid grassland or saltbush scrub in the Proposed Action area.
Giant garter snake (*Thamnophis gigas*)	T	NE	**Present**. Last detected in the Mendota Pool area in 2008 by Eric Hansen.

[1] Status= Status of federally protected species protected under federal Endangered Species Act.
E: Listed as Endangered under the federal Endangered Species Act.
NFMS: Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service.
T: Listed as Threatened under the federal Endangered Species Act.
X: Critical habitat designated under the federal Endangered Species Act.
C: Candidate to become a proposed species.

[2] Effects = Endangered Species Act Effect determination
NE: No Effect anticipated from the Proposed Action to federally listed species

[3] Definition Of Occurrence Indicators
Present: Species observed in the area.
Absent: Species not recorded in study area and/or habitat requirements not met

[4] CNDDB = California Natural Diversity Database 2012

Fishery surveys previously conducted and appended to FONSI/EA-05-09 showed that special-status fish are rare in Mendota Pool and apparently absent from the inlet channel leading from the Mendota Pool to the recharge ponds.

There is no proposed or designated critical habitat for Federally listed species in the action area.

The Mendota Pool is considered to be potentially occupied giant garter snake habitat, and is one of the few areas where the species may persist in this part of their range. The most recent California Natural Diversity Database record for the giant garter snake in the region dates back to 2001 and is a record at the Mendota Wildlife Area. However, according to the Service, giant garter snakes were found in the Mendota Pool vicinity as recently as 2008 by Eric Hansen (J. Winckel, pers. comm. to D. Hyatt).

The Meyers recharge ponds lack freshwater emergent herbaceous vegetation, which is an important habitat component for the giant garter snake as it is needed for foraging habitat and escape cover during the active season (May to October); the ponds are separate from the Meyers wetland habitat flooded during fall and winter and are not considered suitable habitat for the giant garter snake. The ponds are also devoid of rodent burrows, based on an April 28, 2011 site visit by Reclamation.

Upland areas within 200 feet of the aquatic habitat at Fresno Slough would be considered to be giant garter snake upland habitat. Although 200 feet is the distance within which the majority of upland habitat use occurs, snakes may be found as far away as 820 feet (Wylie *et al*. 1997). Within the Proposed Action area the upland sites near Fresno Slough may provide vegetative cover and basking sites that aid in thermoregulation, and burrows and crevices may be used for overwintering or retreat sites.

Water quality, including salinity and selenium levels, can be of concern for the giant garter snake. Potentially detrimental effects of selenium bioaccumulation (increased metabolic rates) have been detected in banded water snakes (Hopkins et al. 1999), whose natural history is similar to that of the giant garter snake. Assuming that data collected from the monitoring wells at the Pool is representative of water in the area, these effects would not occur under either alternative. Reclamation is not aware of any studies on garter snakes or ecologically similar snake species that analyze the effects of salinity. However, regulatory agency biologists have expressed concern over the potential effects of salinity on the giant garter snake's prey base. Mosquitofish, one common prey item for giant garter snakes, can tolerate high levels of salinity, such as those found in the evaporation ponds. Pacific tree frogs, however, may be adversely affected when TDS concentrations reach 5,000 mg/L (Yohannes et al. 2005). Pacific tree frogs are unlikely to co-occur with mosquitofish, because mosquitofish would prey heavily upon tree frogs, even when other prey is present (Goodsell and Kats 1999). Therefore, the effects of increased salinity might depend upon the prey species available to the snakes. Due to the abundance of non-native fish in the Mendota Pool and the Meyers Bank intake channel, an abundance of Pacific tree frogs would be unlikely. In any event, a water quality analysis performed for the biological evaluation for this Proposed Action showed evidence to suggest that, on the whole, previous banking activities have improved both salinity and selenium levels, and only one monitored well (not an extraction well) had a recent reading over 2 μg/L selenium (18.1 μg/L).

3.3.2 Environmental Consequences

No Action
Under the No Action Alternative, the San Joaquin kit fox would continue to potentially use agricultural lands for foraging, and western yellow-billed cuckoos may fly over the area. The giant garter snake would continue to experience insignificant effects from the MPG 10-year exchange program (Reclamation consulted with the Service on that project in 2005), and any subsequent renewal of that program.

Proposed Action
Under the Proposed Action Alternative, as with the No Action Alternative, San Joaquin kit fox would continue to potentially use agricultural lands for foraging, and western yellow-billed cuckoos may fly over the area. Those two species would not be affected at all. The giant garter snake would be subject to insignificant water quality effects and minor effects from ground disturbance as a result of the Proposed Action. The protective measures contained in the project description (Section 2.2.4) serve to reduce the effects. Reclamation will conduct an informal consultation with the Service for the Proposed Action. The EA will not be finalized until consultation is complete.

3.4 Socioeconomic Resources

3.4.1 Affected Environment
The agricultural industry significantly contributes to the overall economic stability of the San Joaquin Valley. SLWD's service area is predominately rural and agricultural with numerous small cities and a few large communities, such as Los Banos. The regional economic indicators of social well being are all measures of the social conditions within a region. Unemployment for Fresno and Merced counties were 9.0 and 9.4 percent in 2006 but increased to 16.8 and17.0 percent in 2010 (California Employment Development Department 2011). Both exceeded the state average in 2010 by five to six percent (California Employment Development Department 2011). The number of people below the poverty level for both counties was nearly double the state average (U.S. Census Bureau 2012).

3.4.2 Environmental Consequences

No Action
Under the No Action Alternative, Meyers Farm would continue to bank water within Meyers Bank through their existing sources and facilities. SLWD would continue to receive its CVP water supplies but may be required to purchase additional water supplies during water shortage years. This additional water would likely cost much more than their existing CVP contract creating potential economic hardships for farmers within SLWD. The inability to move water to other parts of SLWD could also hasten the loss of agricultural operations within the district. Therefore, there could be adverse impacts to socioeconomic resources in SLWD as a result of the No Action Alternative.

Proposed Action
The ability to bank or recharge any groundwater within this area from surplus surface water supplies would increase water supply reliability which could be used to help meet summertime

peak demands, thereby, improving the viability of farm labor jobs. The increased water supply reliability would have beneficial impacts on socioeconomic resources for Meyers Farm and SLWD as this water would be used to help sustain existing crops.

3.5 Air Quality

3.5.1 Affected Environment

The Proposed Action area lies within the San Joaquin Valley Air Basin (SJVAB) under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). The pollutants of greatest concern in the San Joaquin Valley are carbon monoxide, ozone, ozone precursors such as volatile organic compounds, inhalable particulate matter between 2.5 and 10 microns in diameter (PM_{10}) and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$). The SJVAB has reached Federal and State attainment status for carbon monoxide, nitrogen dioxide, and sulfur dioxide. Although Federal attainment status has been reached for PM_{10} the State has not and both are in non-attainment for ozone and $PM_{2.5}$ (Table 3-8). There are no established standards for nitrogen oxides; however, they do contribute to nitrogen dioxide standards (SJVAPCD 2012).

Table 3-8 San Joaquin Valley Attainment Status

Pollutant	California Attainment Status	National Attainment Status
Ozone	**Nonattainment**	**Nonattainment**
Carbon monoxide	Attainment	Attainment
Nitrogen dioxide	Attainment	Attainment
Sulfur dioxide	Attainment	Attainment
PM_{10}	**Nonattainment**	Attainment
$PM_{2.5}$	**Nonattainment**	**Nonattainment**
Source: CARB 2012; SJVAPCD 2012; 40 CFR 93.153		

3.5.2 Environmental Consequences

No Action

Meyers Bank extracts water from their wells via electrical pumps from electricity offset by solar power panels installed at the bank. Extraction of banked water and generation of electricity is part of the current conditions and would not change under the No Action Alternative. Annual O&M of Meyers Bank as well as the proposed upgrades and expansions would have some impacts to air quality due to dust generation from ground disturbance as well as emissions from equipment. Impacts would be localized, temporary and are part of the current conditions. Meyers Bank would continue to comply with SJVAPCD's Regulation VIII to reduce air quality impacts from PM_{10}.

Proposed Action

Similar to the No Action Alternative, air quality impacts due to dust generation and equipment emissions from annual O&M and proposed upgrades and improvements would be localized and temporary. Meyers Bank would continue to comply with SJVAPCD's Regulation VIII to reduce air quality impacts from PM_{10}. Extraction of banked water would occur from the existing wells and from up to three new wells. All well pumps would be powered by electricity offset by solar panels previously installed by Meyers Bank. Generation of electricity is part of the existing conditions and would not change under the Proposed Action.

3.6 Cumulative Effects

Cumulative impacts result from incremental impacts of the Proposed Action or No Action alternative when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. To determine whether cumulatively significant impacts are anticipated from the Proposed Action or the No Action alternative, the incremental effect of both alternatives were examined together with impacts from past, present, and reasonably foreseeable future actions in the same geographic area.

Existing or foreseeable projects that could affect or could be affected by the Proposed Action or No Action alternative include the following:

Mendota Pool Group Exchange Program The MPG is comprised of an unincorporated association of farmers that own approximately 50,000 acres of historically irrigated farmland in Westlands Water District (WWD) and SLWD. The MPG members have wells located near the Mendota Pool and in Farmers Water District. The MPG program involves a 10-year (through February 2015) exchange agreement between Reclamation whereby the members of the MPG can deliver up to 25,000 AFY of groundwater into the Mendota Pool in exchange for CVP irrigation water delivered to the San Luis Canal for use by MPG farmers in SLWD and WWD. Reclamation and the MPG prepared an Environmental Impact Statement (EIS) for the 10 year program, and a Record of Decision (ROD) was completed March 30, 2005 (Reclamation 2005b). The 10-year exchange agreement was anticipated to have less-than-significant effects on the majority of resource areas considered in the analysis. The primary adverse effect of the action was to increase the cumulative rate of groundwater degradation in wells west of the Mendota Pool, primarily MPG wells. The degradation of groundwater quality was not anticipated to result in significant effects on surface water quality because of the adaptive management of surface water quality using modeling to forecast potential effects. Mitigation actions that addressed potential impacts of the exchange program were included in the EIS and incorporated into the exchange agreement. These mitigation actions include a baseline pumping program, design constraints, a monitoring program, and adaptive management.

Exchange Contractors 25-Year Water Transfer Program The Exchange Contractors are currently transferring up to 130,000 AF of their substitute water to Reclamation under a 10-year (March 1, 2005, through February 28, 2014) water transfer program. Under the current program, the Exchange Contractors develop sources of water to temporarily reduce the need for delivery of substitute water by Reclamation. The sources of water developed by the Exchange Contractors include a maximum of 80,000 AF from conservation, tailwater recapture, and groundwater as well as a maximum of 50,000 AF from voluntary temporary land fallowing. For each acre-foot of water developed by the Exchange Contractors, an in-kind amount of water is considered acquired and left within the CVP for Reclamation to deliver to CVP contractors or wildlife areas. Reclamation and the Exchange Contractors prepared an EIS/Environmental Impact Report (EIR) for the 10-year program and a ROD was completed March 23, 2005. As the program will expire soon, Reclamation and the Exchange Contractors have proposed

extending the program for another 25 years. A draft EIS/EIR was released for a 60 day public review on May 4, 2012 (Reclamation 2012a).

San Joaquin River Restoration Program In 2006, the San Joaquin River Restoration Program (SJRRP) was established to implement the Stipulation of Settlement in *NRDC, et al. v. Kirk Rodgers et al.* The Settlement's two primary goals include: (1) restoration and maintenance of fish population in the San Joaquin River below Friant Dam to the confluence of the Merced River; and (2) management of water resources in order to reduce or avoid adverse water supply impacts to Friant Division long-term contractors. The SJRRP is a long-term effort to restore flows to the San Joaquin River from Friant Dam to the confluence of the Merced River in order to meet the two goals established in the Settlement. In 2007, Reclamation released a notice of intent to prepare a programmatic EIS/EIR in the Federal Register. The draft programmatic EIS/EIR was released for a 60 day public review on April 22, 2011 (Reclamation 2011a). A final programmatic EIS/EIR is pending.

As an initial action to guide implementation of the SJRRP, the Settlement requires that Reclamation modify releases from Friant Dam from October 1 to September 30 for a program of interim flows in order to collect pertinent scientific data and to implement a monitoring program. Environmental effects from the release of interim flows from Friant Dam down the San Joaquin River were addressed in a FONSI and EA/Initial Study entitled *Water Year 2010 Interim Flows Project* (Reclamation 2010). Supplemental EAs and FONSIs for continuation of interim flows were also completed for Water Years 2011 and 2012 (October 1, 2011 through September 30, 2013). Full restoration flows are scheduled to start no later than January 1, 2014.

In order to reduce or avoid adverse water supply impacts to all of the Friant Division long-term contractors that may result from the interim flows, Reclamation developed plans for recirculation, recapture, reuse, and exchange or transfer of interim flows. An EA that analyzed the impacts of recirculation of interim flows entitled *Recirculation of Recaptured Water Year 2012 San Joaquin River Restoration Program Interim Flows* was released for public comment on February 7, 2012 and a FONSI completed on April 3, 2012 (Reclamation 2012b).

Tranquillity Irrigation District Transfer to San Luis Water District Under this project, Tranquillity Irrigation District could transfer up to 15,000 AF of its pumped groundwater to SLWD via exchange with Reclamation at the Mendota Pool from March 1, 2011 through February 28, 2014 (Contract Years 2011 through 2013). Transfer in any single water year would not exceed 7,500 AF. The project was analyzed in EA-10-092 *Tranquillity Irrigation District/ San Luis Water District Groundwater Transfer/Exchange Program–2011 through 2013* and a FONSI completed on March 11, 2011b.

Conveyance of Kings River Flood Flows to Westlands Water District Under this project, WWD could convey up to 50,000 AF of Kings River flood flows in the San Luis Canal from January 1, 2012 through December 31, 2016. The project was analyzed in EA-11-002 *Westlands Water District – Warren Act Contract for Conveyance of Kings River Flood Flows in the San Luis Canal* and a FONSI signed January 26, 2012 (Reclamation 2012c).

Groundwater Pump-in Programs for San Luis Unit and Delta Division Contractors Under this project, participating CVP contractors within the Delta Division and San Luis Unit of the CVP could pump up to 50,000 AF total of groundwater into the Delta-Mendota Canal between March 1, 2012 through February 28, 2014 (Contract Years 2012 and 2013). The project was analyzed in EA-12-005 *Two-Year Exchange Agreements and/or Warren Act Contracts for Conveyance of Groundwater in the Delta-Mendota Canal – Contract Years 2012 through 2014 (March 1, 2012 – February 28, 2014)* and a FONSI was completed on May 8, 2012 (Reclamation 2012d). The action was previously conducted between March 1, 2010 through February 28, 2012 (Contract Years 2010 and 2011) and analyzed in EA-09-169. It is likely that these actions would be requested in the future.

Byron-Bethany Irrigation District Long-term Exchange Agreement Reclamation has received a request from Byron Bethany Irrigation District to enter into a 40-year contract for the introduction of up to 4,725 AFY of their non-CVP surface water in to the Delta-Mendota Canal for exchange with Reclamation. Reclamation is currently preparing an EA for the proposed project.

Donald J. Peracchi and affiliates Exchange Program Reclamation has received a request from Donald J. Perachhi and affiliates to approve a series of exchange agreements with Donald J. Peracchi and his affiliates through February 2015 for their portion of groundwater pumped by Farmers Water District. This is the same amount of water previously included under the MPG exchange program; therefore, no additional groundwater would need to be pumped for the Proposed Action and there would be no additional cumulative impacts to water resources beyond what was previously analyzed in EIS-01-81. Reclamation is currently preparing an EA for the proposed project.

Surface Water Resources

As in the past, hydrological conditions and other factors are likely to result in fluctuating water supplies which drive requests for water service actions. Water districts aim to provide water to their customers based on available water supplies and timing, while attempting to minimize costs. Farmers irrigate and grow crops based on these conditions and factors, and a myriad of water service actions are approved and executed each year to facilitate water needs. Each water service transaction involving Reclamation undergoes environmental review prior to approval.

Water service actions, like those described above, do not result in increases or decreases of water diverted from rivers or reservoirs. Each water service transaction involving CVP and non-CVP water undergoes environmental review prior to approval. The Proposed Action and No Action alternative and other similar projects would not interfere with the projects listed above, nor would they hinder the normal operations of the CVP and Reclamation's obligation to deliver water to its contractors or to local fish and wildlife habitat. Neither alternative, when added to other water service actions, would result in cumulative effects to surface water resources beyond historical fluctuations and conditions.

Groundwater Resources

The impact of the proposed extraction facilities was evaluated in FONSI/EA-05-09 and found that overdraft was not occurring within the vicinity of the bank but was occurring northeast of

the bank in Madera County and some within Fresno Water District. A small amount of subsidence was also reported at the Yearout Extensometer between Meyers Bank and Farmers Water District (Reclamation 2005). However, recharge activities have been occurring at Meyers Bank since its inception in 2001 with a net increase in groundwater levels of over 30 feet beneath the recharge ponds (Meyers Farms 2011). The net result of implementation of the Proposed Action would be to improve groundwater levels by bringing more water into the groundwater basin. The No Action Alternative would have similar but reduced effect.

Biological Resources

The current distribution and abundance of the giant garter snake is much reduced from previous years (Service 1999). Less than 10 percent, or approximately 319,000 acres (129,000 hectares), of the historic 4.5 million acres (1.8 million hectares) of Central Valley wetlands remain (U.S. Department of Interior 1994), and little of this provides habitat suitable for the giant garter snake. Loss of habitat due to agricultural activities and flood control have apparently extirpated the snake from the southern one-third of its range in former wetlands associated with the historic Buena Vista, Tulare, and Kern lakebeds (Hansen 1980; Hansen and Brode 1980). These lakebeds once supported vast expanses of ideal snake habitat, consisting of cattail and bulrush dominated marshes (Service 1999). Valley flood wetlands are now subject to cumulative effects of upstream watershed modifications, water storage and diversion projects, as well as urban and agricultural development. Water quality issues continue to impact the giant garter snake in the San Joaquin Valley, where the species is quite rare; these effects include those previously addressed by Reclamation in a formal consultation with the Service in 2010 on the Grassland Bypass project (Service 2009).

Socioeconomic Resources

The Proposed Action would have slight beneficial impacts on socioeconomics by sustaining existing crop lands and maintaining economic stability within Meyers Farm and SLWD. It would not increase crop lands or change the existing economic conditions within either district beyond maintaining economic stability within the region and therefore would not contribute to cumulative effects on such resources. The No Action Alternative would likely have the opposite effect as additional water supplies may need to be purchased on the open market in order for SLWD to make up for shortages during water shortage years.

Air Quality

Impacts to air quality resulting from either alternative would be temporary and minimized through compliance with SJVAPCD's Regulation VIII; therefore, there would be no cumulative adverse impacts to air quality as a result of either alternative.

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Section 4 Consultation and Coordination

4.1 Public Review Period

Reclamation intends to provide the public with an opportunity to comment on the Draft Finding of No Significant Impact and Draft EA during a 30 day public review period.

4.2 Fish and Wildlife Coordination Act (16 U.S.C. § 661 et seq.)

The Fish and Wildlife Coordination Act (FWCA) requires that Reclamation consult with fish and wildlife agencies (federal and state) on all water development projects that could affect biological resources. The amendments enacted in 1946 require consultation with the Service and State fish and wildlife agencies "whenever the waters of any stream or other body of water are proposed or authorized to be impounded, diverted, the channel deepened, or the stream or other body of water otherwise controlled or modified for any purpose whatever, including navigation and drainage, by any department or agency of the United States, or by any public or private agency under Federal permit or license". Consultation is to be undertaken for the purpose of "preventing the loss of and damage to wildlife resources".

The Proposed Action does not involve any new impoundment or diversion of waters, channel deepening, or other control or modification of a stream or body of water as described in the statute, but the amendment of an existing groundwater banking exchange agreement. In addition, no construction or modification of water conveyance facilities are required for movement of this water. Consequently, Reclamation has determined that FWCA does not apply.

4.3 Endangered Species Act (16 U.S.C. § 1531 et seq.)

Section 7 of the Endangered Species Act requires Federal agencies, in consultation with the Secretary of the Interior and/or Commerce, to ensure that their actions do not jeopardize the continued existence of endangered or threatened species, or result in the destruction or adverse modification of the critical habitat of these species.

Reclamation has determined that the Proposed Action may affect but is not likely to adversely affect the giant garter snake. A biological evaluation will be submitted to the Service for informal consultation. The EA would not be finalized until the consultation was completed.

4.4 National Historic Preservation Act (16 U.S.C. § 470 et seq.)

The National Historic Preservation Act (NHPA) of 1966, as amended (16 U.S.C. 470 et seq.), requires that federal agencies give the Advisory Council on Historic Preservation an opportunity to comment on the effects of an undertaking on historic properties, properties that are eligible for inclusion in the National Register of Historic Places. The 36 CFR Part 800 regulations implement Section 106 of the NHPA.

Section 106 of the NHPA requires federal agencies to consider the effects of federal undertakings on historic properties, properties determined eligible for inclusion in the National Register. Compliance with Section 106 follows a series of steps that are designed to identify interested parties, determine the Area of Potential Effect, conduct cultural resource inventories, determine if historic properties are present within the Area of Potential Effect, and assess effects on any identified historic properties.

Reclamation has determined that the Proposed Action does not have the potential to affect historic properties pursuant to the regulations at 36 CFR Part 800.3(a)(1) as the Proposed Action would be completed via existing water conveyance, banking, and extraction facilities, or occur in areas disturbed by construction of the existing recharge ponds.

4.5 Migratory Bird Treaty Act (16 U.S.C. § 703 et seq.)

The Migratory Bird Treaty Act implements various treaties and conventions between the United States and Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds. Unless permitted by regulations, the Act provides that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. Subject to limitations in the Act, the Secretary of the Interior may adopt regulations determining the extent to which, if at all, hunting, taking, capturing, killing, possessing, selling, purchasing, shipping, transporting or exporting of any migratory bird, part, nest or egg will be allowed, having regard for temperature zones, distribution, abundance, economic value, breeding habits and migratory flight patterns.

The Proposed Action would deliver water to Mendota Pool, Meyers Bank, and existing irrigated agricultural lands which already receive delivered water. Rodent burrows that support species such as burrowing owls do not occur along the recharge ponds and so ground disturbance there would not result in any impacts.

4.6 Executive Order 11988 – Floodplain Management and Executive Order 11990 – Protection of Wetlands

Executive Order 11988 requires Federal agencies to prepare floodplain assessments for actions located within or affecting flood plains, and similarly, Executive Order 11990 places similar requirements for actions in wetlands.

The Proposed Action would deliver water to Mendota Pool, Meyers Bank, and existing irrigated agricultural lands and would not impact wetlands and/or floodplains as there are none present in the areas to be irrigated.

4.7 Clean Water Act (33 U.S.C. § 1251 et seq.)

Section 401 of the Clean Water Act [CWA] (33 U.S.C. § 1311) prohibits the discharge of any pollutants into navigable waters, except as allowed by permit issued under sections 402 and 404 of the CWA (33 U.S.C. § 1342 and 1344). If new structures (e.g., treatment plants) are proposed, that would discharge effluent into navigable waters, relevant permits under the CWA would be required for the project applicant(s). Section 401 requires any applicant for an individual U. S. Army Corps of Engineers dredge and fill discharge permit (Section 404) to first obtain certification from the state that the activity associated with dredging or filling will comply with applicable state effluent and water quality standards. This certification must be approved or waived prior to the issuance of a permit for dredging and filling.

No activities such as dredging or filling of wetlands or surface waters would be required for implementation of the Proposed Action, therefore permits obtained in compliance with CWA are not required.

Section 5 List of Preparers and Reviewers

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Shauna McDonald, Biologist, SCCAO
Patricia Rivera, Indian Trust Assets, MP- 400
Bill Soule, Archaeologist, MP-153
Rena Ballew, Repayment Specialist, SCCAO – reviewer
Chuck Siek, Supervisory Natural Resources Specialist, SCCAO – reviewer

Section 6 References

Bureau of Reclamation (Reclamation). 2005a. *Meyers Farm Water Banking Project – Mendota, California*. Finding of No Significant Impact/Environmental Assessment (EA-05-09). South-Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 2005b. Environmental Impact Statement (EIS-01-81) *Mendota Pool 10-Year Exchange Agreements*. South-Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 2007. *2007 Supplement to Meyers Farm Water Banking Project EA, Mendota, CA*. Finding of No Significant Impact/Supplemental Environmental Assessment (EA-07-102). South-Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 2009a. *Meyers Farm Water Banking Project Addition of Banta Carbona Irrigation District Supplies*. Finding of No Significant Impact/Supplemental Environmental Assessment (EA-09-062). South-Central California Area Office. Fresno, California.

Bureau of Reclamation (Reclamation). 2009b. Final Environmental Assessment/Initial Study. *San Joaquin River Restoration Project Water Year 2010 Interim Flows Project.* Mid-Pacific Region. Sacramento, California.

Bureau of Reclamation (Reclamation). 2010. *San Joaquin River Restoration Program Water Year 2010 Interim Flows Project Environmental Assessment/Initial Study*. Mid-Pacific Region. Sacramento, California. Website: http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=3612.

Bureau of Reclamation (Reclamation). 2011a. *San Joaquin River Restoration Program: Program Draft Environmental Impact Statement/Environmental Impact Report*. Mid-Pacific Region. Sacramento, California. Website: http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=2940.

Bureau of Reclamation (Reclamation). 2011b. Environmental Assesment (EA-10-092) *Tranquillity Irrigation District/San Luis Water District Groundwater Transfer/Exchange Program – 2011 through 2013*. South-Central California Area Office. Fresno, California. Website: http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=7276.

Bureau of Reclamation (Reclamation). 2012a. Draft Environmental Impact Statement/ Environmental Impact Report *Water Transfer Program for the San Joaquin River Exchange Contractors Water Authority, 2014-2038*. Mid-Pacific Region. Sacramento, California. Website: http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=9086.
Bureau of Reclamation (Reclamation). 2012b. Draft Environmental Assessment *Recirculation of Recaptured Water Year 2012 San Joaquin River Restoration Program Interim Flows*. Mid-Pacific Region. Sacramento, California. Website: http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=9063.

Bureau of Reclamation (Reclamation). 2012c. Environmental Assessment (EA-11-002) *Westlands Water District – Warren Act Contract for Conveyance of Kings River Flood Flows in the San Luis Canal*. South-Central California Area Office. Fresno, California. Website: http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=8805.

Bureau of Reclamation (Reclamation). 2012d. Environmental Assessment (EA-12-005) *Two-Year Exchange Agreements and/or Warren Act Contracts for Conveyance of Groundwater in the Delta-Mendota Canal – Contract Years 2012 through 2012 (March 1, 2012 – February 28, 2012).* South-Central California Area Office. Fresno, California. Website: http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=9223.

California Air Resources Board. 2012. California Air Basins. Website: http://www.arb.ca.gov/knowzone/basin/basin.htm Accessed: April 2012.

California Department of Water Resources (DWR). 2003. California's Groundwater. Bulletin 118. Update 2003. Available at http://www.groundwater.water.ca.gov/bulletin 118/index.cfm Accessed: April 2012.

California Employment Development Department (EDD). 2012. Links to LMI by County. Website: http://www.labormarketinfo.edd.ca.gov/?pageid=170. Accessed: April 2012.

California Natural Diversity Database (CNDDB). 2012. California Natural Diversity Database, Government Version. California Department of Fish and Game. April 29, 2012.

Goodsell, J.A. and L.B. Kats. 1999. Effect of introduced mosquitofish on Pacific treefrogs and the role of alternative prey. *Conservation Biology*. 13 (4): 921-924.

Hansen, G.E. and J.M. Brode. 1980. Status of the giant garter snake *Thamnophis couchi gigas* (Fitch). California Department of Fish and Game, Inland Fisheries Endangered Species Program Special Publication 80-5, Sacramento, California. 14 pp.

Hansen, R.W. 1980. Western aquatic garter snakes in central California: an ecological and evolutionary perspective. Master of Arts thesis, California State University, Fresno, California, 78 pp.

Hopkins, W.A., C.L. Rowe, and J.D. Congdon. 1999. Elevated Trace Element Concentrations and Standard Metabolic Rate in Banded Water Snakes (*Nerodia fasciata*) Exposed to Coal Combustion Wastes. *Environmental Toxicology and Chemistry.* 18 (6): 1258-1263.

Kings River Water Association. 2001. Agreement to Divert Available Water from the Kings River Channel. Fresno, CA.

Luhdorff & Scalmanini and Kenneth D. Schmidt & Associates. 2011. Mendota Pool Group Pumping and Monitoring Program: 2010 Annual Report. Prepared for San Joaquin River Exchange Contractors Water Authority, Paramount Farming Company, and the Mendota Pool Group. June.

Meyers Bank. 2011. Meyers Water Bank Annual Report. September 2008-August 2010.

San Joaquin Valley Air Pollution Control District (SJVAPCD). 2012. Ambient Air Quality Standards and Valley Attainment Status. Website: http://www.valleyair.org/aqinfo/attainment.htm Accessed: April 2012.

State Water Resources Control Board. 2012. Impaired Water Bodies. Website: http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml.

U.S. Census Bureau. 2012. County Quick Facts. Website: http://quickfacts.census.gov/qfd/states/06000.html. Accessed: April 2012.

U.S. Department of the Interior. 1994. The Impact of Federal Programs on Wetlands, Vol. 11, A Report to Congress by the Secretary of the Interior, Washington, D.C., March, 1994. http://www.doi.gov/oepc/wetlands2/.

U.S. Fish and Wildlife Service (Service). 1999. Draft Recovery Plan for the Giant Garter Snake (*Thamnophis gigas*). U.S. Fish and Wildlife Service, Region 1, Portland, Oregon. ix + 192 pp.

U.S. Fish and Wildlife Service (Service). 2009. Endangered Species Consultation on the Proposed Continuation of the Grassland Bypass Project, 2010–2019. File Number: 81420-2009-F-1036. Sacramento Field Office, Sacramento, CA. 198 pp.

U.S. Fish and Wildlife Service (Service). 2012. Species List.

Winckel, Joy. Fish and Wildlife Biologist, U.S. Fish and Wildlife Service, Sacramento Field Office, Sacramento, CA. Email message to Dave Hyatt, August 25, 2011.

Wylie, G.D., M.L. Casazza, and J.K. Daugherty. 1997. 1996 Progress report for the giant garter snake study. Preliminary report. Dixon Field Station, Biological Resources Division, U.S. Geological Survey, Dixon, California.

Yohannes, E., Vandergon, Davis, Brewster, Plank, Martin, and Kats. 2005. Effects of salinity on development of *Hyla regilla* embryos. Student poster. Northeast Fisheries Service Center, National Oceanic and Atmosphere Administration.

DRAFT ENVIRONMENTAL ASSESSMENT (11-013)

AMENDMENT TO THE MEYERS GROUNDWATER BANKING EXCHANGE AGREEMENT

Appendix A
Evaluation of Proposed Expansion of Meyers Bank

July 2012

TECHNICAL MEMORANDUM

LUHDORFF & SCALMANINI CONSULTING ENGINEERS

DATE: July 20, 2011 **FILE NO.:** 10-1-012

TO: Marvin Meyers, Meyers Farming
Jason Dean, Meyers Farming

FROM: Glenn Browning

SUBJECT: EVALUATION OF POTENTIAL GROUNDWATER IMPACTS DUE TO PROPOSED EXPANSION OF MEYERS FARM WATER BANK

The Meyers Farm Water Bank (Bank) is planning to expand and has requested increases in its recharge and extraction capacity and the limitation on the maximum volume of water that can be stored in the Bank. At the request of Meyers Farming, Luhdorff & Scalmanini, Consulting Engineers (LSCE) has evaluated the potential groundwater impacts of the proposed expansion and prepared this technical memorandum to summarize the results. We understand that the U.S. Bureau of Reclamation (Reclamation) will prepare an Environmental Assessment (EA) to evaluate all potential environmental impacts of the proposed Bank expansion. This will update the previous EA No. 05-09, SEA No. 07-102, and SEA 09-062 prepared by Reclamation (2005a, 2007, and 2009).

As shown on **Figure 1**, the Bank is located in the western portion of the Spreckels Sugar Co. property southeast of the City of Mendota. The proposed Bank expansion consists of three components:

- An increase in the total area of recharge ponds;
- An increase in the maximum annual extraction rate from 6,316 to 10,526 acre-feet per year (afy), which is expected to require a longer extraction period and three new extraction wells; and
- An increase in the maximum volume of available banked water from 35,000 to 60,000 af.

Existing and proposed recharge and extraction facilities at the Bank are shown on **Figure 2**. This map shows five existing ponds with a total area of about 84 acres currently used for recharge by the Bank. The Bank is proposing to convert up to seven small existing ponds to recharge ponds, including two ponds located east of Pond 4 (4A and 4B) and five ponds located southeast of Pond 3 (3A through 3E). If all of these ponds were used for Bank recharge, the total pond area would increase to about 130 acres. Current plans call for using only two or three of the ponds southeast of Pond 3, but other ponds in this area may be added in future years.

Figure 2 also shows eight existing extraction wells, but well EW-4 has been removed from service due to poor performance. The map also shows tentative locations for three new extraction wells labeled EW-9, EW-10, and EW-11. EW-9 and EW-10 are planned to be located

south of the existing extraction wells, and EW-11 is planned to be located between EW-2 and EW-8.

Recharge and Extraction

Since pilot water banking activities began in January 2001, the Bank has recharged water in every year except for 2009. The annual recharge and extraction totals are summarized in **Table 1**. As of May 31, 2011, the total recharge volume was 42,135 af and the total extraction volume was 8,544 af. The difference between these values (33,591 af) is the total volume of water stored in the Bank, but the Bank has pledged to leave five percent of the total recharge volume in the aquifer in perpetuity to increase groundwater levels and improve groundwater quality in the area. This means that the available banked water (the amount that can be extracted by the Bank) was 31,484 af on May 31, 2011.

Groundwater Levels

The Bank currently uses five recharge ponds to allow water to infiltrate to the shallow aquifer for storage, and this creates a groundwater mound in the vicinity of the ponds. During recharge events, groundwater levels beneath the recharge ponds can approach the pond bottom elevation (about 155 feet above mean sea level [msl]). This can be seen on the hydrograph of monitoring well MF-6, which is located between Ponds 1 and 2 and has the highest groundwater levels during recharge periods (**Figure 3**). The groundwater level in MF-6 has approached the pond bottom elevation on several occasions during recharge events and reached this elevation in January 2007. Groundwater levels in November and December 2010 were only about one foot below the pond bottom elevation.

Typically, groundwater levels in the area decrease with distance from the recharge ponds. This can be seen on hydrographs of other shallow Meyers Farm and Spreckels Sugar Co. monitoring wells (**Figures 4** through **6**). Groundwater levels in 2010 and 2011 were lowest in MF-2, located north of the Bank's recharge ponds.

A groundwater elevation contour map (**Figure 7**) shows the shape of the groundwater mound beneath the Bank in January 2011. At that time, the maximum groundwater elevation was about 151 ft msl at monitoring well MF-6, and groundwater was flowing away from the recharge ponds in all directions.

The depth to water contour map for January 2011 is shown on **Figure 8**. The depth to water beneath the Bank ranged from less than ten feet at MF-1 and MF-4, located near the recharge ponds, to 26 feet af MF-2, located north of the recharge ponds. Further north, the depth to water beneath the San Joaquin River was about 25 feet. The maximum depth to water shown on the contour map is about 45 feet at MW-32 in the eastern portion of Spreckels Sugar Co.

Planned Increase in Maximum Volume of Banked Water

As noted above, the Bank had over 31,000 af of available banked water as of May 31, 2011. Although much of this water is still present in the shallow aquifer in the vicinity of the Bank, it is assumed that a significant fraction gradually flowed away over time (either laterally or

vertically). It is also assumed that some of the banked water has been pumped out by non-Bank wells in the Mendota area. Groundwater levels have remained below the stage in both the Mendota Pool and the San Joaquin River, and it does not appear that banked water has flowed to any surface water bodies.

The Bank is requesting permission to increase the maximum available volume of banked water to 60,000 af, which would represent an increase of about 29,000 af above the April 2011 levels. The analysis presented below addresses the question of whether the shallow aquifer is physically capable of storing this additional water.

The volume of water that can be stored in an aquifer is represented by the storage coefficient. The storage coefficient for an unconfined aquifer is known as the specific yield, which can be defined as the ratio of the volume of water an aquifer will yield by gravity drainage to the total aquifer volume. Estimates of specific yield in the Mendota area vary with location and depth, but a value of 0.2 based on a groundwater flow model developed for the U.S. Geological Survey by Belitz, Phillips, and Gronberg (1992) is considered a reasonable estimate for the shallow aquifer.

The Bank is located about 2.5 miles south of the San Joaquin River, and a 2.5 mile radius was used to estimate the volume of potential storage. Based on the January 2011 depth to water contour map (**Figure 7**), groundwater levels could potentially increase by an average of about ten feet within the 2.5 mile radius surrounding the Bank. That would raise groundwater levels to just below the bottom of the Bank's recharge ponds and about 15 feet below ground surface near the San Joaquin River. Based on a specific yield of 0.2, this increase in groundwater levels would represent about 25,000 af of additional water that could be stored in the Bank. This means that the shallow aquifer in the vicinity of the Bank will be able to store most but not all of the planned recharge. However, since the recharge would occur gradually over a period of many years, it is assumed that some of the water would flow away or be pumped out by nearby wells, as has occurred in the past.

All of the effects on groundwater of the additional recharge and the increase in the maximum volume of available banked water (to 60,000 af) are considered to be positive. Groundwater levels in the Mendota area will generally be higher, and groundwater quality will improve as a result of the additional recharge and stored water.

Water Bank Operation

The normal operation of the Bank depends primarily on the availability of Central Valley Project (CVP) water, although Kings River flood releases and water purchased from other water districts in the area are used when available. CVP allocations are based on rainfall and runoff in the Sacramento River watershed. After the annual forecast has been determined, Reclamation announces the initial allocation of CVP water to its contractors for that particular year. The initial allocation is revised as additional snow survey and other data become available.

The California Department of Water Resources (DWR) uses the Sacramento Valley Water Year Hydrologic Classification to divide water years into five categories: wet, above normal, below normal, dry, and critically dry. Water years are classified by DWR's Division of Flood

Management based on the 40-30-30 Sacramento River Basin Index. During the 100-year period from 1910 to 2010, there were 32 wet years, 15 above-normal years, 18 below-normal years, 21 dry years, and 14 critically-dry years based on this index.

As shown in **Table 2**, Meyers Farming intends to operate the Bank by recharging water during wet, above-normal, and some below-normal years. The banked water would be extracted during critically-dry, dry, and some below-normal years. Although **Table 2** shows one possible scenario of how the Bank might operate, the actual amount of recharge and extraction will be based on availability and need rather than a pre-determined formula. A number of constraints on the Bank's recharge and extraction were discussed in the 2005 EA. The only proposed changes to those constraints are the increase in the maximum annual extraction to 10,526 af and the increase in the maximum available banked water to 60,000 af, as discussed above.

Recharge

The scenario summarized in **Table 2** is based on pumping to the recharge ponds at a rate of approximately 1,300 af per month from October 1 to May 31 during wet years, October 1 to April 30 during above-normal years, and November 1 to March 31 during below-normal years. Based on that schedule, the maximum recharge would be about 10,400 afy during wet and above-normal years and 6,500 afy during below-normal years.

The recharge rate would gradually decrease after the available banked water reaches a certain threshold level (assumed to be 40,000 af for this scenario). The decrease is due primarily to physical limitations on the recharge rate, which declines considerably as groundwater levels approach the pond bottoms. The Bank would also be less likely to purchase additional water when the volume of banked water is high. The recharge rate is estimated to decrease from 1,300 to 800 af per month when the available banked water exceeds 40,000 af.

The Pool is usually drained every other year to perform inspections and maintenance on Mendota Dam. During those years, the Pool is closed for up to two months (typically late-November until mid-January), and pumping to the Bank's recharge ponds must be suspended during that period. Under these conditions, pumping to the ponds would be reduced to a maximum of 8,450 afy during wet and above-normal years and 4,550 afy during below-normal years (**Table 2**).

Extraction

Meyers Farming does not have useable groundwater supplies beneath its lands in San Luis Water District, and its CVP allocation is insufficient in all but the wettest years. Therefore, Meyers Farming requires supplemental water almost every year. Supplemental water can usually be purchased during wet and above-normal years, and some supplemental water may be available during below-normal years. Supplemental water is generally unavailable or uneconomical during dry and critically-dry years. Extraction from the Bank would occur on an as-needed basis rather than a pre-determined schedule. Extraction would occur primarily during dry and critically-dry years, but could also occur during other year types (especially below-normal years). The extraction rate and timing would vary depending on need and the capacity of the extraction wells and would be subject to a maximum limit of 10,526 afy.

The Bank has seven active extraction wells, and three new extraction wells are currently proposed. Based on a total of ten wells, extraction from the Bank would be expected to occur at a rate of about 1,500 af per month between March 15 and October 15 (total of 10,526 af per year) during critically-dry and some dry years, as shown in **Table 2**. During below-normal and dry years, the extraction rate would be expected to vary depending on the available stored water in the Bank. For this scenario, it is assumed that no extraction would occur during below-normal years if the available banked water is less than 30,000 af. If the available storage exceeds 30,000 af, it is assumed that extraction during below-normal years would occur during April through September.

Cumulative Volume of Banked Water

The potential cumulative volume of water stored in the Bank based on the recharge and extraction scenario summarized in **Table 2** and a repeat of the 1910-2010 hydrologic period is plotted on **Figure 9**. This figure distinguishes between the water available for extraction from the Bank ("Available Banked Water") and the volume of stored water that would not be extracted ("5% of Total Recharge"). Under this scenario, the available banked water could reach the maximum volume of 60,000 af during a wetter than average period such as the early 1970s and could drop to zero during very dry periods such as occurred in the 1930s and the 1990s.

Under the scenario shown in **Table 2** and **Figure 9**, the total Bank recharge would be about 441,000 af and the total extraction would be about 388,000 af during the 100-year period. The difference between these values (53,000 af) represents the change in storage, which includes about 31,000 af of available water stored in the Bank and the 22,000 af of banked water that is not available for extraction. The actual recharge, extraction, and storage volumes cannot be predicted because future hydrologic conditions are unknown and the assumptions about recharge and extraction patterns are subject to change.

Extraction Impacts

An analytical groundwater flow model was used to estimate the maximum drawdown that would occur due to the planned extraction of up to 10,526 afy from the Bank. The model has previously been used to simulate the impacts of shallow-zone Mendota Pool Group (MPG) transfer pumping and is summarized in the Environmental Impact Statement prepared to evaluate those impacts (Reclamation, 2005b). The model is based on the Hantush-Jacob (1955) equation, which simulates drawdown due to pumping from a semi-confined aquifer. The shallow-zone model was calibrated against 1999 and 2000 water level data for shallow wells in the Mendota area, as discussed in the 2000 MPG annual report (LSCE and KDSA, 2001).

The capacities of the existing extraction wells at the beginning and end of the 2009 irrigation season are shown in **Table 3**. As water levels declined during the irrigation season, pumping capacities decreased significantly for some wells but remained relatively constant for other wells. Some of the decrease in capacity is due to mutual interference, which can be defined as the additional drawdown at a well caused by the cone of depression created by a nearby well or wells. The mutual interference in 2009 was caused by a combination of Bank extraction wells and shallow MPG wells along the Fresno Slough. The average capacity of the seven extraction

wells that were active in 2009 was about 1,200 gallons per minute (gpm). This value was used in the model for the three proposed extraction wells (EW-9 through EW-11).

As shown in **Table 2**, extraction is expected to occur over a seven-month period (March 15 to October 15) during dry and critically-dry years, and the maximum drawdown would occur at the end of this period. A contour map of the simulated drawdown is shown on **Figure 10**. The maximum simulated drawdown is about 25 feet at the center of the cone of depression. The simulated cone of depression is relatively localized in the vicinity of the Bank and has a maximum radius of about 1.7 miles based on the five-foot drawdown contour.

Most irrigation and other production wells in the Mendota area are deep, and additional drawdown occurring in the shallow zone would be expected to have relatively small effects on deep wells. The only shallow production wells in the area are MPG wells along the Fresno Slough. The MPG wells are located in clusters and create mutual interference with each other and the Bank extraction wells. The primary impact of increased Bank extraction will be to increase the mutual interference with the MPG wells. As discussed above, the MPG wells and the Bank extraction wells were pumped simultaneously during the summer of 2009. Although mutual interference occurred, all MPG wells were able to operate successfully during this period, and the MPG did not report any decreases in well capacity or increases in pumping costs due to the Bank extraction. The additional mutual interference due to increased extraction by the Bank is not considered to be a significant impact. Since recharge by the Bank causes increased groundwater levels and improved groundwater quality, the overall effect of the Bank on MPG wells is positive.

Conclusions

The proposed Bank expansion consists of an increase in the total area of recharge ponds (from about 84 to 130 acres), an increase in the maximum annual extraction rate (from 6,316 to 10,526 afy), and an increase in the maximum volume of available banked water (from 35,000 to 60,000 af).

The increase in the total area of recharge ponds would allow the Bank to recharge more water, especially during wet and above-normal years. This is expected to have positive effects on groundwater levels and quality in the Mendota area. Similarly, the increase in the maximum volume of available banked water is expected to result in long-term increases in groundwater levels and improved groundwater quality. It appears that the shallow aquifer in the immediate vicinity of the Bank has the capacity to store most of the additional water; the remainder will flow away or be pumped by non-Bank wells.

The increase in the Bank's extraction rate will create additional mutual interference with shallow MPG wells along the Fresno Slough. This will cause a slight decrease in well capacity and a corresponding increase in pumping costs but is not considered to be a significant impact. Overall, the proposed Bank expansion is expected to have a positive effect on groundwater conditions in the Mendota area.

References

Belitz, Phillips, and Gronberg. 1992. *Numerical Simulation of Ground-Water Flow in the Central Part of the Western San Joaquin Valley, California*. USGS Open-File Report 91-535.

Hantush, M.S. and Jacob, C.E. 1955. *Non-Steady Radial Flow in an Infinite Leaky Aquifer*. American Geophysical Union, Transactions. 36: 95-100.

Luhdorff & Scalmanini, Consulting Engineers and Kenneth D. Schmidt and Associates. 2001. *Mendota Pool Group Pumping and Monitoring Program: 2000 Annual Report.* Prepared for San Joaquin River Exchange Contractors Water Authority, Newhall Land and Farming Co., and Mendota Pool Group. Woodland, CA.

U.S. Bureau of Reclamation. 2005a. *Environmental Assessment, Meyers Farm Water Banking Project, Mendota, CA (EA Number 05-09).* Fresno, CA.

U.S. Bureau of Reclamation. 2005b. *Environmental Impact Statement, Mendota Pool 10-Year Exchange Agreement, (EIS Number 01-81).* Fresno, CA.

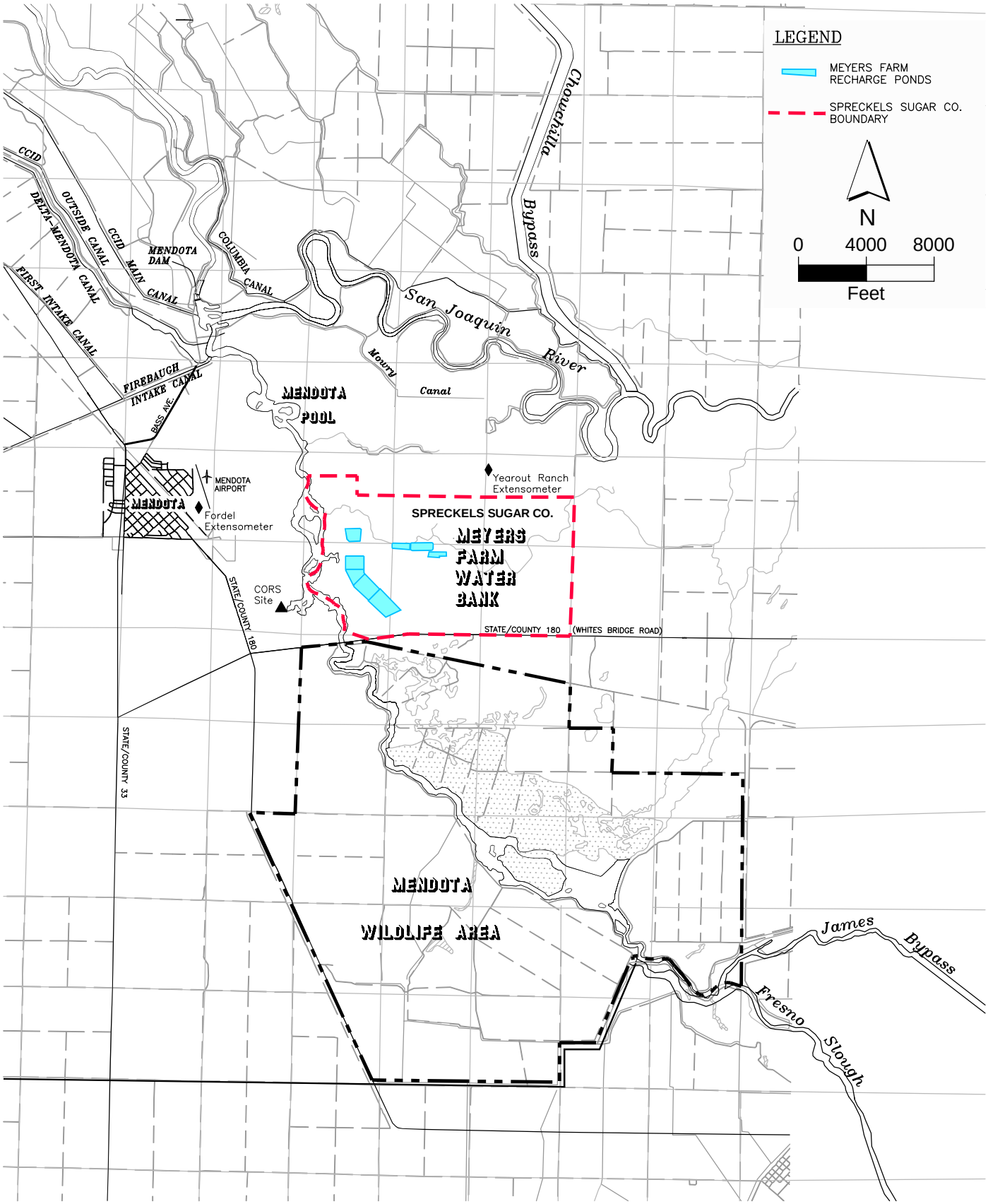
U.S. Bureau of Reclamation. *2007 Supplement to Meyers Farm Water Banking Project EA, Mendota, CA (SEA Number 07-102).* Fresno, CA.

U.S. Bureau of Reclamation. 2009. *Meyers Farm Water Banking Project Addition of Banta Carbona Irrigation District Supplies (SEA Number 09-062).* Fresno, CA.

Attachments

Figures

Tables



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LUHDORFF & SCALMANINI CONSULTING ENGINEERS

Figure 1
Meyers Farm Water Bank
Location Map

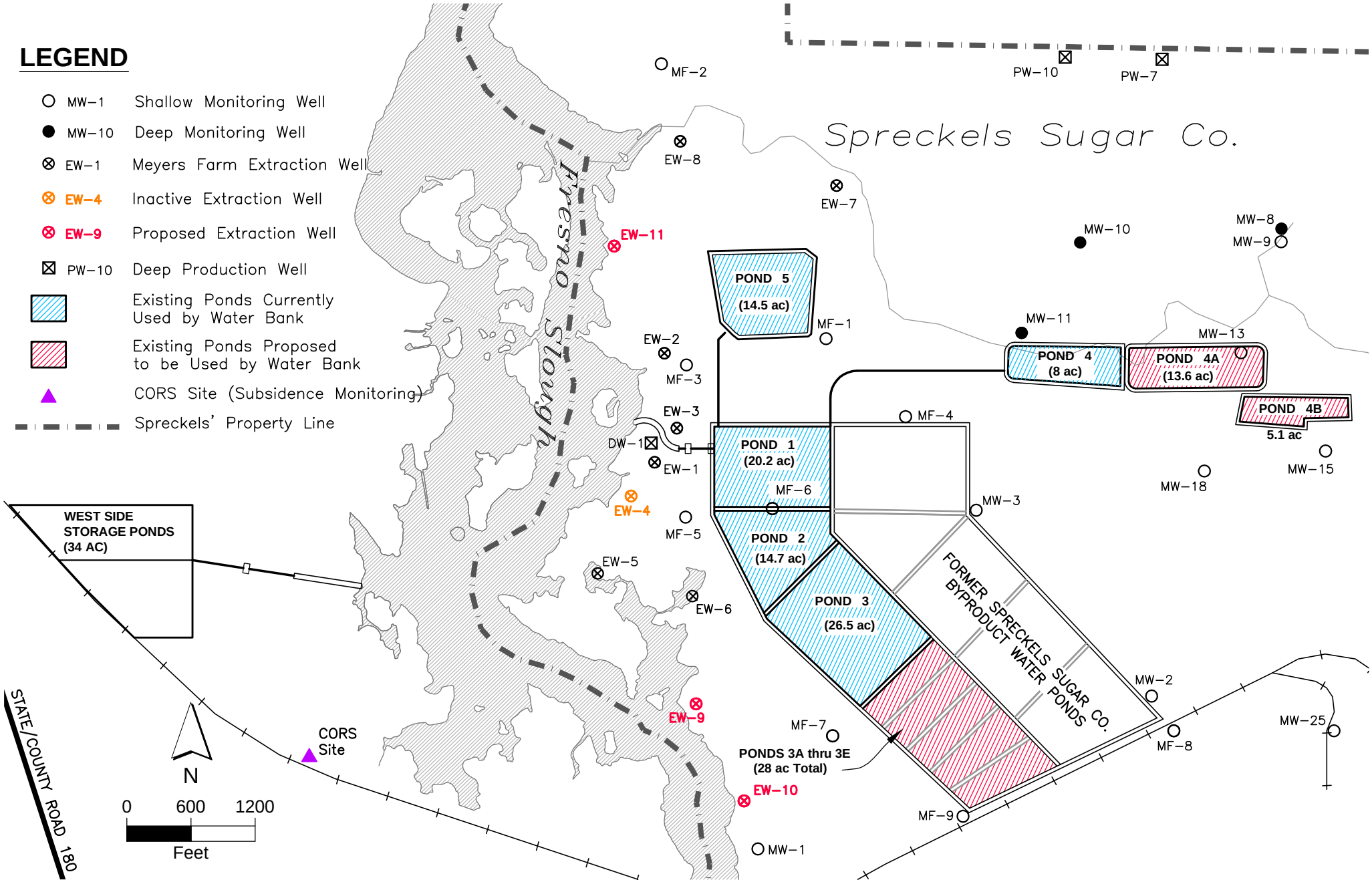

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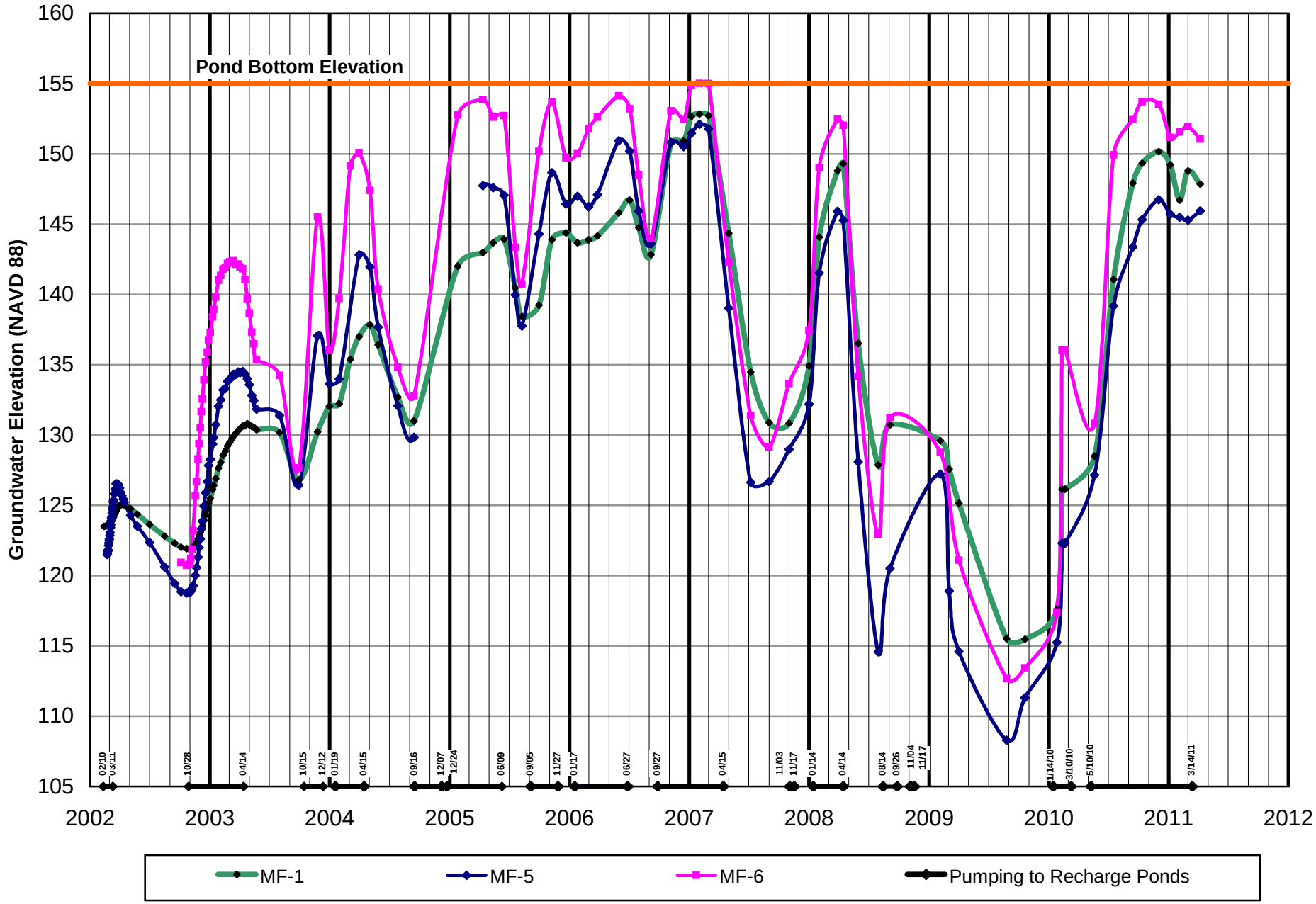
Figure 2
Existing and Proposed Facilities at Meyers Farm Water Bank



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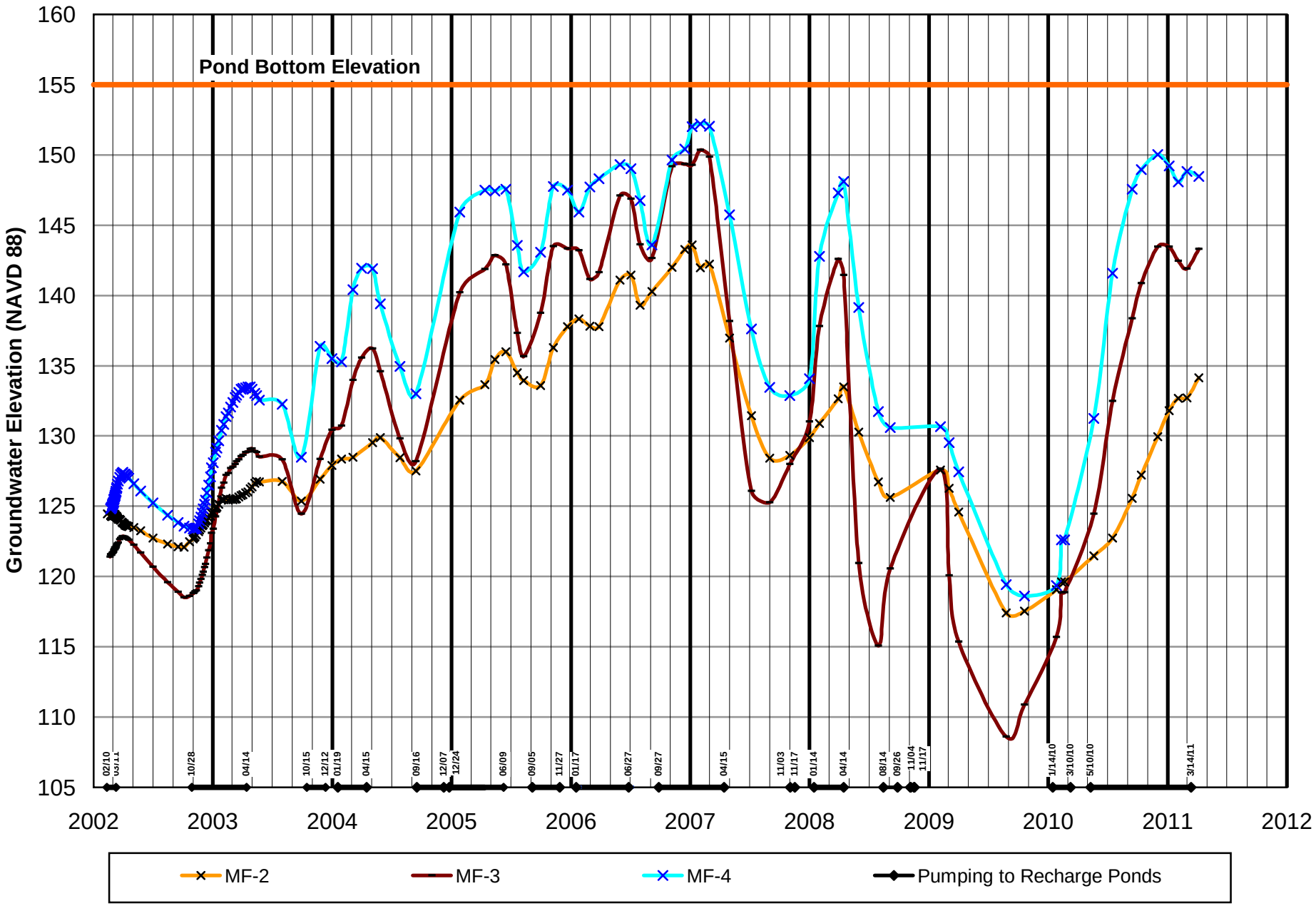
LUHDORFF & SCALMANINI
CONSULTING ENGINEERS

Figure 3
Hydrograph of Meyers Farm Monitoring Wells in Vicinity of Water Bank



Y:\Meyers Farm\Data & Tables\Groundwater Levels\Groundwater Levels 2010.xls\AnnRpt Fig 3

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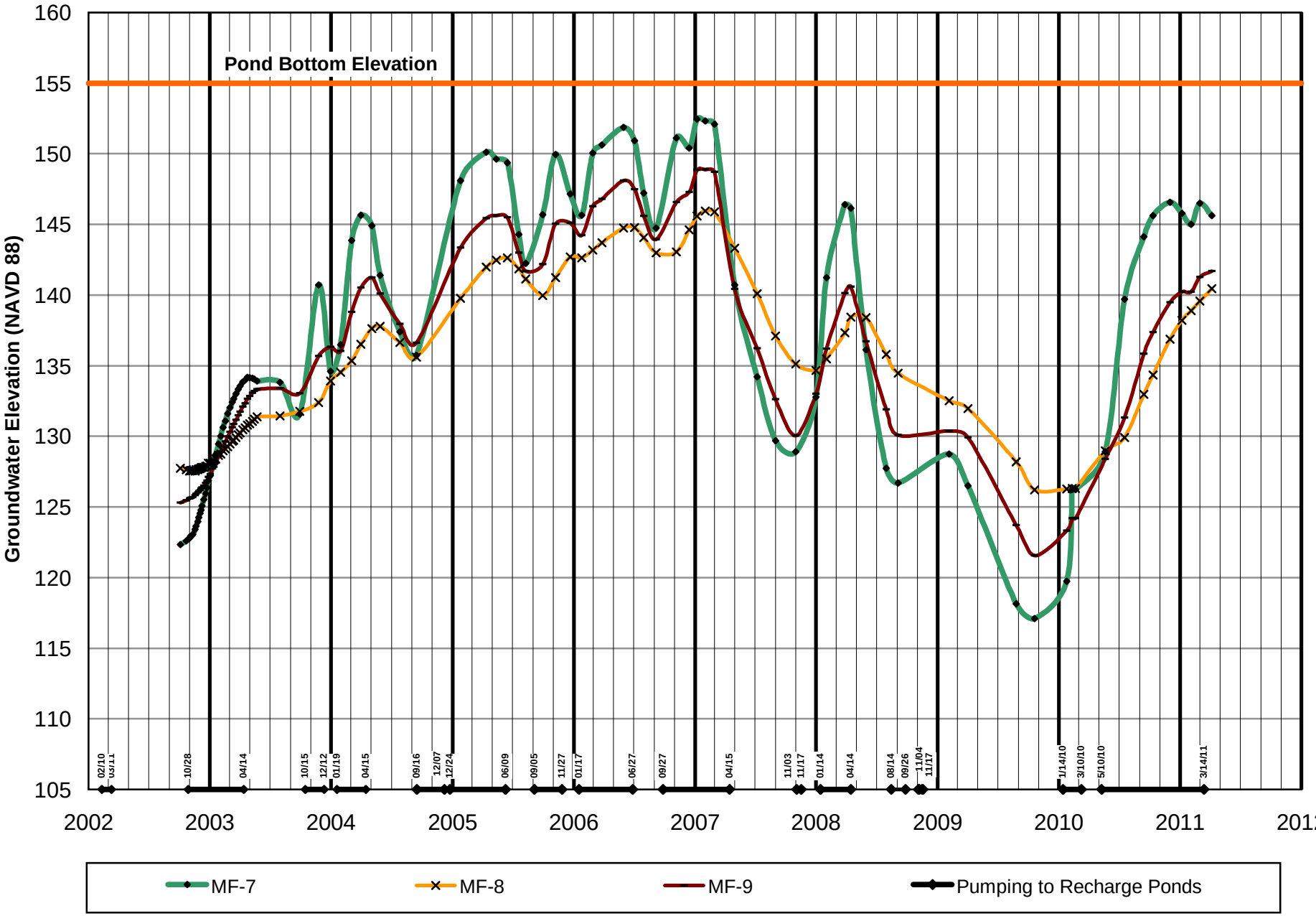
Figure 4
Hydrograph of Meyers Farm Monitoring Wells in Vicinity of Water Bank



Y:\Meyers Farm\Data & Tables\Groundwater Levels\Groundwater Levels 2010.xls\AnnRpt Fig 4

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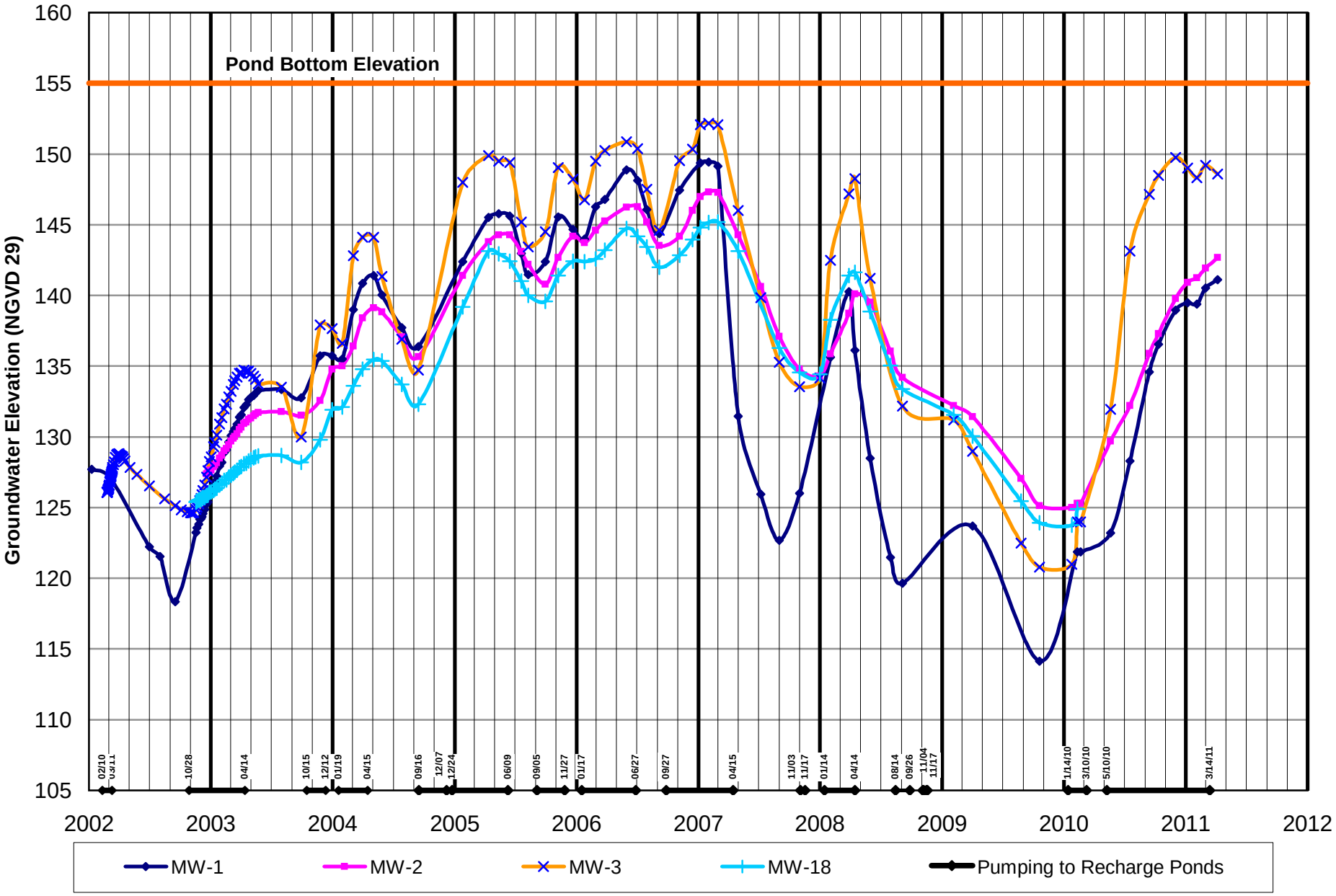
Figure 5
Hydrograph of Meyers Farm Monitoring Wells in Vicinity of Water Bank



Y:\Meyers Farm\Data & Tables\Groundwater Levels\Groundwater Levels 2010.xls\AnnRpt Fig 4

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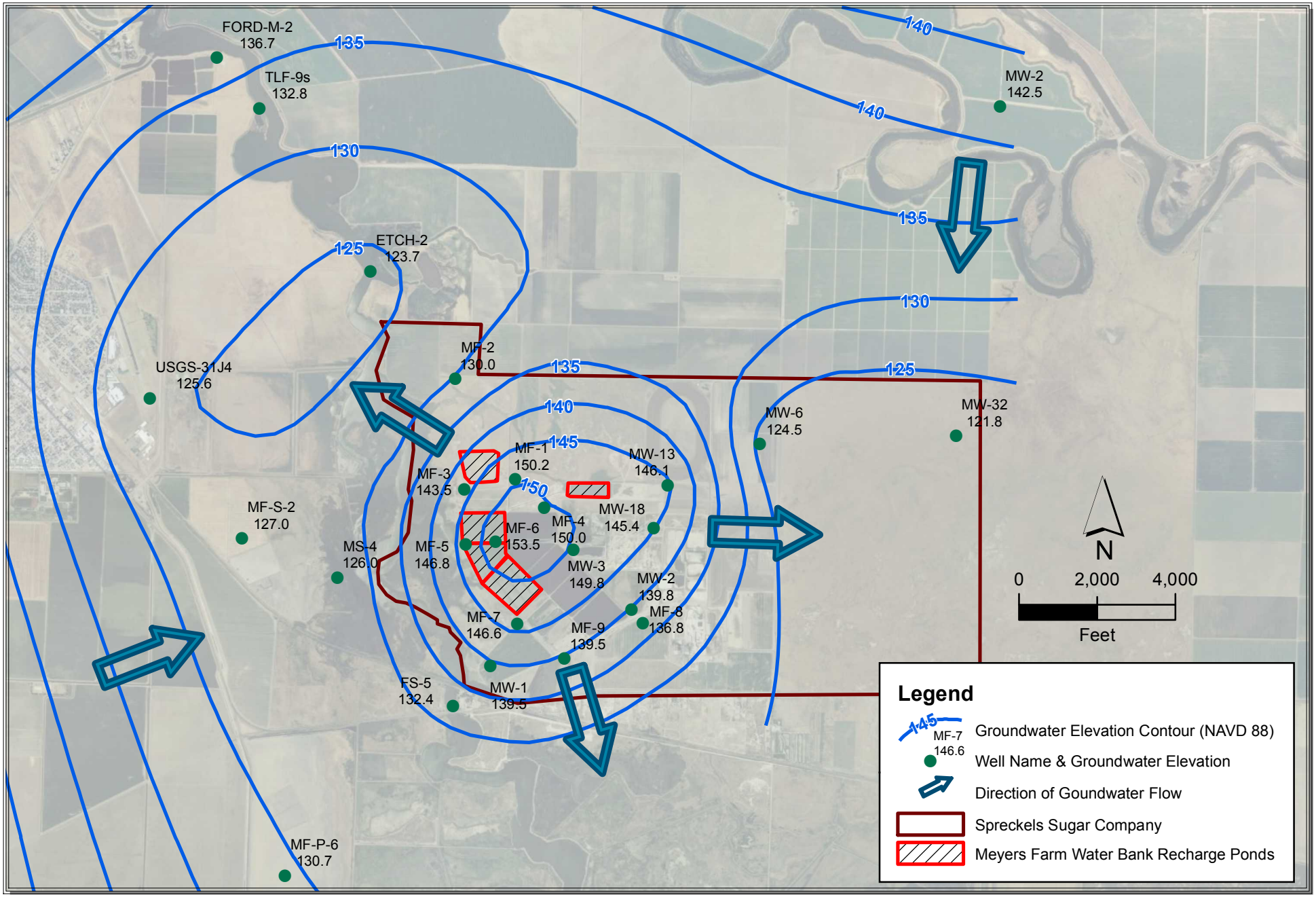
Figure 6
Hydrograph of Spreckels Sugar Co.
Monitoring Wells in Vicinity of Water Bank



Path: C:\Users\tnguyen.LSCEDOMAIN\Desktop\Job files\Mendota\gis\map files\042011\Contour of GWE in Shallow Wells.mxd

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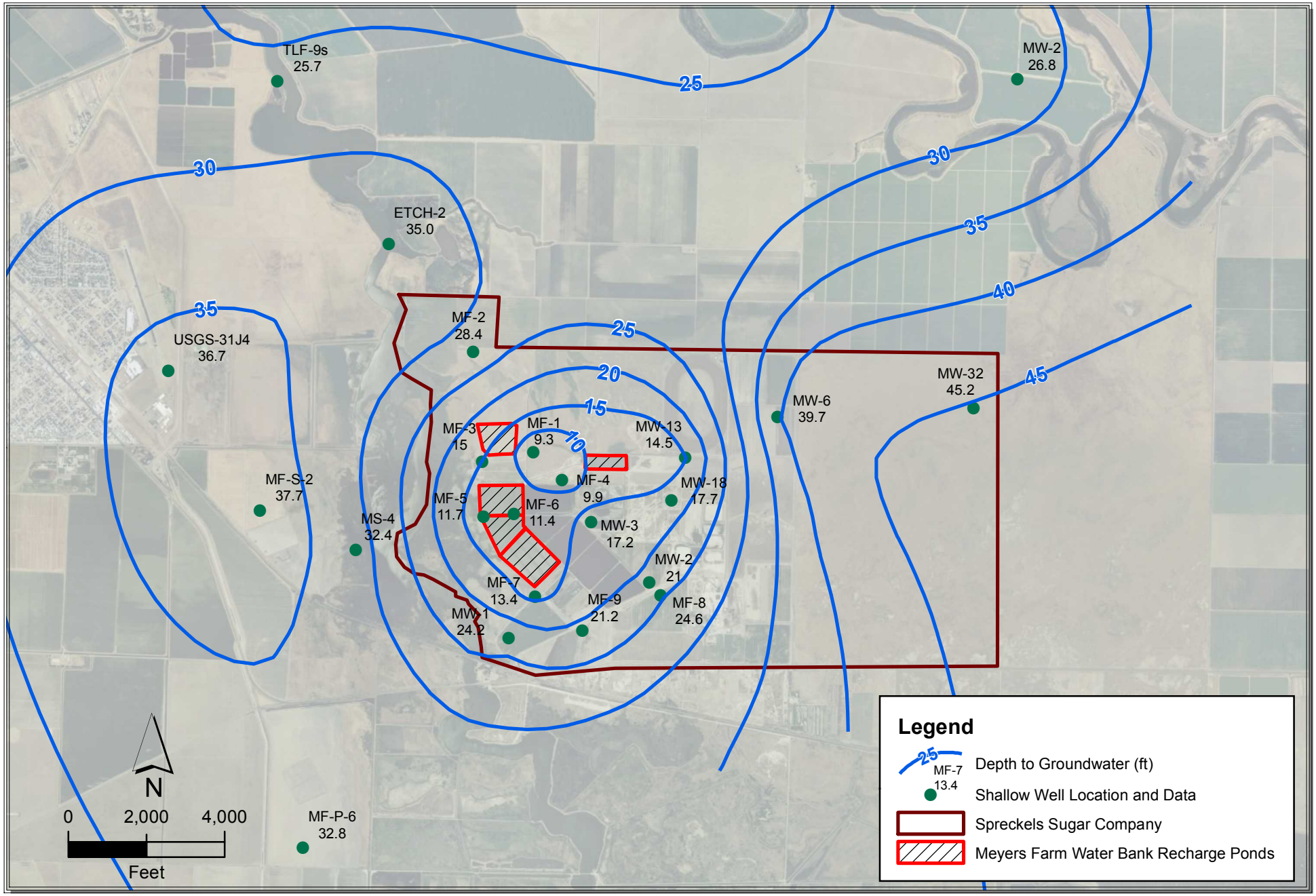
Figure 7
Groundwater Elevations and Flow Directions in the Shallow Aquifer: January 2011



Path: C:\Users\tnguyen.LSCEDOMAIN\Desktop\Job files\Mendota\gis\map files\042011\Depth to GW January 2011.mxd

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Figure 8
Depth to Groundwater in Shallow Wells: January 2011

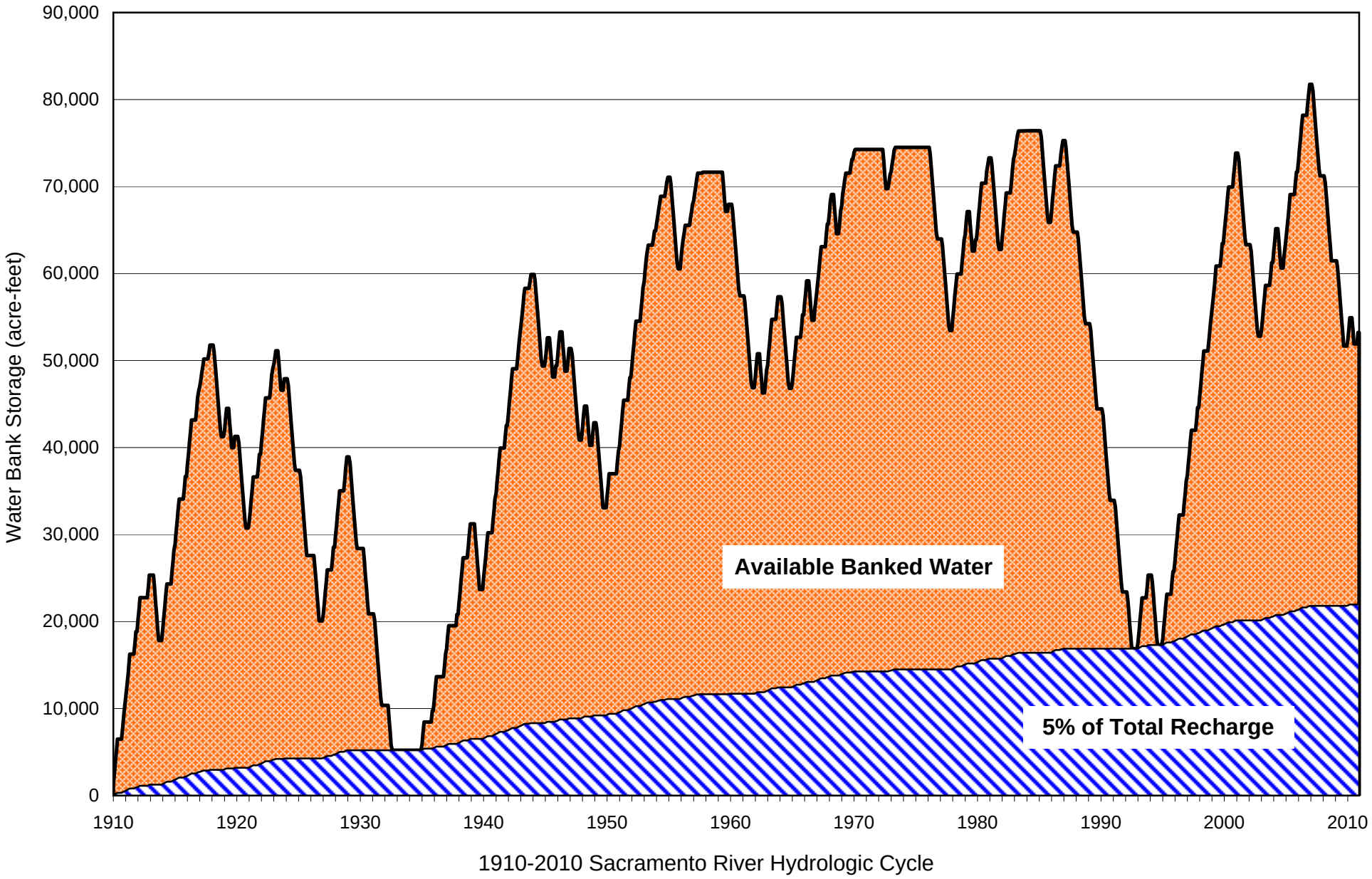

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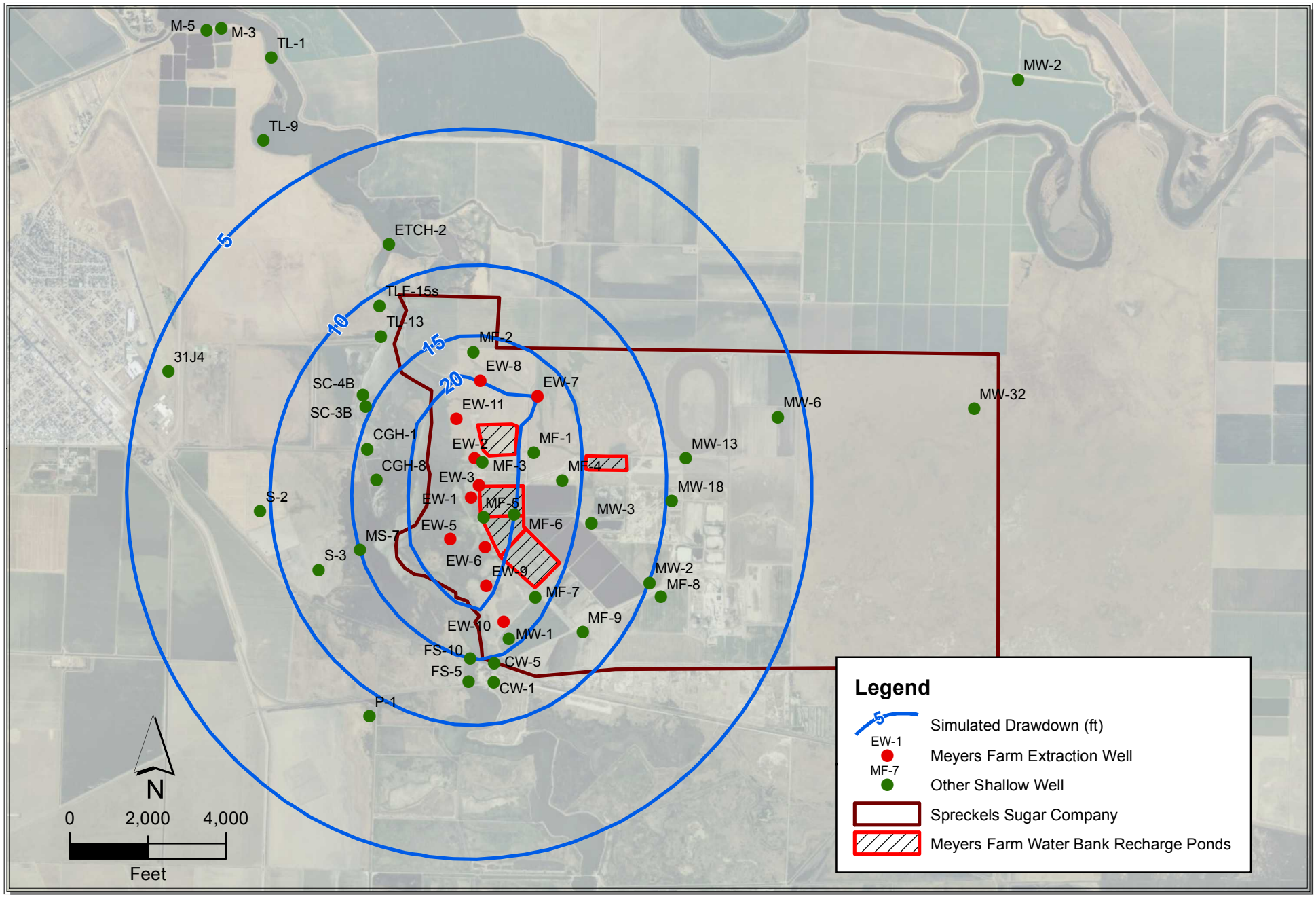
Figure 9
Potential Cumulative Banked Water in Meyers Farm Water Bank



Path: C:\Users\tnguyen.LSCEDOMAIN\Desktop\Job files\Mendota\gis\map files\042011\Maximum Simulated Drawdown Contour.mxd

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Figure 10
Maximum Simulated Drawdown Due to Extraction of 10,526 af from Meyers Farm Water Bank

Table 1
Recharge, Extraction, and Banked Water at Meyers Farm Water Bank

Calendar Year	Pumpage to Recharge Ponds[1] (af)	5% of Total Recharge (af)	Extraction (af)	Available Banked Water[2] (af)
2001	49	2	0	47
2002	1,431	72	0	1,406
2003	2,502	125	0	3,783
2004	4,804	240	0	8,347
2005	4,976	249	0	13,074
2006	4,714	236	0	17,552
2007	2,008	100	655	18,805
2008	5,078	254	2,105	21,524
2009	1	0	5,771	15,754
2010	12,798	640	13	27,899
2011[3]	3,774	189	0	31,484
Total	**42,135**	**2,107**	**8,544**	**31,484**

1. Water pumped from Mendota Pool to recharge ponds.
2. Water available for extraction by the Bank.
3. Totals through May 31, 2011.

Table 2
Meyers Farm Water Bank Recharge and Extraction Scenario[1] (acre-feet)

Pool Open All Year:

	Wet			Above Normal			Below Normal				Dry			Critically Dry	
	Recharge (Based on Storage)		Extraction (Not Based	Recharge (Based on Storage)		Extraction (Not Based	Recharge (Based on Storage)		Extraction (Based on Storage)		Recharge (Not Based	Extraction (Based on Storage)		Recharge (Not Based	Extraction (Not Based
Month	<40,000	>40,000	on Storage)	<40,000	>40,000	on Storage)	<40,000	>40,000	<30,000	>30,000	on Storage)	<30,000	>30,000	on Storage)	on Storage)
Jan	1,300	800	0	1,300	800	0	1,300	800	0	0	0	0	0	0	0
Feb	1,300	800	0	1,300	800	0	1,300	800	0	0	0	0	0	0	0
Mar	1,300	800	0	1,300	800	0	1,300	800	0	0	0	0	752	0	752
Apr	1,300	800	0	1,300	800	0	0	0	0	0	0	0	1,504	0	1,504
May	1,300	800	0	1,300	800	0	0	0	0	0	0	1,504	1,504	0	1,504
Jun	0	0	0	0	0	0	0	0	0	1,504	0	1,504	1,504	0	1,504
Jul	0	0	0	0	0	0	0	0	0	1,504	0	1,504	1,504	0	1,504
Aug	0	0	0	0	0	0	0	0	0	1,504	0	1,504	1,504	0	1,504
Sep	0	0	0	0	0	0	0	0	0	0	0	1,504	1,504	0	1,504
Oct	1,300	800	0	1,300	800	0	0	0	0	0	0	0	752	0	752
Nov	1,300	800	0	1,300	800	0	1,300	800	0	0	0	0	0	0	0
Dec	1,300	800	0	1,300	800	0	1,300	800	0	0	0	0	0	0	0
Total	**10,400**	**6,400**	**0**	**10,400**	**6,400**	**0**	**6,500**	**4,000**	**0**	**4,512**	**0**	**7,520**	**10,526**	**0**	**10,526**

Pool Closed for Dam Maintenance:

	Wet			Above Normal			Below Normal				Dry			Critically Dry	
	Recharge (Based on Storage)		Extraction (Not Based	Recharge (Based on Storage)		Extraction (Not Based	Recharge (Based on Storage)		Extraction (Based on Storage)		Recharge (Not Based	Extraction (Based on Storage)		Recharge (Not Based	Extraction (Not Based
Month	<40,000	>40,000	on Storage)	<40,000	>40,000	on Storage)	<40,000	>40,000	<30,000	>30,000	on Storage)	<30,000	>30,000	on Storage)	on Storage)
Jan	650	400	0	650	400	0	650	400	0	0	0	0	0	0	0
Feb	1,300	800	0	1,300	800	0	1,300	800	0	0	0	0	0	0	0
Mar	1,300	800	0	1,300	800	0	1,300	800	0	0	0	0	752	0	752
Apr	1,300	800	0	1,300	800	0	0	0	0	0	0	0	1,504	0	1,504
May	1,300	800	0	1,300	800	0	0	0	0	0	0	1,504	1,504	0	1,504
Jun	0	0	0	0	0	0	0	0	0	1,504	0	1,504	1,504	0	1,504
Jul	0	0	0	0	0	0	0	0	0	1,504	0	1,504	1,504	0	1,504
Aug	0	0	0	0	0	0	0	0	0	1,504	0	1,504	1,504	0	1,504
Sep	0	0	0	0	0	0	0	0	0	0	0	1,504	1,504	0	1,504
Oct	1,300	800	0	1,300	800	0	0	0	0	0	0	0	752	0	752
Nov	1,300	800	0	1,300	800	0	1,300	800	0	0	0	0	0	0	0
Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**8,450**	**5,200**	**0**	**8,450**	**5,200**	**0**	**4,550**	**2,800**	**0**	**4,512**	**0**	**7,520**	**10,526**	**0**	**10,526**

1. Table 2 shows one scenario of how the Bank might operate based on different year types and storage volumes. Recharge and extraction amounts shown in this table are not considered limits except that the maximum annual extraction rate cannot exceed 10,526 af and the cumulative available water in storage cannot exceed 60,000 af.

Table 3
Capacities of Meyers Farm Extraction Wells (gpm)

Well Type	Well ID	2009 Capacity			Projected Capacity
		Start	End	Average	
Existing Wells	EW-1	1,000	300	650	
	EW-2	1,600	1,300	1,450	
	EW-3	1,300	650	975	
	EW-4	Pump Removed			
	EW-5	1,350	800	1,075	
	EW-6	1,700	900	1,300	
	EW-7	1,600	1,500	1,550	
	EW-8	1,500	1,450	1,475	
	Average	**1,436**	**986**	**1,211**	
Proposed Wells	EW-9				1,200
	EW-10				1,200
	EW-11				1,200

DRAFT ENVIRONMENTAL ASSESSMENT (11-013)

AMENDMENT TO THE MEYERS GROUNDWATER BANKING EXCHANGE AGREEMENT

Appendix B
Water Quality Standards and Monitoring Requirments

July 2012

EXHIBIT C

Water Quality Standards and Monitoring

RECLAMATION CONTRACTUAL WATER QUALITY STANDARDS AT MENDOTA POOL

DAILY: The quality of water shall not exceed a mean daily value of eight hundred (800) parts per million of total dissolved solids (TDS). The mean daily values are computed by weighting the instantaneous values on the basis of time of occurrence during each day.

MONTHLY: The quality of water shall not exceed a mean monthly value of six hundred (600) parts per million of TDS. The mean monthly value is computed by weighting each mean daily value of TDS on a basis of the quantity of water delivered each day of the month.

ANNUAL: The quality of water shall not exceed a mean annual value of four hundred and fifty (450) parts per million of TDS. The mean annual value is computed by weighting each mean daily value of TDS on the basis of quantity of water delivered each day of the year.

FIVE YEAR: the average quality of water for any five (5) consecutive years shall not exceed a mean value of four hundred (400) parts per million of TDS. The 5-year average shall be computed by weighting each mean daily value of TDS on the basis of water delivered each day of the five (5) consecutive years ending with the current year.

MONITORING

Groundwater levels in monitoring wells installed near the Fresno Slough will be monitored during periods of extraction to determine if a direct hydraulic connection exists between shallow groundwater and surface water in the Fresno Slough as provided under Appendix A (Meyers Farms Monitoring Program) in the Environmental Assessment (EA) titled Meyers Farm Water Banking Project, EA number 05-09.

In addition to the foregoing, Meyers shall comply with the water quality requirements (both monitoring and mitigation) set forth in the Environmental Assessment titled Meyers Farm Water Banking Project, EA number 05-09 and the associated Finding of No Significant Impact dated May 2005. Including the Finding of No Significant Impact and Supplemental Environmental Assessment (No. 07-102), 2007, Supplement to Meyers Farm Water Banking Project EA - Mendota, CA. October 2007

DRAFT ENVIRONMENTAL ASSESSMENT (11-013)

AMENDMENT TO THE MEYERS GROUNDWATER BANKING EXCHANGE AGREEMENT

Appendix C
Meyers Groundwater Testing Results

July 2012

Table 5
Summary of Groundwater Quality Laboratory Results for Meyers Farm Monitoring Program

								Cations				Anions					Trace Elements								
Well Owner and Name	Date	Lab[1]	EC[2] (µmhos/cm)	TDS (mg/L)	pH	Total Alkalinity[3] (mg/L)	SAR	Ca (mg/L)	Mg (mg/L)	Na (mg/L)	K (mg/L)	SO_4 (mg/L)	Cl (mg/L)	HCO_3[3] (mg/L)	NO_3[3] (mg/L)	F (mg/L)	As (µg/L)	B (mg/L)	Ba (mg/L)	Cu (mg/L)	Fe (mg/L)	Mn (mg/L)	Mo (µg/L)	Se (µg/L)	Zn (mg/L)
Meyers Farm																									
MF-1	10/27/2000	TL	1700	1100	-	-	-	-	-	-	-	-	200	-	-	-	-	0.24	-	-	-	-	-	<5	-
MF-1	3/26/2002	FGL	2170	1370	7.0	490	6.4	82	50	296	8	270	220	600	3.2	<0.1	<10	0.2	0.134	<0.01	3.66	1.36	-	<10	<0.02
MF-1	4/23/2002	TL	1800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-1	9/17/2002	TL	2100	1300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-1	12/13/2002	UNK	2000	1200	7.7	460	-	65	37	270	5	220	230	460	ND	ND	-	0.2	0.12	-	ND	1	-	-	-
MF-1	1/3/2003	TL	-	1300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-1	1/13/2003	TL	2100	1300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-1	4/12/2003	BSK	1700	1000	7.4	680	-	60	28	260	7	<40	170	680	<0.2	<2	-	-	0.21	-	<0.05	0.62	-	-	-
MF-1	9/30/2003	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<3	-	-	-	-	-	4.15	<0.4	-
MF-1	9/30/2003	TL	1700	1200	7.0	650	-	73	39	310	18	66	170	790	<0.4	-	-	0.24	0.26	<0.05	2.4	1.1	-	-	<0.05
MF-1	3/5/2004	TL	2200	1400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-1	4/2/2004	UNK	2300	1400	1.6	1000	-	140	74	320	9	ND	260	1000	ND	ND	-	0.3	0.26	-	0.96	2.1	-	-	-
MF-1	11/17/2004	BSK	2000	1200	7.6	850	-	100	59	280	6	30	210	850	<0.2	0.3	-	0.3	0.19	-	<0.05	1.5	-	-	-
MF-1	3/3/2005	TL	1800	1100	-	-	-	-	-	-	-	-	-	-	-	-	-	0.31	-	-	-	1.3	<5	-	-
MF-1	3/23/2005	UNK	1800	1100	-	-	-	-	-	-	-	-	-	-	-	-	-	0.31	-	-	-	1.3	ND	-	-
MF-1	8/10/2005	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	-	-	-	-	5.1	<0.4	-
MF-1	8/10/2005	TL	1300	870	7.2	480	-	46	29	240	13	54	150	590	<2	-	-	0.3	0.14	<0.005	2.2	0.8	-	-	<0.005
MF-1	9/1/2005	UNK	1300	870	7.2	480	-	46	29	240	13	54	150	590	-	-	0.14	ND	-	ND	2.2	0.8	0.57	ND	ND
MF-1	4/20/2006	TL	950	630	7.2	290	-	27	16	190	8.1	65	130	-	<2	-	-	-	-	<0.005	2	0.44	-	-	<0.005
MF-1	9/26/2006	TL	1400	880	7.2	480	-	42	25	250	14	59	160	-	<10	-	19	0.34	0.14	<0.005	2.6	0.88	6.1	<20	0.0059
MF-1	3/28/2007	TL	1500	900	7.3	440	-	41	21	290	14	90	200	530	-	-	ND	0.36	0.17	ND	1.4	0.75	8.2	ND	ND
MF-1	9/24/2007	TL	1300	810	7.4	380	-	32	18	260	12	72	150	460	-	-	ND	0.29	0.13	ND	0.42	0.47	-	-	ND
MF-1	4/6/2008	BCL	937	550	7.64	190	-	22	13	170	5.6	90	120	240	1.8	-	-	-	-	0.0009	0.17	0.23	-	-	0.0061
MF-1	9/3/2008	BCL	1260	740	7.46	-	-	37	20	200	4.5	73	150	450	-	-	3.1	0.071	0.11	0.0073	0.34	0.82	-	-	0.0058
MF-1	9/3/2008	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.77	<0.4	-
MF-1	4/2/2009	BCL	1200	840	7.51	310	-	32	20	230	5.3	110	160	380	-	-	-	-	-	0.0015	0.42	0.55	-	-	0.0053
MF-1	10/20/2009	BCL	1250	780	7.54	370	-	46	26	210	4.9	93	170	450	<0.4	-	9.8	0.28	0.12	0.0014	1.5	0.77	-	-	0.0067
MF-1	10/20/2009	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.95	<0.4	-
MF-1	5/12/2010	BCL	1290	840	7.73	360	-	45	25	210	4.7	85	160	440	0.69	-	-	-	-	0.001	1.1	0.64	-	-	0.0043
MF-1	9/14/2010	BCL	492	310	7.53	92	-	13	7.3	84	3.4	51	62	110	0.071	-	2	0.27	0.033	0.00085	0.15	0.059	-	-	0.0045
MF-1	9/14/2010	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.75	<0.4	-
MF-2	10/27/2000	TL	1700	1000	-	-	-	-	-	-	-	-	220	-	-	-	-	0.27	-	-	-	-	-	<5	-
MF-2	3/26/2002	FGL	2450	1500	7.1	670	8	93	37	361	7	153	310	810	<0.4	<0.1	<10	0.29	0.243	<0.01	0.16	1	-	<10	<0.02
MF-2	4/23/2002	TL	2300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-2	4/23/2002	UNK	2300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-2	9/17/2002	TL	2300	1300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-2	12/13/2002	UNK	2300	1300	7.6	560	-	95	39	300	5	180	310	560	ND	ND	-	0.3	0.2	-	ND	1.2	-	-	-
MF-2	1/3/2003	TL	-	1100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-2	1/13/2003	TL	2500	1100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-2	4/12/2003	BSK	2400	1400	7.5	610	-	110	49	300	7	190	350	610	<0.2	<3	-	0.2	0.18	-	<0.05	1.3	-	-	-
MF-2	9/30/2003	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<3	-	-	-	-	-	3.9	<0.4	-
MF-2	9/30/2003	TL	2500	1600	7.1	570	-	110	48	400	17	190	330	700	<0.4	-	-	0.27	0.2	<0.05	0.11	1.2	-	-	<0.05
MF-2	12/31/2003	TL	2200	1400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-2	3/5/2004	TL	2100	1400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-2	4/2/2004	UNK	2200	1400	7.7	580	-	110	44	340	8	230	300	580	ND	ND	-	0.3	0.11	-	ND	1.1	-	-	-
MF-2	11/17/2004	BSK	1900	1200	7.7	490	-	100	46	280	7	250	230	490	<0.2	<0.1	-	0.2	0.08	-	<0.05	1.1	-	-	-

Table 5 (continued)
Summary of Groundwater Quality Laboratory Results for Meyers Farm Monitoring Program

								Cations				Anions					Trace Elements								
Well Owner and Name	Date	Lab[1]	EC[2] (µmhos/cm)	TDS (mg/L)	pH	Total Alkalinity[3] (mg/L)	SAR	Ca (mg/L)	Mg (mg/L)	Na (mg/L)	K (mg/L)	SO_4 (mg/L)	Cl (mg/L)	HCO_3[3] (mg/L)	NO_3[3] (mg/L)	F (mg/L)	As (µg/L)	B (mg/L)	Ba (mg/L)	Cu (mg/L)	Fe (mg/L)	Mn (mg/L)	Mo (µg/L)	Se (µg/L)	Zn (mg/L)
MF-2	3/3/2005	TL	220	1300	-	-	-	-	-	-	-	-	-	-	-	-	-	0.27	-	-	-	1	5.3	-	-
MF-2	3/23/2005	UNK	2200	1300	-	-	-	-	-	-	-	-	-	-	-	-	-	0.27	-	-	-	1	5.3	-	-
MF-2	8/10/2005	TL	1600	1100	7.1	430	-	73	31	290	13	180	210	530	3.5	-	-	0.25	0.088	<0.005	<0.1	0.8	-	-	<0.005
MF-2	8/10/2005	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<6	-	-	-	-	-	5.6	<0.4	-
MF-2	9/1/2005	UNK	1600	1100	7.1	430	-	73	31	290	13	180	210	530	-	-	ND	0.25	0.088	-	ND	0.8	5.6	ND	ND
MF-2	4/20/2006	TL	1600	1000	7.0	400	-	83	41	240	14	210	180	-	<2	-	-	-	-	<0.005	<0.1	1	-	-	<0.005
MF-2	9/26/2006	TL	1200	780	7.3	300	-	56	27	180	11	140	130	-	11	-	<10	0.2	0.19	<0.005	0.14	0.45	7.4	<20	<0.005
MF-2	3/28/2007	TL	920	560	7.3	230	-	34	15	160	8.7	110	110	280	-	-	ND	0.22	0.096	ND	ND	0.23	6.5	ND	ND
MF-2	9/24/2007	TL	840	510	7.2	200	-	38	17	130	7	93	100	240	-	-	ND	0.25	0.094	ND	0.18	0.61	-	-	ND
MF-2	7/10/2008	BCL	977	550	7.46	220	-	51	22	130	5.7	85	120	270	-	-	-	-	-	0.0027	0.24	0.62	-	-	0.0078
MF-2	9/3/2008	BCL	864	510	7.3	-	-	44	19	100	4.3	92	110	240	-	-	ND	0.26	0.083	0.0028	0.064	0.42	-	-	0.0088
MF-2	9/3/2008	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.45	<0.4	-
MF-2	4/2/2009	BCL	1090	730	7.29	300	-	60	26	160	5.5	92	140	360	-	-	-	-	-	0.0017	0.11	0.41	-	-	0.0046
MF-2	10/20/2009	BCL	1560	960	7.37	390	-	85	38	230	6.7	150	220	470	<0.4	-	<2	0.24	0.18	0.0017	0.48	0.92	-	-	0.0059
MF-2	10/20/2009	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.15	<0.4	-
MF-2	5/20/2010	BCL	1560	1000	7.39	370	-	92	41	210	7.7	190	210	450	0.23	-	-	-	-	0.002	0.16	0.75	-	-	0.0074
MF-2	9/14/2010	BCL	1400	920	7.31	260	-	79	37	200	6.1	270	160	320	2.7	-	ND	0.26	0.088	0.0016	0.13	0.98	-	-	0.0067
MF-2	9/14/2010	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.1	ND	-
MF-3	3/26/2002	FGL	1810	1100	7.1	620	5.8	60	51	253	5	103	160	760	<0.4	0.1	<10	0.23	0.059	<0.01	0.65	2.01	-	<10	<0.02
MF-3	4/23/2002	TL	1800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-3	9/17/2002	TL	2100	1200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-3	12/13/2002	UNK	2200	1200	7.6	650	-	78	68	260	3	140	280	650	ND	ND	-	0.3	0.16	-	ND	2.8	-	-	-
MF-3	1/3/2003	TL	-	1500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-3	1/13/2003	TL	2500	1500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-3	4/12/2003	BSK	2800	1700	7.5	880	-	77	65	360	4	95	400	880	<0.2	<3	-	0.3	0.2	-	<0.05	2.9	-	-	-
MF-3	9/30/2003	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<3	-	-	-	-	-	3.05	<0.4	-
MF-3	9/30/2003	TL	3000	1600	7.0	980	-	68	56	570	12	83	400	1200	<0.4	-	-	0.39	0.24	<0.05	2.9	2.5	-	-	<0.05
MF-3	12/31/2003	TL	2500	1500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-3	3/4/2004	TL	2000	1300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-3	4/2/2004	UNK	1800	1100	7.8	550	-	29	21	320	3	91	230	550	ND	ND	-	0.4	0.08	-	0.24	1.1	-	-	-
MF-3	11/17/2004	BSK	1100	690	7.9	310	-	15	10	220	2	90	130	310	<0.2	0.3	-	0.3	<0.05	-	0.5	0.56	-	-	-
MF-3	3/2/2005	TL	1000	620	-	-	-	-	-	-	-	-	-	-	-	-	-	0.37	-	-	-	0.41	14	-	-
MF-3	3/21/2005	UNK	1000	620	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-3	8/10/2005	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<6	-	-	-	-	-	10.9	<0.4	-
MF-3	8/10/2005	TL	1100	780	7.5	340	-	14	11	260	3.8	64	67	410	<2	-	-	0.42	0.03	<0.005	0.58	0.56	-	-	<0.005
MF-3	9/1/2005	UNK	1100	780	7.5	340	-	14	11	260	3.8	64	67	410	-	-	ND	0.42	0.03	ND	0.58	0.56	0.11	ND	ND
MF-3	4/20/2006	TL	1000	680	7.5	250	-	11	8.8	240	3.7	130	110	-	<2	-	-	-	-	<0.005	0.46	0.45	-	-	<0.005
MF-3	9/26/2006	TL	950	610	7.7	240	-	13	9.3	190	3.5	97	90	-	<10	-	<10	0.37	0.017	<0.005	0.46	0.5	12	<20	<0.005
MF-3	3/28/2007	TL	720	450	7.6	380	-	9	7	150	2.7	79	75	470	-	-	ND	0.35	0.015	ND	0.37	0.38	11	ND	ND
MF-3	9/25/2007	TL	1500	970	7.2	370	-	42	35	270	7.8	160	170	450	-	-	ND	0.34	0.12	ND	5.6	1.9	-	-	0.12
MF-3	4/6/2008	BCL	1960	1200	7.49	480	-	41	35	360	4.5	140	270	590	<0.4	-	-	-	-	0.00058	3.4	1.9	-	-	0.0074
MF-3	9/3/2008	BCL	924	570	7.58	-	-	11	8.9	160	2	140	110	180	-	-	ND	0.23	0.038	0.0016	0.9	0.48	-	-	0.0095
MF-3	9/3/2008	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20.3	<0.4	-
MF-3	4/2/2009	BCL	1370	1000	7.48	240	-	26	22	280	3.1	250	160	300	-	-	-	-	-	0.00069	1.9	1.1	-	-	0.0055
MF-3	10/21/2009	BCL	872	540	7.35	130	-	22	19	150	2.4	130	120	150	<0.4	-	<2	0.28	0.058	0.0014	1.8	0.77	-	-	0.0055
MF-3	10/21/2009	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	<0.4	-
MF-3	5/12/2010	BCL	1130	720	7.69	210	-	21	18	180	2.8	160	140	250	ND	-	-	-	-	0.0012	1.7	0.94	-	-	0.0046

Table 5 (continued)
Summary of Groundwater Quality Laboratory Results for Meyers Farm Monitoring Program

								Cations				Anions					Trace Elements								
Well Owner and Name	Date	Lab[1]	EC[2] (µmhos/cm)	TDS (mg/L)	pH	Total Alkalinity[3] (mg/L)	SAR	Ca (mg/L)	Mg (mg/L)	Na (mg/L)	K (mg/L)	SO_4 (mg/L)	Cl (mg/L)	HCO_3[3] (mg/L)	NO_3[3] (mg/L)	F (mg/L)	As (µg/L)	B (mg/L)	Ba (mg/L)	Cu (mg/L)	Fe (mg/L)	Mn (mg/L)	Mo (µg/L)	Se (µg/L)	Zn (mg/L)
MF-3	9/14/2010	BCL	1420	900	7.59	370	-	21	21	290	3.3	120	180	450	ND	-	1.1	0.36	0.059	0.00077	1.5	0.87	-	-	0.0056
MF-3	9/14/2010	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17.4	ND	-
MF-4	3/27/2002	FGL	2810	1580	6.9	1130	6.3	160	41	343	40	2	270	1380	<0.4	0.2	40	0.28	0.511	<0.01	11.5	2.37	-	<10	<0.02
MF-4	4/23/2002	TL	2000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-4	9/17/2002	TL	2900	1600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-4	12/13/2002	UNK	2900	1500	7.5	1200	-	150	34	300	36	ND	280	1200	ND	ND	-	0.3	0.27	-	0.7	1.8	-	-	-
MF-4	1/3/2003	TL	-	1500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-4	4/12/2003	BSK	2600	1400	7.3	1100	-	150	36	240	39	<60	270	1100	<0.2	<3	-	0.3	0.36	-	<0.05	2.2	-	-	-
MF-4	9/30/2003	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16	-	-	-	-	-	1.2	<0.4	-
MF-4	9/30/2003	TL	2700	1600	7.1	1200	-	180	45	350	62	7.9	270	1500	0.76	-	-	0.3	0.43	<0.05	11	2.8	-	-	<0.05
MF-4	3/4/2004	TL	2600	1500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-4	4/2/2004	UNK	2400	1400	7.6	1000	-	160	42	300	36	ND	260	1000	ND	ND	-	0.4	0.24	-	1.8	2.6	-	-	-
MF-4	11/17/2004	BSK	1900	1100	7.7	760	-	100	30	250	26	24	200	760	<0.2	0.5	-	0.4	0.13	-	<0.05	1.8	-	-	-
MF-4	3/2/2005	TL	1500	850	-	-	-	-	-	-	-	-	-	-	-	-	-	0.31	-	-	-	1.1	<5	-	-
MF-4	8/10/2005	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	75	-	-	-	-	-	2.1	<0.4	-
MF-4	8/10/2005	TL	1300	890	7.2	500	-	72	20	220	28	57	150	610	<2	-	-	0.29	0.17	<0.005	9	1.3	-	-	<0.005
MF-4	9/1/2005	UNK	1300	890	7.2	500	-	72	20	220	28	57	150	610	-	-	74	0.29	0.17	ND	9	1.3	2	ND	ND
MF-4	4/20/2006	TL	1400	820	7.2	490	-	61	16	220	32	49	150	-	<2	-	-	-	-	<0.005	5.9	1.1	-	-	<0.005
MF-4	9/26/2006	TL	1300	770	7.3	450	-	56	15	190	26	41	130	-	<10	-	70	0.33	0.12	<0.005	6.8	1	5.3	<20	0.0057
MF-4	3/28/2007	TL	1400	820	7.3	520	-	76	21	210	23	23	150	630	-	-	73	0.31	0.17	ND	8.1	1.5	5.1	ND	ND
MF-4	9/25/2007	TL	1500	880	7.3	600	-	78	22	230	33	18	150	740	-	-	45	0.33	0.091	ND	8.1	1.4	-	-	ND
MF-4	4/6/2008	BCL	1380	880	7.56	500	-	73	21	190	19	31	140	610	<0.4	-	-	-	-	0.00029	8.4	1.5	-	-	0.0067
MF-4	9/3/2008	BCL	2110	1200	7.45	-	-	130	36	280	30	3.8	210	1100	-	-	64	0.16	0.33	0.0012	11	2	-	-	0.0062
MF-4	9/3/2008	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.03	<0.4	-
MF-4	4/2/2009	BCL	2000	1300	7.43	820	-	120	34	270	28	5.9	200	1000	-	-	-	-	-	0.00047	12	2	-	-	0.005
MF-4	10/21/2009	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	<0.4	-
MF-4	10/21/2009	BCL	1830	990	7.36	730	-	100	28	290	37	2.8	180	890	<0.4	-	56	0.38	0.27	<0.002	9.6	1.3	-	-	0.005
MF-4	5/12/2010	BCL	1750	980	7.64	650	-	82	24	230	27	23	190	790	ND	-	-	-	-	ND	6.2	1.1	-	-	0.0018
MF-4	9/14/2010	BCL	1290	780	7.59	470	-	54	15	220	22	31	140	570	ND	-	49	0.4	0.15	0.00059	5.1	0.71	-	-	0.0046
MF-4	9/14/2010	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.1	ND	-
MF-5	3/27/2002	FGL	2750	1710	6.9	720	7.7	109	55	395	10	270	240	870	<0.4	0.4	<10	0.37	0.216	<0.01	5.85	1.47	-	<10	<0.02
MF-5	4/23/2002	TL	1400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-5	10/1/2002	UNK	3000	1800	7.0	770	-	120	56	460	19	300	330	940	-	-	ND	0.37	0.28	ND	8.6	1.4	-	ND	ND
MF-5	10/10/2002	TL	3000	1800	7.0	770	-	120	56	460	19	300	330	940	<2	-	<10	0.37	0.28	<0.05	8.6	1.4	-	<10	<0.05
MF-5	12/13/2002	UNK	2500	1500	7.2	540	-	89	44	340	9	330	310	540	ND	ND	-	0.4	0.16	-	ND	1.1	-	-	-
MF-5	1/6/2003	UNK	2100	1300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-5	1/13/2003	TL	2100	1300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-5	4/12/2003	BSK	1500	900	7.6	450	-	43	43	190	3	83	200	450	<0.2	<3	-	0.4	0.1	-	<0.05	0.59	-	-	-
MF-5	9/30/2003	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<3	-	-	-	-	-	7.2	<0.4	-
MF-5	9/30/2003	TL	1300	860	7.0	420	-	39	40	230	4.7	80	170	510	<0.4	-	-	0.42	0.1	<0.05	3.6	0.48	-	-	<0.05
MF-5	3/3/2004	UNK	700	410	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-5	3/31/2004	TL	700	410	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-5	4/2/2004	UNK	670	410	7.7	120	-	18	8.3	97	6	52	100	120	ND	ND	-	0.3	ND	-	0.14	0.24	-	-	-
MF-5	5/27/2004	UNK	660	380	6.9	-	-	17	9.5	100	10	60	93	130	-	-	-	-	-	ND	1.5	0.24	-	-	ND
MF-5	11/17/2004	BSK	710	410	7.7	120	-	25	14	95	7	100	84	120	<0.2	0.2	-	0.4	<0.05	-	0.23	0.39	-	-	-
MF-5	3/3/2005	TL	720	410	-	-	-	-	-	-	-	-	-	-	-	-	-	0.26	-	-	-	0.31	7.5	-	-
MF-5	3/23/2005	UNK	720	410	-	-	-	-	-	-	-	-	-	-	-	-	-	0.26	-	-	-	0.31	7.5	-	-

Table 5 (continued)
Summary of Groundwater Quality Laboratory Results for Meyers Farm Monitoring Program

								Cations				Anions					Trace Elements								
Well Owner and Name	Date	Lab[1]	EC[2] (µmhos/cm)	TDS (mg/L)	pH	Total Alkalinity[3] (mg/L)	SAR	Ca (mg/L)	Mg (mg/L)	Na (mg/L)	K (mg/L)	SO_4 (mg/L)	Cl (mg/L)	HCO_3[3] (mg/L)	NO_3[3] (mg/L)	F (mg/L)	As (µg/L)	B (mg/L)	Ba (mg/L)	Cu (mg/L)	Fe (mg/L)	Mn (mg/L)	Mo (µg/L)	Se (µg/L)	Zn (mg/L)
MF-5	8/10/2005	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<6	-	-	-	-	-	6.1	<0.4	-
MF-5	8/10/2005	TL	1200	810	6.8	340	-	42	41	190	5.5	110	150	420	<2	-	-	0.4	0.098	<0.005	4	0.48	-	-	<0.005
MF-5	9/1/2005	UNK	1200	810	6.8	340	-	42	41	190	5.5	110	150	420	-	-	ND	0.4	0.098	ND	4	0.48	6	ND	ND
MF-5	4/20/2006	TL	680	430	7.0	190	-	21	18	120	9	59	86	-	<2	-	-	-	-	<0.005	3.2	0.27	-	-	0.0062
MF-5	9/26/2006	TL	1300	800	7.0	380	-	44	43	200	8	100	150	-	<10	-	<10	0.41	0.13	0.0082	11	0.56	<5	<20	0.025
MF-5	3/28/2007	TL	570	870	7.2	180	-	33	39	81	17	55	51	220	-	-	280	0.28	0.31	0.071	50	0.96	ND	ND	0.17
MF-5	9/25/2007	TL	480	320	7.2	90	-	23	13	59	14	49	72	110	-	-	ND	0.2	0.045	ND	4.3	0.41	-	-	0.0056
MF-5	4/6/2008	BCL	638	490	7.5	120	-	36	20	69	12	66	81	140	<0.4	-	-	-	-	0.0016	6.5	0.51	-	-	0.0091
MF-5	9/3/2008	BCL	1100	680	7.51	-	-	68	39	110	17	140	150	250	-	-	5.6	0.28	0.24	0.001	29	1.2	-	-	0.076
MF-5	9/3/2008	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.9	<0.4	-
MF-5	4/2/2009	BCL	947	730	7.46	150	-	56	28	110	13	150	130	190	-	-	-	-	-	0.006	9	0.68	-	-	0.022
MF-5	10/21/2009	BCL	1300	780	7.33	380	-	43	46	220	4.2	120	150	460	1.8	-	1.6	0.45	0.11	0.011	9.1	0.13	-	-	0.02
MF-5	10/21/2009	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.05	<0.4	-
MF-5	5/12/2010	BCL	1200	740	7.56	190	-	53	36	150	7.9	170	180	240	ND	-	-	-	-	0.0017	3.7	0.56	-	-	0.0062
MF-5	9/14/2010	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.85	ND	-
MF-5	9/14/2010	BCL	483	310	7.52	95	-	19	7.9	72	6.3	52	55	120	ND	-	2	0.34	0.03	0.0008	1.4	0.19	-	-	0.0076
MF-6	10/11/2002	TL	1200	640	7.1	300	-	30	14	200	9	87	130	360	-	-	<10	0.32	0.14	<0.05	0.4	0.4	-	<10	<0.05
MF-6	12/13/2002	UNK	2400	1300	7.2	640	-	55	35	360	2	76	370	640	ND	ND	-	0.4	ND	-	0.7	0.92	-	-	-
MF-6	1/3/2003	TL	-	1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-6	1/13/2003	TL	1800	1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-6	4/12/2003	BSK	2400	1400	7.0	750	-	64	43	340	2	67	360	750	<0.2	<2	-	0.4	0.06	-	0.08	1.3	-	-	-
MF-6	5/20/2003	TL	2300	1400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-6	9/30/2003	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	4.3	<0.4	-
MF-6	9/30/2003	TL	2300	1400	6.9	720	-	54	33	450	7.1	64	300	880	<0.4	-	-	0.39	0.28	<0.05	7.7	1	-	-	<0.05
MF-6	12/31/2003	TL	2400	1400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-6	3/4/2004	TL	2300	1400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-6	4/2/2004	UNK	2400	1400	7.4	740	-	66	41	420	4	74	340	740	ND	ND	-	0.4	0.08	-	5.3	1.3	-	-	-
MF-6	5/27/2004	UNK	2300	1400	6.7	-	-	59	38	450	7.2	80	310	870	-	-	-	-	-	ND	11	1.2	-	-	ND
MF-6	11/17/2004	BSK	2100	1200	7.5	680	-	47	30	380	2	72	190	680	<0.2	0.4	-	0.3	0.05	-	0.79	0.87	-	-	-
MF-6	3/2/2005	TL	1800	1000	-	-	-	-	-	-	-	-	-	-	-	-	-	0.32	-	-	-	0.69	5.6	-	-
MF-6	3/21/2005	UNK	1800	1000	-	-	-	-	-	-	-	-	-	-	-	-	-	0.32	-	-	-	0.69	5.6	-	-
MF-6	8/10/2005	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<6	-	-	-	-	-	3.5	<0.4	-
MF-6	8/10/2005	TL	1700	1200	6.9	580	-	38	22	360	5	76	250	710	<2	-	-	0.36	0.21	<0.005	4.5	0.66	-	-	<0.005
MF-6	9/1/2005	UNK	1700	1200	6.9	580	-	38	22	360	5	76	250	710	-	-	-	0.36	0.21	ND	4.5	0.66	-	-	ND
MF-6	4/20/2006	TL	1100	720	6.9	340	-	24	14	240	4.6	62	140	-	<2	-	-	-	-	<0.005	3	0.42	-	-	<0.005
MF-6	9/26/2006	TL	1700	1100	7.0	550	-	36	21	350	5.4	56	220	-	<10	-	<10	0.34	0.2	<0.005	4.9	0.65	<5	<20	<0.005
MF-6	3/28/2007	TL	850	510	7.0	240	-	17	10	160	4.8	50	110	290	-	-	ND	0.2	0.098	ND	2.7	0.33	5.4	ND	ND
MF-6	9/25/2007	TL	1400	870	7.1	410	-	30	17	290	4.6	66	170	500	-	-	ND	0.28	0.046	ND	4	0.55	-	-	ND
MF-6	4/6/2008	BCL	1460	830	7.34	390	-	35	21	290	2.8	98	180	470	<0.4	-	-	-	-	0.00073	5.6	0.56	-	-	0.0056
MF-6	9/3/2008	BCL	2150	1300	7.26	-	-	44	27	410	2.5	85	280	850	-	-	7.9	0.33	0.24	0.031	6	0.86	-	-	0.0083
MF-6	9/3/2008	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.75	<0.4	-
MF-6	4/2/2009	BCL	1850	1400	7.33	610	-	39	23	390	2.5	92	230	740	-	-	-	-	-	ND	4.9	0.6	-	-	0.0056
MF-6	10/21/2009	BCL	1520	1100	7.38	450	-	38	19	310	5.3	84	190	550	<0.4	-	4.3	0.33	0.14	0.0026	4	0.55	-	-	0.0058
MF-6	10/21/2009	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.3	<0.4	-
MF-6	5/12/2010	BCL	1820	1100	7.5	550	-	36	22	360	2.3	87	230	680	ND	-	-	-	-	0.00084	5	0.57	-	-	0.0029
MF-6	9/14/2010	BCL	444	280	7.39	86	-	14	5.9	69	6.6	42	53	100	ND	-	7.9	0.25	0.046	0.0008	1.7	0.14	-	-	0.0051
MF-6	9/14/2010	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13.1	ND	-

Table 5 (continued)
Summary of Groundwater Quality Laboratory Results for Meyers Farm Monitoring Program

								Cations				Anions					Trace Elements								
Well Owner and Name	Date	Lab[1]	EC[2] (µmhos/cm)	TDS (mg/L)	pH	Total Alkalinity[3] (mg/L)	SAR	Ca (mg/L)	Mg (mg/L)	Na (mg/L)	K (mg/L)	SO_4 (mg/L)	Cl (mg/L)	HCO_3[3] (mg/L)	NO_3[3] (mg/L)	F (mg/L)	As (µg/L)	B (mg/L)	Ba (mg/L)	Cu (mg/L)	Fe (mg/L)	Mn (mg/L)	Mo (µg/L)	Se (µg/L)	Zn (mg/L)
MF-7	10/1/2002	UNK	4100	2600	7.3	1000	-	75	69	760	18	470	410	1200	-	-	ND	0.88	0.2	ND	1.6	0.65	-	ND	ND
MF-7	10/11/2002	TL	4100	2600	7.3	1000	-	75	69	760	18	470	410	1200	-	-	<10	0.2	0.88	<0.05	1.6	0.7	-	<10	<0.05
MF-7	12/13/2002	UNK	4200	2600	7.8	1100	-	65	71	730	8	420	460	1100	66.4	ND	-	0.9	0.1	-	ND	0.55	-	-	-
MF-7	1/6/2003	UNK	3600	2500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-7	1/13/2003	TL	3600	2500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-7	4/12/2003	BSK	3200	2000	7.6	1200	-	36	38	340	6	160	280	1200	<0.2	<2	-	0.8	0.06	-	<0.05	0.32	-	-	-
MF-7	9/30/2003	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<3	-	-	-	-	-	30.2	<0.4	-
MF-7	9/30/2003	TL	3200	2100	7.7	1200	-	33	38	740	18	240	240	1500	<0.4	-	-	0.75	0.07	<0.05	0.58	0.34	-	-	<0.05
MF-7	3/4/2004	TL	3200	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-7	4/2/2004	UNK	2600	1700	7.6	440	-	23	19	530	4	340	250	440	239.1	ND	-	0.8	ND	-	ND	0.15	-	-	-
MF-7	11/17/2004	BSK	1300	800	7.8	240	-	17	14	250	4	190	130	240	12	0.6	-	0.5	<0.05	-	<0.05	0.08	-	-	-
MF-7	3/3/2005	TL	800	490	-	-	-	-	-	-	-	-	-	-	-	-	-	0.46	-	-	-	0.021	21	-	-
MF-7	3/23/2005	UNK	800	490	-	-	-	-	-	-	-	-	-	-	-	-	-	0.46	-	-	-	0.021	21	-	-
MF-7	8/9/2005	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<6	-	-	-	-	-	18.5	1.3	-
MF-7	8/9/2005	TL	980	680	7.2	230	-	3.8	3.2	250	4.3	110	110	280	<2	-	-	0.44	0.015	0.0061	<0.1	0.012	-	-	0.0056
MF-7	8/30/2005	UNK	980	680	7.2	230	-	3.8	3.2	250	4.3	110	110	280	-	-	ND	0.44	0.015	ND	ND	0.012	19	-	0.0056
MF-7	4/20/2006	TL	670	480	7.3	190	-	2.7	2.4	170	3.8	60	67	-	17	-	-	-	-	0.0068	1.1	0.019	-	-	0.005
MF-7	9/26/2006	TL	950	630	7.3	260	-	2.4	2.2	210	4.1	77	72	-	35	-	<10	0.47	0.029	0.0081	3.4	0.29	27	<20	0.0054
MF-7	3/28/2007	TL	580	400	7.5	200	-	1.3	1.3	140	2.9	35	32	250	-	-	ND	0.33	0.023	0.0061	2.9	0.24	20	ND	ND
MF-7	9/24/2007	TL	500	310	7.1	97	-	9.4	9.3	85	5	52	67	120	-	-	ND	0.18	0.031	ND	1.8	0.27	-	-	ND
MF-7	4/6/2008	BCL	770	430	7.65	150	-	19	17	120	3.6	87	98	180	0.57	-	-	-	-	0.0026	2.1	0.2	-	-	0.0082
MF-7	9/3/2008	BCL	837	480	7.48	-	-	39	28	83	5.3	100	-	190	-	-	ND	0.32	0.083	0.0022	1.8	1	-	-	0.013
MF-7	9/3/2008	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.95	<0.4	-
MF-7	4/2/2009	BCL	794	510	7.33	160	-	37	30	97	5.3	110	100	200	-	-	-	-	-	0.00096	3.1	0.58	-	-	0.0049
MF-7	10/21/2009	BCL	946	580	7.33	180	-	52	39	100	6.3	170	110	220	<0.4	-	2.9	0.26	0.15	0.0014	4.7	0.65	-	-	0.0064
MF-7	10/21/2009	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	<0.4	-
MF-7	5/12/2010	BCL	841	510	6.85	84	-	27	23	120	6.1	140	130	100	4.6	-	-	-	-	0.0023	13	0.9	-	-	0.0052
MF-7	9/14/2010	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.85	2.25	-
MF-7	9/14/2010	BCL	652	420	7.22	160	-	11	9.1	120	3.1	63	61	200	4.1	-	2.6	0.41	0.031	0.0033	2.1	0.18	-	-	0.0062
MF-8	10/10/2002	TL	4900	3100	7.5	1300	-	30	22	970	19	370	630	1500	2.5	-	<10	1	0.14	<0.05	<0.1	0.5	-	-	<0.05
MF-8	12/13/2002	UNK	5000	3000	8.1	1300	-	32	24	1100	7	350	700	1300	ND	ND	-	1	0.07	-	ND	0.5	-	-	-
MF-8	1/6/2003	UNK	3500	2200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-8	1/13/2003	TL	3500	2200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-8	4/12/2003	BSK	3500	2100	7.5	880	-	23	20	600	4	310	460	880	<0.2	<2	-	0.8	0.07	-	<0.05	0.98	-	-	-
MF-8	9/29/2003	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<3	-	-	-	-	-	29.2	2.7	-
MF-8	9/29/2003	TL	4500	2900	7.1	1300	-	25	18	1100	22	290	600	1600	17	-	-	1.1	0.06	<0.05	<0.1	0.46	-	-	<0.05
MF-8	3/4/2004	TL	3300	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-8	4/2/2004	UNK	3500	2300	7.8	810	-	28	23	770	4	440	460	810	0.2	ND	-	1	0.12	-	ND	1.7	-	-	-
MF-8	11/17/2004	BSK	3200	2000	7.8	730	-	25	24	660	5	450	380	730	<0.2	0.6	-	0.9	<0.05	-	-	0.86	-	-	-
MF-8	3/2/2005	TL	3400	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	0.78	-	-	-	1.1	55	-	-
MF-8	3/21/2005	UNK	3400	2100	-	-	-	-	-	-	-	-	-	-	-	-	-	0.78	-	-	-	1.1	55	-	-
MF-8	8/9/2005	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<6	-	-	-	-	-	21	0.78	-
MF-8	8/9/2005	TL	2900	2000	6.9	1400	-	130	92	500	26	12	350	1700	<2	-	-	0.47	0.39	0.012	<0.1	4.4	-	-	<0.005
MF-8	8/30/2005	UNK	2900	2000	6.9	1400	-	130	92	500	26	12	350	1700	-	-	ND	0.47	0.39	0.012	ND	4.4	21	0.8	ND
MF-8	4/20/2006	TL	3000	1900	6.9	1200	-	160	65	480	46	5.2	330	-	<2	-	-	-	-	0.011	<0.2	4.1	-	-	<0.01
MF-8	9/26/2006	TL	3000	1900	7.0	1300	-	180	62	450	48	13	310	-	<10	-	<20	0.43	0.46	0.02	2.3	4.5	31	<40	0.011
MF-8	3/28/2007	TL	2800	1700	7.2	1200	-	150	49	500	33	ND	310	1400	-	-	ND	0.45	0.38	ND	5.1	3.9	44	ND	ND

Table 5 (continued)
Summary of Groundwater Quality Laboratory Results for Meyers Farm Monitoring Program

								Cations				Anions					Trace Elements								
Well Owner and Name	**Date**	**Lab[1]**	**EC[2]** (µmhos/cm)	**TDS** (mg/L)	**pH**	**Total Alkalinity[3]** (mg/L)	**SAR**	**Ca** (mg/L)	**Mg** (mg/L)	**Na** (mg/L)	**K** (mg/L)	**SO_4** (mg/L)	**Cl** (mg/L)	**HCO_3[3]** (mg/L)	**NO_3[3]** (mg/L)	**F** (mg/L)	**As** (µg/L)	**B** (mg/L)	**Ba** (mg/L)	**Cu** (mg/L)	**Fe** (mg/L)	**Mn** (mg/L)	**Mo** (µg/L)	**Se** (µg/L)	**Zn** (mg/L)
MF-8	9/24/2007	TL	2800	1400	7.1	1200	-	150	51	480	41	ND	250	1500	-	-	ND	0.49	0.3	ND	13	3.4	-	-	ND
MF-8	4/6/2008	BCL	2760	1600	7.37	1200	-	130	48	480	23	3.1	290	1400	<0.4	-	-	-	-	0.0039	14	3.6	-	-	0.0065
MF-8	9/3/2008	BCL	2800	1700	7.19	-	-	150	50	420	22	5.8	290	1500	-	-	56	0.4	0.5	0.0049	49	3.6	-	-	0.01
MF-8	9/3/2008	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55	<0.4	-
MF-8	4/2/2009	BCL	2820	1600	7.22	1200	-	160	55	490	23	15	310	1400	-	-	-	-	-	0.0054	29	4	-	-	0.0081
MF-8	10/21/2009	BCL	3560	2200	7.24	1200	-	190	68	650	26	140	470	1500	14	-	38	0.59	0.59	0.005	36	4.4	-	-	0.0055
MF-8	10/21/2009	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	<0.668	-
MF-8	5/12/2010	BCL	3480	2100	7.61	1300	-	160	68	570	11	50	440	1600	ND	-	-	-	-	0.001	20	4.9	-	-	0.0029
MF-8	9/14/2010	BCL	2930	2000	7.24	1200	-	140	63	480	16	7.1	360	1400	ND	-	16	0.56	0.36	0.00097	18	4.5	-	-	0.0051
MF-8	9/14/2010	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.5	<0.4	-
MF-9	10/10/2002	TL	2300	1500	7.4	500	-	47	23	440	12	330	240	610	<2	-	<10	0.59	0.11	<0.05	0.21	0.68	-	<10	<0.05
MF-9	12/13/2002	UNK	2300	1400	7.8	440	-	40	20	390	4	340	240	440	ND	ND	-	0.6	0.08	-	ND	0.64	-	-	-
MF-9	1/6/2003	UNK	2300	1400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-9	1/13/2003	TL	2300	1400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-9	3/23/2003	BSK	-	1400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-9	4/12/2003	BSK	2100	1400	7.6	460	-	32	16	350	4	310	230	460	<0.2	<2	-	0.6	0.07	-	<0.05	0.53	-	-	-
MF-9	9/29/2003	TL	2400	1500	7.3	280	-	54	27	460	22	410	250	340	<0.4	-	-	0.61	0.09	<0.05	0.11	1	-	-	<0.05
MF-9	9/29/2003	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<3	-	-	-	-	-	32.6	<0.4	-
MF-9	3/4/2004	TL	2200	1400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MF-9	4/2/2004	UNK	2200	1400	8.1	560	-	47	23	450	6	260	280	560	2.2	ND	-	0.6	0.09	-	ND	0.88	-	-	-
MF-9	11/17/2004	BSK	2600	1600	7.9	780	-	63	34	510	7	220	330	780	<0.2	<0.1	-	0.6	0.08	-	<0.05	1.1	-	-	-
MF-9	3/2/2005	TL	3300	2000	-	-	-	-	-	-	-	-	-	-	-	-	-	0.67	-	-	-	1.8	25	-	-
MF-9	3/21/2005	UNK	3300	2000	-	-	-	-	-	-	-	-	-	-	-	-	-	0.67	-	-	-	1.8	25	-	-
MF-9	8/9/2005	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<6	-	-	-	-	-	26.1	<0.4	-
MF-9	8/9/2005	TL	3200	2100	7.0	950	-	95	42	630	17	300	380	1200	<2	-	-	0.7	0.1	<0.005	0.8	1.4	-	-	<0.005
MF-9	8/30/2005	UNK	3200	2100	7.0	950	-	95	42	630	17	300	380	1200	-	-	ND	0.7	0.1	ND	0.8	1.4	26	ND	ND
MF-9	4/20/2006	TL	3100	2100	7.3	1000	-	67	33	700	20	280	320	-	<2	-	-	-	-	<0.01	1.6	1.4	-	-	<0.01
MF-9	9/26/2006	TL	2800	1800	7.4	920	-	54	24	620	16	190	290	-	<20	-	<20	0.8	0.074	<0.01	2.6	0.88	56	<40	0.013
MF-9	3/28/2007	TL	2600	1600	7.5	820	-	49	20	550	15	170	290	1000	-	-	ND	0.72	0.073	ND	1.2	0.65	43	ND	ND
MF-9	9/24/2007	TL	1500	860	7.7	400	-	13	6.7	330	9.1	150	120	490	-	-	ND	0.56	0.031	ND	0.87	0.29	-	-	ND
MF-9	4/6/2008	BCL	1540	1000	8.06	400	-	14	7	370	5.3	180	150	490	<0.4	-	-	-	-	0.00044	1.1	0.27	-	-	0.0054
MF-9	9/3/2008	BCL	2000	1200	7.85	-	-	22	12	440	5.4	8.3	8.3	680	-	-	2	0.53	0.059	ND	1.7	0.53	-	-	0.0083
MF-9	9/3/2008	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26.2	<0.4	-
MF-9	4/2/2009	BCL	2200	1400	7.7	630	-	29	16	520	5.7	250	230	770	-	-	-	-	-	0.000069	1.7	0.63	-	-	0.0028
MF-9	10/21/2009	BCL	3010	2000	7.44	660	-	53	33	650	7.9	470	380	800	<0.9	-	2.1	0.93	0.14	0.0022	4.8	1.2	-	-	0.0052
MF-9	10/21/2009	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.6	<0.4	-
MF-9	5/12/2010	BCL	2960	1900	7.7	620	-	50	33	590	6.7	470	380	760	ND	-	-	-	-	0.0071	6.1	1.3	-	-	0.0032
MF-9	9/14/2010	BCL	3120	2100	7.56	830	-	44	32	710	7.6	410	340	1000	ND	-	1.2	0.93	0.099	0.0017	3.8	1.1	-	-	0.0049
MF-9	9/14/2010	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	ND	-
Spreckels Sugar Co.																									
MW-1	8/2/1982	TL	-	-	-	-	-	8	2	370	9	99	255	470	<1	-	<10	0.5	-	-	0.06	0.03	-	-	-
MW-1	11/1/1982	BCL	1480	890	9.2	-	52	2.5	0.51	345	2	93	206	390	<0.4	0.84	<10	0.44	-	-	0.06	0.02	-	-	-
MW-1	11/24/1982	UNK	1480	890	9.2	-	-	2.5	0.5	345	2	93	206	389.8	-	0.84	-	0.44	-	-	0.06	0.02	-	-	-
MW-1	5/5/1983	BCL	1400	973	8.6	-	52.4	2.9	0.6	375	1.2	120	203	428	<0.1	-	<10	-	-	-	0.05	0.03	-	-	-
MW-1	12/3/1983	UNK	-	1128	8.4	-	-	4	8	370	-	85	196	240	-	-	-	-	-	-	0.17	0.02	-	-	-
MW-1	5/22/1984	BCL	1780	1083	8.8	-	50.2	3	1.1	400	0.9	145	230	424	<0.4	-	-	-	-	-	0.08	0.04	-	-	-
MW-1	11/27/1984	UNK	1450	1033	8.3	-	-	3.4	1.7	355	0.7	110	185	474	-	-	-	0.44	-	-	-	0.03	-	-	-

Table 5 (continued)
Summary of Groundwater Quality Laboratory Results for Meyers Farm Monitoring Program

								Cations				Anions					Trace Elements								
Well Owner and Name	Date	Lab[1]	EC[2] (µmhos/cm)	TDS (mg/L)	pH	Total Alkalinity[3] (mg/L)	SAR	Ca (mg/L)	Mg (mg/L)	Na (mg/L)	K (mg/L)	SO_4 (mg/L)	Cl (mg/L)	HCO_3[3] (mg/L)	NO_3[3] (mg/L)	F (mg/L)	As (µg/L)	B (mg/L)	Ba (mg/L)	Cu (mg/L)	Fe (mg/L)	Mn (mg/L)	Mo (µg/L)	Se (µg/L)	Zn (mg/L)
MW-1	11/1/1985	UNK	1380	865	8.6	-	-	2.3	0.9	327	0.5	88	174	402	-	-	-	-	-	-	0.06	0.02	-	-	-
MW-1	9/27/1986	UNK	1510	950	8.6	-	-	2.4	1	352	0.6	114	190	468	-	-	-	0.56	-	-	-	0.02	-	-	-
MW-1	4/21/1987	BCL	1530	935	7.8	-	47.9	2.4	1	350	0.7	101	192	473	0.4	-	-	-	<0.1	-	0.06	0.03	-	-	-
MW-1	3/28/1988	BCL	1280	830	8.9	-	45.7	1.9	0.9	305	0.7	85	153	345	<0.4	-	-	-	<0.1	-	<0.05	0.01	-	-	-
MW-1	12/22/1988	BCL	1330	925	8.8	-	49	2	1	340	1	136	230	282	<0.4	-	-	-	-	-	<0.05	0.01	-	-	-
MW-1	12/15/1989	UNK	1480	905	8.9	-	-	2.6	1.5	325	0.6	124	225	304	-	-	-	-	-	-	-	0.024	-	-	-
MW-1	4/11/1990	BCL	1510	940	8.9	-	43.5	2.6	1.4	350	5	134	257	291	<0.4	-	5	-	<0.1	-	<0.05	0.021	-	-	-
MW-1	11/13/1990	UNK	-	1110	8.7	-	-	-	-	-	0.6	-	302	284	-	-	-	-	-	-	-	0.023	-	-	-
MW-1	6/10/1991	BCL	2400	1320	8.8	-	-	-	-	-	0.8	-	384	406	-	-	-	-	<0.1	-	-	-	-	-	-
MW-1	10/28/1991	UNK	2500	1365	8.8	-	-	5.3	2.8	530	0.7	209	299	542	4	0.6	-	0.56	-	-	-	49	-	-	-
MW-1	2/24/1992	BCL	2700	1570	8.6	-	54	4.8	2.3	575	0.5	384	267	632	<0.4	0.66	-	0.56	<0.1	-	<0.05	0.024	-	-	-
MW-1	10/19/1992	BCL	3600	2110	8.5	-	58	8	4	805	1.7	355	380	948	3.1	0.64	-	0.63	<0.1	-	<0.05	0.036	-	-	-
MW-1	3/3/1993	BCL	3900	2270	8.5	-	60.4	8.7	5.2	912	2	310	344	1230	<0.4	0.55	-	0.8	<0.1	-	0.059	0.046	-	-	-
MW-1	9/20/1993	UNK	4000	2230	8.4	-	-	9.5	4.9	937	2.5	340	350	1310	4	0.64	-	0.94	-	-	-	0.045	-	-	-
MW-1	3/8/1994	BCL	4050	2580	8.4	-	68.8	7.6	5.1	999	2.1	450	444	1270	<0.4	0.74	-	0.45	0.2	-	4.15	2.32	-	-	-
MW-1	9/19/1994	BCL	4050	2630	8.4	-	59.3	10.5	5.4	948	2.6	505	438	1090	1.3	0.38	-	0.86	<0.1	-	<0.05	0.046	-	-	-
MW-1	3/15/1995	BCL	4000	2580	8.4	-	66.9	8.5	4.9	989	2.7	489	493	1100	5.8	0.44	-	0.86	<0.1	-	<0.05	0.021	-	-	-
MW-1	10/9/1995	UNK	4270	2690	8.3	-	-	10.9	6.5	1020	2.4	365	488	1430	4	0.72	-	1.2	-	-	-	0.032	-	-	-
MW-1	4/2/1996	BCL	4300	2590	8.4	-	56.1	11.5	7.4	992	2.6	440	520	1280	<0.4	0.6	-	1	<0.1	-	<0.05	0.085	-	-	-
MW-1	9/30/1996	BCL	3660	2300	9.0	-	59.4	8.2	5.6	901	2.2	336	445	1070	8.9	0.54	-	1	<0.1	-	<0.05	0.067	-	-	-
MW-1	6/2/1997	BCL	2340	1440	8.6	-	54.4	3.8	2.4	550	1.4	186	241	665	<0.4	0.59	-	0.84	<0.1	-	<0.05	0.037	-	-	-
MW-1	3/18/1998	BSK	3600	2200	8.3	1100	59.5	9	4.6	880	1.8	<50	410	1342	<25	<2.5	31	1.3	0.06	-	<0.05	0.07	-	2	-
MW-1	8/25/1998	BSK	3300	2000	8.4	960	57.3	7.8	3.8	780	2.4	210	390	1171	<2	<1	-	1.2	<0.05	-	<0.05	0.06	-	-	-
MW-1	4/20/1999	BSK	2800	1800	8.4	780	58.4	6.1	3.1	710	2	370	490	952	<6	<3	-	1	<0.05	-	<0.05	0.04	-	-	-
MW-1	11/14/1999	BSK	3800	2400	8.2	1400	55.8	10	5.1	870	2	190	430	1708	<10	<5	-	1.2	0.05	-	<0.05	0.08	-	-	-
MW-1	5/21/2000	BSK	3400	2200	8.2	1100	60.3	8.9	4.4	880	<2	210	400	1342	<8	<4	-	1.2	0.05	-	<0.05	0.07	-	-	-
MW-1	12/19/2000	BSK	3900	2500	8.2	1300	60.7	7.6	4	830	2	220	440	1586	<10	<5	-	1.2	<0.05	-	<0.05	0.06	-	-	-
MW-1	6/5/2001	BSK	3800	2600	8.1	1400	67.7	8.3	5	1000	2	200	490	1708	-	<5	-	1.3	<0.05	-	<0.05	0.08	-	-	-
MW-1	10/2/2001	UNK	4300	2200	8.0	1400	-	11	6.1	1100	ND	210	480	1400	ND	ND	-	1.3	0.06	-	ND	0.1	-	-	-
MW-1	5/2/2002	BSK	4100	2400	8.2	1500	-	7.4	4.4	980	2	180	500	1500	<12	<6	-	1.2	0.06	-	<0.05	0.08	-	-	-
MW-1	9/17/2002	TL	4400	2700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	12/10/2002	BSK	4000	2500	8.2	1300	-	7.4	5.3	920	2	140	490	-	-	ND	-	1.2	0.06	-	ND	0.12	-	-	-
MW-1	1/13/2003	TL	4000	2500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	3/23/2003	BSK	3800	2400	8.0	1200	-	7.2	5.3	920	<2	130	460	1460	<27	<3	-	1.1	0.06	-	0.06	0.12	-	-	-
MW-1	9/30/2003	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32	-	-	-	-	-	38.2	<0.4	-
MW-1	9/30/2003	TL	4000	2700	7.9	1400	-	7.2	5.7	1100	8.3	160	490	1700	<1.8	-	-	1.2	0.06	<0.05	<0.05	0.14	-	-	<0.05
MW-1	10/24/2003	BSK	4200	2700	8.3	1500	-	8.2	6.8	1000	3	180	490	-	-	ND	-	1.2	0.06	-	ND	0.14	-	-	-
MW-1	3/4/2004	TL	3800	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-1	4/1/2004	UNK	3800	2400	8.2	1400	-	9	7	980	3	120	460	1400	ND	ND	-	1.1	0.06	-	ND	0.13	-	-	-
MW-1	11/14/2004	BSK	4000	2500	8.3	1500	-	9.5	8.8	920	3	120	470	1830	<9	<1	-	1.1	0.06	-	<0.05	0.15	-	-	-
MW-1	3/2/2005	TL	4000	2500	-	-	-	-	-	-	-	-	-	-	-	-	-	1.2	-	-	-	0.12	33	-	-
MW-1	4/7/2005	UNK	4200	2600	8.3	1500	-	12	8.7	960	3	160	490	1500	ND	0.6	-	1.2	0.07	-	ND	0.14	-	-	-
MW-1	8/9/2005	TL	4100	2900	7.9	1600	-	12	10	1100	9.5	190	470	2000	<2	-	-	1.4	0.089	<0.005	0.1	0.17	-	-	<0.005
MW-1	8/9/2005	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	-	-	-	-	38	<0.4	-
MW-1	10/13/2005	UNK	4700	2900	8.4	1700	-	15	13	1200	ND	100	540	1600	ND	ND	-	1.6	0.1	-	ND	0.19	-	-	-
MW-1	4/20/2006	UNK	5140	2978	8.3	1682	-	13.6	12	1060	11.7	228	-	1682	ND	0.2	-	1.2	0.09	-	0.03	0.18	-	-	-
MW-1	4/20/2006	TL	4500	3000	8.1	1100	-	14	13	1200	11	220	490	-	<2	-	-	-	-	<0.01	<0.2	0.17	-	-	<0.01
MW-1	9/26/2006	UNK	5380	3045	8.1	1410	-	15.1	14	968	7	367	-	1410	ND	ND	-	1.37	0.1	-	0.03	0.26	-	-	-

Table 5 (continued)
Summary of Groundwater Quality Laboratory Results for Meyers Farm Monitoring Program

								Cations				Anions					Trace Elements								
Well Owner and Name	Date	Lab[1]	EC[2] (µmhos/cm)	TDS (mg/L)	pH	Total Alkalinity[3] (mg/L)	SAR	Ca (mg/L)	Mg (mg/L)	Na (mg/L)	K (mg/L)	SO_4 (mg/L)	Cl (mg/L)	HCO_3[3] (mg/L)	NO_3[3] (mg/L)	F (mg/L)	As (µg/L)	B (mg/L)	Ba (mg/L)	Cu (mg/L)	Fe (mg/L)	Mn (mg/L)	Mo (µg/L)	Se (µg/L)	Zn (mg/L)
MW-1	9/26/2006	TL	4600	3100	7.9	1600	-	17	15	1200	9.7	310	510	-	<20	-	<50	1.5	0.13	<0.025	<0.5	0.29	<25	<100	<0.025
MW-1	3/28/2007	TL	4300	2800	8.0	1200	-	14	13	1000	11	400	410	1500	-	-	ND	1.2	0.18	ND	ND	0.2	19	ND	0.027
MW-1	9/24/2007	TL	2000	820	8.1	520	-	3.7	4	450	4.7	170	180	620	-	-	ND	0.7	0.023	ND	0.11	0.075	-	-	ND
MW-1	9/24/2007	UNK	1900	900	8.1	-	-	-	-	-	-	170	-	600	ND	-	-	-	-	-	-	-	-	-	-
MW-1	4/6/2008	BCL	1520	980	8.34	-	-	-	-	-	-	150	160	476	<0.4	-	-	-	-	-	-	-	-	-	-
MW-1	9/3/2008	BCL	1720	1100	8.4	-	-	-	-	-	-	150	180	573	<0.4	-	-	-	0.02	-	-	-	-	-	-
MW-1	4/2/2009	UNK	1820	1300	8.2	-	-	-	-	-	-	150	200	530	ND	-	-	-	0.023	-	-	-	-	-	-
MW-1	4/2/2009	BCL	1820	1200	8.15	540	-	4.9	6	450	2	160	200	650	-	-	-	-	-	0.00031	0.14	0.087	-	-	0.0061
MW-1	10/2/2009	BSK	1800	1000	8.3	-	-	-	-	-	-	140	200	647	<5	-	-	-	-	-	-	-	-	-	-
MW-1	10/20/2009	BCL	1760	1200	8.18	540	-	14	16	450	2.3	160	210	660	<0.4	-	1.4	0.51	0.049	0.0012	0.22	0.28	-	-	0.0052
MW-1	10/20/2009	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.6	<0.4	-
MW-1	5/20/2010	BCL	2050	1400	8.1	630	-	10	10	480	2.4	140	250	760	ND	-	-	-	-	0.00057	0.27	0.17	-	-	0.0038
MW-1	9/15/2010	BCL	1460	1100	8.16	390	-	6.6	6.2	350	1.7	160	150	480	ND	-	1.5	0.41	0.026	0.00072	0.2	0.11	-	-	0.0045
MW-1	9/15/2010	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.9	ND	-
MW-1	9/15/2010	SSC	1500	890	7.9	-	-	-	-	-	-	140	140	520	<2	-	-	-	-	-	-	-	-	-	-
MW-2	8/3/1982	TL	-	-	-	-	-	68	50	375	5	7	184	1130	<1	-	<10	0.5	-	-	0.31	1.4	-	-	-
MW-2	4/21/1987	UNK	2200	1140	7.6	-	-	76	47	338	4	8	179	1036	1.8	-	-	-	0.14	-	0.22	2.2	-	-	-
MW-2	3/28/1988	UNK	1975	1105	7.8	-	-	77	45	340	4.6	-	176	1047	-	-	-	-	0.14	-	4.2	2.2	-	-	-
MW-2	12/22/1988	BCL	1770	1005	7.6	-	7.2	61	43	300	3	12	168	880	0.9	-	-	-	0.1	-	<0.05	1.3	-	-	-
MW-2	12/14/1989	UNK	2300	1380	7.5	-	-	76	41	355	4.2	18	184	1045	-	-	-	-	-	-	4.9	2.042	-	-	-
MW-2	4/11/1990	UNK	2200	1235	7.4	-	-	77	39	360	37	29	202	1047	-	-	-	-	-	-	3.2	2.092	-	-	-
MW-2	11/13/1990	UNK	-	880	7.1	-	-	-	-	-	2.4	-	152	535	-	-	-	-	-	-	0.987	0.499	-	-	-
MW-2	6/10/1991	UNK	2100	1230	7.0	-	-	-	-	-	6.5	-	188	304	-	-	-	-	0.157	-	-	-	-	-	-
MW-2	10/28/1991	UNK	2200	1255	7.5	-	-	67	33	360	5.3	-	196	1030	-	0.35	-	0.4	0.125	-	3920	1660	-	-	-
MW-2	2/24/1992	UNK	2200	1260	7.5	-	-	68	33	380	6.9	9	194	1070	8	0.38	-	0.4	0.151	-	3.89	1.76	-	-	-
MW-2	10/19/1992	UNK	2300	1320	7.4	-	-	61	30	385	6.6	-	196	1070	-	0.37	-	0.47	0.149	-	3.65	1.81	-	-	-
MW-2	3/1/1993	UNK	2200	1230	7.4	-	-	64	38	383	6.6	-	214	1050	-	0.38	-	0.45	0.154	-	3.86	1.93	-	-	-
MW-2	9/20/1993	UNK	2200	1170	7.4	-	-	72	34	366	8.2	-	206	1040	-	0.35	-	0.43	0.17	-	4.01	2.12	-	-	-
MW-2	3/8/1994	UNK	2050	1230	7.3	-	-	75	35	355	8.5	16	210	1000	-	0.34	-	0.45	0.199	-	4.15	2.32	-	-	-
MW-2	9/19/1994	UNK	2120	1320	7.3	-	-	68	37	356	10.1	20	204	1020	-	0.3	-	0.38	0.16	-	0.059	2.37	-	-	-
MW-2	3/15/1995	UNK	2200	1350	7.4	-	-	0.79	0.4	395	10.8	36	240	1020	-	0.31	-	0.42	0.18	-	-	2.46	-	-	-
MW-2	10/17/1995	UNK	2190	2190	7.4	-	-	85	38	362	8.9	-	235	1080	-	0.27	-	0.45	0.161	-	-	2.48	-	-	-
MW-2	4/3/1996	UNK	2140	1200	7.4	-	-	94	45	346	7.2	-	210	210	-	0.29	-	0.42	0.154	-	-	2.72	-	-	-
MW-2	9/30/1996	UNK	2170	1300	8.1	-	-	86	44	374	6.2	-	217	1110	-	0.31	-	0.43	0.154	-	-	2.42	-	-	-
MW-2	6/2/1997	UNK	2140	1300	7.9	-	-	78	37	392	5.7	-	194	1110	-	0.37	-	-	0.132	-	-	2.19	-	-	-
MW-2	3/18/1998	UNK	2100	1300	7.5	-	-	81	35	400	5.8	-	180	930	-	-	-	0.43	0.15	-	-	2.1	-	-	-
MW-2	8/25/1998	UNK	2200	1300	7.4	-	-	84	35	380	6.9	ND	210	910	ND	ND	-	0.44	0.15	-	ND	2.3	-	-	-
MW-2	4/20/1999	BSK	2200	1300	7.3	930	8.2	110	44	400	8	<50	220	1135	<5	<2.5	-	0.4	0.18	-	<0.05	2.6	-	-	-
MW-2	11/15/1999	UNK	2300	1400	7.7	-	-	110	41	370	8	ND	230	900	ND	ND	-	0.4	0.19	-	ND	4.1	-	-	-
MW-2	5/21/2000	BSK	2100	1400	7.3	940	7.9	99	36	360	7	<50	220	1147	<5	<2.5	-	0.4	0.17	-	<0.05	2.6	-	-	-
MW-2	12/19/2000	BSK	2200	1300	7.3	980	8.7	85	32	370	7	<50	200	1196	<5	<2.5	-	0.4	0.15	-	<0.05	2.2	-	-	-
MW-2	6/5/2001	BSK	2200	1400	7.0	1000	8.3	100	41	390	9	<60	250	1220	-	<3	-	0.4	0.18	-	<0.05	3.5	-	-	-
MW-2	10/2/2001	UNK	2500	1400	7.1	1000	-	110	44	390	10	ND	230	1000	ND	ND	-	0.4	0.2	-	ND	3.4	-	-	-
MW-2	5/2/2002	BSK	2300	1400	7.6	950	-	94	35	350	6	<70	220	950	<7	<3.5	-	0.4	0.18	-	<0.05	2.7	-	-	-
MW-2	9/17/2002	TL	2400	1400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-2	12/11/2002	BSK	2300	1400	7.4	910	-	74	29	360	4	ND	220	-	-	ND	-	0.4	0.16	-	ND	1.8	-	-	-
MW-2	1/13/2003	TL	2500	1500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 5 (continued)
Summary of Groundwater Quality Laboratory Results for Meyers Farm Monitoring Program

								Cations				Anions					Trace Elements								
Well Owner and Name	Date	Lab[1]	EC[2] (µmhos/cm)	TDS (mg/L)	pH	Total Alkalinity[3] (mg/L)	SAR	Ca (mg/L)	Mg (mg/L)	Na (mg/L)	K (mg/L)	SO_4 (mg/L)	Cl (mg/L)	HCO_3[3] (mg/L)	NO_3[3] (mg/L)	F (mg/L)	As (µg/L)	B (mg/L)	Ba (mg/L)	Cu (mg/L)	Fe (mg/L)	Mn (mg/L)	Mo (µg/L)	Se (µg/L)	Zn (mg/L)
MW-2	3/23/2003	BSK	2400	1400	7.5	980	-	91	35	370	6	<40	240	1200	<18	<2	-	0.4	0.18	-	<0.05	2.6	-	-	-
MW-2	9/30/2003	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	-	-	-	-	-	1.8	<0.4	-
MW-2	9/30/2003	TL	2400	1500	7.1	990	-	110	43	420	20	41	500	1200	<1.8	-	-	0.41	0.26	<0.05	6.4	3.1	-	-	<0.05
MW-2	10/24/2003	BSK	2300	1400	7.8	-	-	110	41	350	8	ND	230	-	-	ND	-	0.4	0.17	-	ND	2.9	-	-	-
MW-2	3/4/2004	TL	2400	1500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-2	4/1/2004	UNK	2500	1600	7.7	1100	-	130	50	440	12	ND	290	1100	ND	ND	-	0.4	0.22	-	ND	3.6	-	-	-
MW-2	11/14/2004	BSK	2600	1600	7.7	1200	-	110	51	430	12	<2	280	1460	<4	0.7	-	0.4	0.21	-	<0.05	3.3	-	-	-
MW-2	3/2/2005	TL	2900	1700	-	-	-	-	-	-	-	-	-	-	-	-	-	0.4	-	-	-	3.8	<5	-	-
MW-2	4/7/2005	UNK	2800	1700	7.8	1200	-	120	53	430	14	ND	320	1200	ND	ND	-	0.4	0.23	-	ND	3.7	-	-	-
MW-2	8/9/2005	TL	2500	1600	7.0	1100	-	120	53	430	23	<20	280	1400	<2	-	-	0.39	0.31	<0.005	9	3.5	-	-	<0.005
MW-2	8/9/2005	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37	-	-	-	-	-	1.7	<0.4	-
MW-2	10/13/2005	UNK	2700	1600	7.9	1100	-	120	55	450	12	ND	290	1100	ND	ND	-	0.5	0.23	-	ND	3.6	-	-	-
MW-2	4/20/2006	UNK	2772	1620	7.5	1161	-	115	50.8	399	17.6	ND	291	1161	ND	0.2	-	0.32	0.2	-	0.02	3.4	-	-	-
MW-2	4/20/2006	TL	2600	1700	7.2	1100	-	120	56	480	26	<2	280	-	<2	-	-	-	-	<0.01	9.5	3.4	-	-	<0.01
MW-2	9/26/2006	UNK	2902	1682	7.4	1160	-	122	54.4	452	15	ND	314	1160	ND	ND	-	0.43	0.2	-	0.02	3.56	-	-	-
MW-2	9/26/2006	TL	2700	1700	7.2	1100	-	130	58	430	26	<10	290	-	<10	-	42	0.41	0.32	<0.01	9.7	3.4	<10	<40	<0.01
MW-2	3/28/2007	TL	2700	1900	7.3	1100	-	120	55	440	24	ND	310	1300	-	-	25	0.42	0.33	ND	ND	3.1	ND	ND	0.028
MW-2	9/24/2007	TL	2600	1300	7.1	1100	-	110	53	440	25	ND	240	1300	-	-	26	0.41	0.22	ND	8.7	2.9	-	-	ND
MW-2	9/24/2007	UNK	2500	1500	7.2	-	-	-	-	-	-	ND	250	1400	ND	-	-	-	-	-	-	-	-	-	-
MW-2	4/6/2008	BCL	2720	1700	7.36	-	-	-	-	-	-	6.6	290	1464	<0.4	-	-	-	-	-	-	-	-	-	-
MW-2	9/3/2008	BCL	2650	1600	7.4	-	-	-	-	-	-	<1	300	1342	<0.4	-	-	-	0.23	-	-	-	-	-	-
MW-2	4/2/2009	BCL	2500	1700	7.32	1100	-	120	56	460	12	2	290	1300	-	-	-	-	-	ND	8.4	3	-	-	0.0041
MW-2	4/2/2009	UNK	2590	1300	7.4	-	-	-	-	-	-	3	290	1100	ND	-	-	-	0.23	-	-	-	-	-	-
MW-2	10/2/2009	BSK	2600	1500	7.9	-	-	-	-	-	-	<20	280	1464	<10	-	-	-	-	-	-	-	-	-	-
MW-2	10/20/2009	BCL	2670	1500	7.53	1100	-	120	59	490	13	1.7	300	1300	<0.9	-	29	0.45	0.3	<0.002	8.3	3.1	-	-	0.0045
MW-2	10/20/2009	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.4	<0.4	-
MW-2	5/20/2010	BCL	2600	1400	7.46	1000	-	130	60	330	21	7.7	310	1200	ND	-	-	-	-	0.00052	10	3.4	-	-	0.0056
MW-2	9/15/2010	BCL	2610	1500	7.52	1000	-	120	56	450	15	6.5	320	1300	1.7	-	37	0.42	0.33	0.00065	7.3	3.3	-	-	0.0049
MW-2	9/15/2010	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.65	ND	-
MW-2	9/15/2010	SSC	2700	1600	7.1	-	-	-	-	-	-	<10	290	1342	<2	-	-	-	-	-	-	-	-	-	-
MW-3	8/2/1982	TL	-	-	-	-	-	103	22	340	25	6	199	1015	<1	-	30	0.4	-	-	0.08	1.4	-	-	-
MW-3	11/24/1982	UNK	2100	1070	7.6	-	-	73	27	355	28	-	168.5	1091	-	0.34	-	0.3	-	-	11.7	1	-	-	-
MW-3	5/5/1983	UNK	1790	1147	7.4	-	-	64	32.5	295	39	15	165	910	-	-	-	-	-	-	18	1.1	-	-	-
MW-3	12/3/1983	UNK	1900	-	-	-	-	-	-	240	-	-	157	-	-	-	-	-	-	-	13.8	1	-	-	-
MW-3	5/22/1984	UNK	1810	1033	7.6	-	-	86	30	242	33	5	156	812	-	-	-	-	-	-	19	1.1	-	-	-
MW-3	11/27/1984	UNK	1890	1227	7.5	-	-	75	34	245	26	6	165	895	-	-	-	0.25	-	-	18	1.3	-	-	-
MW-3	11/1/1985	UNK	1800	1150	7.3	-	-	103	30	235	30.5	-	178	837	-	-	-	-	-	-	12.6	1.2	-	-	-
MW-3	9/25/1986	UNK	1800	1120	7.4	-	-	101	26	230	31	9	186	868	-	-	-	-	-	-	0.07	0.92	-	-	-
MW-3	4/21/1987	UNK	1850	1105	7.6	-	-	109	28	235	34	6	176	936	53.1	-	-	-	0.2	-	16.4	1	-	-	-
MW-3	3/28/1988	UNK	1925	1105	7.23	-	-	110	27	260	35	-	185	962	43.4	-	-	-	0.12	-	-	0.55	-	-	-
MW-3	12/22/1988	BCL	1325	735	7.3	-	5.5	51	17	176	14	15	150	533	<0.4	-	-	-	-	-	<0.05	0.3	-	-	-
MW-3	12/15/1989	UNK	1780	1050	7.3	-	-	119	23	263	41	25	187	874	-	-	-	-	-	-	17.3	0.942	-	-	-
MW-3	4/11/1990	UNK	2400	1215	7.2	-	-	129	25	275	39	26	210	1060	-	-	-	-	-	-	0.351	0.954	-	-	-
MW-3	11/13/1990	UNK	-	1435	6.9	-	-	-	-	-	44	-	282	1293	-	-	-	-	0.166	-	10	0.574	-	-	-
MW-3	6/10/1991	UNK	3200	1620	7.1	-	-	-	-	-	46	-	317	1572	-	-	-	-	0.466	-	-	-	-	-	-
MW-3	10/28/1991	UNK	3700	1995	7.1	-	-	206	49	540	40.6	7	395	1700	-	0.29	-	0.31	0.497	-	26.73	2.22	-	-	-
MW-3	2/24/1992	UNK	4400	2760	7.2	-	-	215	58	575	83	11	514	-	-	0.27	-	0.33	0.943	-	28.5	2.49	-	-	-

Table 5 (continued)
Summary of Groundwater Quality Laboratory Results for Meyers Farm Monitoring Program

								Cations				Anions					Trace Elements								
Well Owner and Name	Date	Lab[1]	EC[2] (µmhos/cm)	TDS (mg/L)	pH	Total Alkalinity[3] (mg/L)	SAR	Ca (mg/L)	Mg (mg/L)	Na (mg/L)	K (mg/L)	SO_4 (mg/L)	Cl (mg/L)	HCO_3[3] (mg/L)	NO_3[3] (mg/L)	F (mg/L)	As (µg/L)	B (mg/L)	Ba (mg/L)	Cu (mg/L)	Fe (mg/L)	Mn (mg/L)	Mo (µg/L)	Se (µg/L)	Zn (mg/L)
MW-3	10/19/1992	UNK	5500	2950	7.2	-	-	173	44	740	228	-	605	2480	-	0.3	-	0.41	1.7	-	12.8	1.45	-	-	-
MW-3	3/1/1993	UNK	5500	3040	7.1	-	-	172	57	749	246	-	630	2460	-	0.3	-	0.37	1.69	-	22.9	1.28	-	-	-
MW-3	9/20/1993	UNK	5000	2630	7.0	-	-	142	44	644	289	40	565	2120	-	0.35	-	0.42	1.76	-	20.5	1.11	-	-	-
MW-3	3/8/1994	UNK	3990	2350	7.1	-	-	162	48	554	152	10	474	1560	-	0.27	-	0.41	1.2	-	21	1.44	-	-	-
MW-3	9/19/1994	UNK	3250	1870	7.1	-	-	134	39	440	81	12.5	322	1540	-	0.31	-	0.36	0.33	-	0.13	1.76	-	-	-
MW-3	3/15/1995	UNK	3770	2140	7.0	-	-	139	38	569	123	-	401	1820	-	0.33	-	0.43	0.457	-	0.095	1.49	-	-	-
MW-3	10/9/1995	UNK	3080	1730	7.1	-	-	103	29	470	86	-	307	1510	-	0.41	-	0.45	0.3	-	0.054	1.25	-	-	-
MW-3	4/3/1996	UNK	2550	1420	7.3	-	-	91	27	416	50	10	220	1340	-	0.38	-	0.46	0.197	-	-	1.12	-	-	-
MW-3	9/30/1996	UNK	2400	1460	7.9	-	-	108	33	406	27	4.4	197	1300	-	0.38	-	0.49	0.126	-	-	1.51	-	-	-
MW-3	6/2/1997	UNK	2430	1450	7.7	-	-	106	38	392	26	69.6	182	1200	4	0.54	-	0.5	0.107	-	-	1.95	-	-	-
MW-3	3/18/1998	UNK	2300	1400	7.2	-	-	110	33	400	26	-	190	1000	57.6	-	-	0.49	0.13	-	-	1.5	-	-	-
MW-3	8/25/1998	UNK	2400	1400	7.1	-	-	110	36	380	22	60	210	970	ND	0.5	-	0.51	0.13	-	0.31	1.9	-	-	-
MW-3	4/20/1999	BSK	2300	1400	7.1	-	9.8	98	30	430	22	<50	200	970	<0.2	-	-	0.4	-	-	0.14	1.3	-	-	-
MW-3	11/1/1999	BSK	2500	1500	7.8	-	6.9	150	42	370	26	75	260	950	<0.2	-	-	0.4	-	-	0.3	2.2	-	-	-
MW-3	11/14/1999	UNK	2500	1500	7.76	-	-	150	42	370	26	75	260	950	ND	ND	-	0.4	0.13	-	0.31	2.2	-	-	-
MW-3	5/21/2000	BSK	2300	1400	7.3	1100	8.1	110	34	380	23	<50	240	1342	<5	<2.5	-	0.4	0.12	-	<0.05	1.6	-	-	-
MW-3	12/19/2000	BSK	2500	1400	7.1	1000	7.7	110	35	360	24	<60	240	-	<6	<3	-	0.4	0.12	-	<0.05	1.4	-	-	-
MW-3	6/5/2001	BSK	2400	1500	6.8	995	7.4	130	43	380	25	<60	280	1214	-	<3	-	0.4	0.13	-	<0.05	1.8	-	-	-
MW-3	10/2/2001	UNK	2700	1600	6.8	1000	-	150	47	370	24	ND	300	1000	ND	ND	-	0.4	0.14	-	ND	2.2	-	-	-
MW-3	3/27/2002	FGL	2510	1480	6.9	1030	7.9	108	33	365	21	1	230	1260	<0.4	0.4	60	0.47	0.21	<0.01	17.9	1.79	-	<10	<0.02
MW-3	4/23/2002	TL	2400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-3	5/2/2002	BSK	2600	1400	7.3	1000	-	120	37	360	21	<80	270	1000	<8	<4	-	0.5	0.14	-	<0.05	1.7	-	-	-
MW-3	9/17/2002	TL	2700	1500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-3	12/10/2002	BSK	2400	1500	7.6	960	-	82	25	380	13	ND	240	-	-	ND	-	0.5	0.1	-	ND	1.2	-	-	-
MW-3	1/13/2003	TL	2800	1700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-3	3/23/2003	BSK	2600	1600	7.3	1000	-	110	33	380	19	<40	280	1220	<18	<2	-	0.4	0.15	-	<0.05	1.8	-	-	-
MW-3	9/29/2003	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	82	-	-	-	-	-	11.1	<0.4	-
MW-3	9/29/2003	TL	3000	1800	6.9	1200	-	130	44	490	43	41	290	1500	<1.8	-	-	0.46	0.28	<0.05	25	2.1	-	-	<0.05
MW-3	10/24/2003	BSK	2800	1700	7.6	1300	-	130	43	400	27	ND	300	-	-	ND	-	0.4	0.11	-	ND	1.9	-	-	-
MW-3	3/4/2004	TL	2700	1700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-3	4/1/2004	UNK	2600	1500	7.7	1100	-	110	39	430	25	ND	270	1100	ND	ND	-	0.5	0.14	-	ND	1.6	-	-	-
MW-3	11/14/2004	BSK	2500	1500	7.7	1100	-	92	35	420	22	29	240	1340	<4	0.7	-	0.5	0.1	-	<0.05	1.4	-	-	-
MW-3	3/2/2005	TL	1800	1000	-	-	-	-	-	-	-	-	-	-	-	-	-	0.47	-	-	-	0.8	<5	-	-
MW-3	4/7/2005	UNK	1800	970	7.8	670	-	48	16	290	20	35	180	670	ND	0.6	-	0.4	ND	-	ND	0.66	-	-	-
MW-3	8/9/2005	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83	-	-	-	-	-	3.1	<0.4	-
MW-3	8/9/2005	TL	1300	850	7.2	540	-	36	11	270	26	29	150	660	<2	-	-	0.42	0.079	<0.005	5	0.54	-	-	<0.005
MW-3	10/13/2005	UNK	1600	920	8.0	640	-	42	14	280	17	ND	150	640	ND	ND	-	0.5	ND	-	ND	0.53	-	-	-
MW-3	4/20/2006	UNK	997	578	7.7	335	-	16.6	5.4	198	17.2	33	110	335	ND	0.7	-	0.33	0.01	-	0.08	0.22	-	-	-
MW-3	4/20/2006	TL	940	600	7.4	320	-	17	5.4	200	21	33	120	-	<2	-	-	-	-	<0.005	2.8	0.25	-	-	<0.005
MW-3	9/26/2006	UNK	1048	612	7.7	365	-	18.6	5.8	187	14.5	36	116	356	ND	0.4	-	0.33	0.01	-	0.04	0.27	-	-	-
MW-3	9/26/2006	TL	1000	630	7.4	350	-	20	6.3	190	22	36	100	-	<10	-	79	0.34	0.043	<0.005	2.9	0.29	<5	<20	<0.005
MW-3	3/28/2007	TL	930	550	7.5	250	-	16	5	170	19	62	110	310	-	-	60	0.34	0.079	ND	ND	0.18	8	ND	0.022
MW-3	9/24/2007	TL	1800	800	7.1	720	-	66	20	310	37	36	150	880	-	-	54	0.42	0.05	ND	11	0.79	-	-	ND
MW-3	9/24/2007	UNK	1700	1000	7.2	-	-	-	-	-	-	38	160	1700	ND	-	-	-	-	-	-	-	-	-	-
MW-3	4/6/2008	BCL	1560	930	7.53	-	-	-	-	-	-	22	150	793	<0.4	-	-	-	-	-	-	-	-	-	-
MW-3	9/3/2008	BCL	1640	940	7.4	-	-	-	-	-	-	32	160	781	0.2	-	-	-	0.042	-	-	-	-	-	-
MW-3	4/2/2009	BCL	1730	1100	7.33	640	-	74	23	330	25	88	180	790	-	-	-	-	-	ND	12	0.88	-	-	0.0069
MW-3	4/2/2009	UNK	1790	980	7.4	-	-	-	-	-	-	88	170	640	ND	-	-	-	0.067	-	-	-	-	-	-

Table 5 (continued)
Summary of Groundwater Quality Laboratory Results for Meyers Farm Monitoring Program

								Cations				Anions					Trace Elements								
Well Owner and Name	Date	Lab[1]	EC[2] (µmhos/cm)	TDS (mg/L)	pH	Total Alkalinity[3] (mg/L)	SAR	Ca (mg/L)	Mg (mg/L)	Na (mg/L)	K (mg/L)	SO_4 (mg/L)	Cl (mg/L)	HCO_3[3] (mg/L)	NO_3[3] (mg/L)	F (mg/L)	As (µg/L)	B (mg/L)	Ba (mg/L)	Cu (mg/L)	Fe (mg/L)	Mn (mg/L)	Mo (µg/L)	Se (µg/L)	Zn (mg/L)
MW-3	10/2/2009	BSK	1200	690	8.1	-	-	-	-	-	-	<10	120	610	<5	-	-	-	-	-	-	-	-	-	-
MW-3	10/20/2009	BCL	1260	740	7.73	470	-	32	10	240	17	8.2	130	570	<0.4	-	77	0.41	0.073	<0.002	4.6	0.4	-	-	0.0061
MW-3	10/20/2009	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.7	<0.4	-
MW-3	5/20/2010	BCL	1950	1300	6.89	290	-	110	33	270	30	500	190	350	22	-	-	-	-	0.0031	12	1.9	-	-	0.021
MW-3	9/15/2010	BCL	906	660	7.69	290	-	17	5.7	180	10	54	85	360	ND	-	47	0.34	0.037	0.00057	2.5	0.23	-	-	0.0044
MW-3	9/15/2010	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.6	ND	-
MW-3	9/15/2010	SSC	950	530	7.4	-	-	-	-	-	-	52	83	370	<2	-	-	-	-	-	-	-	-	-	-
MW-10	4/7/1984	UNK	750	427	7.6	-	-	14.1	3.1	150	1.6	17	75	300	-	-	-	0.02	-	-	0.07	0.13	-	-	-
MW-10	7/19/1984	UNK	770	460	7.6	-	-	14.7	3.5	159	2.5	17	79.6	319	-	-	-	-	-	-	0.22	0.16	-	-	-
MW-10	11/28/1984	UNK	690	417	7.9	-	-	11	2.2	147	1.3	14	68	294	-	-	-	0.06	-	-	0.08	0.11	-	-	-
MW-10	4/24/1985	UNK	720	453	8.0	-	-	12	2.3	156	1.2	16	70.8	321	-	-	-	-	-	-	-	0.15	-	-	-
MW-10	11/5/1985	UNK	710	450	7.9	-	-	11	2.1	151	1.2	13	70.8	316	1.8	-	-	-	-	-	0.4	0.06	-	-	-
MW-10	9/24/1986	UNK	725	450	8.0	-	-	12	2.5	157	1.3	16	70.8	333	-	-	-	-	-	-	0.06	0.11	-	-	-
MW-10	3/29/1988	UNK	825	530	8.0	-	-	15	3.3	179	1.6	14	83.2	378	-	-	-	-	-	-	0.1	0.16	-	-	-
MW-10	1/13/1989	UNK	600	385	8.1	-	-	9	1.8	130	1	8	60.2	272	-	-	-	-	-	-	-	-	-	-	-
MW-10	12/14/1989	UNK	930	595	8.1	-	-	13	2.4	199	1.5	10	84.2	436	-	-	-	-	-	-	0.09	0.096	-	-	-
MW-10	11/14/1990	UNK	-	490	7.6	-	-	-	-	-	1.2	-	77.6	350	-	-	-	-	-	-	0.306	0.117	-	-	-
MW-10	6/20/1991	UNK	990	625	7.5	-	-	-	-	-	1.8	-	98.9	469	-	-	-	-	-	-	-	-	-	-	-
MW-10	10/29/1991	UNK	1000	610	8.2	-	-	13	2.1	230	1.5	-	94.3	478	-	-	-	-	-	-	0.069	0.092	-	-	-
MW-10	2/24/1992	UNK	1000	620	8.2	-	-	14.5	2.1	214	1.5	-	91.3	484	-	-	-	-	-	-	0.086	0.1	-	-	-
MW-10	10/20/1992	UNK	860	580	7.6	-	-	5.8	1.9	212	1.6	-	91	408	-	-	-	-	-	-	0.105	0.09	-	-	-
MW-10	3/1/1993	UNK	1010	610	8.1	-	-	12.2	2.2	230	1.5	-	96.3	503	-	0.06	-	-	-	-	0.063	0.081	-	-	-
MW-10	9/27/1993	UNK	1050	670	8.1	-	-	14.5	2.2	233	1.7	-	96	536	-	-	-	-	-	-	0.065	0.097	-	-	-
MW-10	3/10/1994	UNK	1080	645	8.1	-	-	13.7	2.3	234	1.6	-	99.3	519	-	-	-	-	-	-	0.133	0.104	-	-	-
MW-10	9/20/1994	UNK	1080	645	8.2	-	-	13	2	243	1.6	-	97.3	509	-	-	-	-	-	-	-	0.074	-	-	-
MW-10	3/16/1995	UNK	1100	685	8.0	-	-	14.1	2.2	258	1.8	-	102	542	-	-	-	-	-	-	0.06	0.083	-	-	-
MW-10	10/10/1995	UNK	1100	650	8.3	-	-	13	1.8	242	1.5	-	100	542	-	-	-	-	-	-	0.052	0.082	-	-	-
MW-10	4/6/1996	UNK	1070	605	8.4	-	-	8	0.9	244	1.1	-	96	506	-	-	-	-	-	-	-	0.031	-	-	-
MW-10	6/10/1996	UNK	1200	670	8.6	-	-	19.2	4.2	264	1.8	-	109	592	-	-	-	-	-	-	-	0.131	-	-	-
MW-10	6/3/1997	UNK	1210	730	8.5	-	-	17.2	2.7	271	1.8	-	106	541	-	-	-	64	-	-	0.064	0.164	-	-	-
MW-10	3/23/1998	UNK	1100	680	7.9	-	-	19	2.4	290	5.4	-	130	440	-	-	-	0.21	-	-	-	2.4	-	-	-
MW-10	8/26/1998	UNK	1200	720	8.1	-	-	18	2.4	280	2.5	ND	110	490	ND	ND	-	ND	-	-	0.05	0.14	-	-	-
MW-10	4/20/1999	BSK	1200	700	7.8	490	12.5	31	4.2	280	2	<30	120	598	<3	<1.5	-	0.1	0.06	-	<0.05	0.35	-	-	-
MW-10	5/21/2000	BSK	1200	730	7.8	470	12.6	25	2.9	250	2	<30	130	573	3.3	<1.5	-	<0.1	<0.05	-	0.1	0.25	-	-	-
MW-10	12/19/2000	BSK	1200	760	7.9	480	14.5	19	2.2	250	<2	<30	120	586	<3	<1.5	-	<0.1	<0.05	-	0.08	0.15	-	-	-
MW-10	6/5/2001	BSK	1200	740	7.8	470	13.1	25	2.9	260	<2	<30	130	573	-	<1.5	-	<0.1	<0.05	-	<0.05	0.22	-	-	-
MW-10	10/3/2001	UNK	1300	750	7.8	-	-	20	2.4	280	ND	ND	130	480	20.4	ND	-	ND	ND	-	0.16	0.16	-	-	-
MW-10	5/2/2002	BSK	1300	800	8.0	500	-	20	2.4	280	2	<40	130	500	<4	<2	-	0.1	0.05	-	0.06	0.15	-	-	-
MW-10	12/11/2002	BSK	1200	740	7.8	460	-	16	2	250	ND	ND	120	-	-	ND	-	ND	ND	-	0.06	0.12	-	-	-
MW-10	3/23/2003	BSK	1300	770	8.0	-	-	19	2.3	260	ND	ND	140	-	-	ND	-	ND	ND	-	0.06	0.14	-	-	-
MW-10	10/25/2003	BSK	1200	760	8.3	510	-	18	2.2	260	2	ND	120	-	-	ND	-	ND	ND	-	0.05	0.13	-	-	-
MW-10	3/31/2004	BSK	1200	770	8.2	520	-	22	2.6	280	<2	<2	140	630	<0.9	<0.1	-	<0.1	0.05	-	0.08	0.17	-	-	-
MW-10	4/1/2004	TL	1200	770	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-10	11/13/2004	BSK	1200	760	8.3	510	-	21	2.8	270	<2	<6	130	620	<2.7	<0.3	-	<0.1	<0.05	-	0.08	0.18	-	-	-
MW-10	3/3/2005	TL	1300	780	-	-	-	-	-	-	-	-	-	-	-	-	-	0.094	-	-	-	0.16	<5	-	-
MW-10	4/6/2005	UNK	1200	730	8.3	510	-	23	3	280	2	ND	130	510	ND	ND	-	0.1	0.06	-	ND	0.2	-	-	-
MW-10	8/10/2005	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<6	-	-	-	-	-	<1	<0.4	-

Table 5 (continued)
Summary of Groundwater Quality Laboratory Results for Meyers Farm Monitoring Program

								Cations				Anions					Trace Elements								
Well Owner and Name	Date	Lab[1]	EC[2] (µmhos/cm)	TDS (mg/L)	pH	Total Alkalinity[3] (mg/L)	SAR	Ca (mg/L)	Mg (mg/L)	Na (mg/L)	K (mg/L)	SO_4 (mg/L)	Cl (mg/L)	HCO_3[3] (mg/L)	NO_3[3] (mg/L)	F (mg/L)	As (µg/L)	B (mg/L)	Ba (mg/L)	Cu (mg/L)	Fe (mg/L)	Mn (mg/L)	Mo (µg/L)	Se (µg/L)	Zn (mg/L)
MW-10	8/10/2005	TL	1000	780	7.9	480	-	22	2.6	290	4.1	2.9	140	580	<2	-	-	0.098	0.055	<0.005	0.13	0.19	-	-	0.0098
MW-10	10/14/2005	UNK	1300	770	8.5	510	-	23	2.7	270	2	ND	140	480	ND	ND	-	0.1	0.05	-	0.08	0.2	-	-	-
MW-10	4/20/2006	TL	1200	770	7.7	460	-	24	3.1	290	4.3	11	150	-	<2	-	-	-	-	<0.005	0.16	0.24	-	-	<0.005
MW-10	9/26/2006	TL	1300	790	7.9	480	-	28	3.8	270	4.3	18	130	-	<10	-	<10	0.11	0.058	<0.005	0.19	0.33	<5	<20	<0.005
MW-10	3/29/2007	TL	1200	780	7.8	460	-	31	4.7	270	4.3	15	130	560	<10.2	<0.5	<10	0.11	0.064	<0.005	-	-	<5	-	<0.005
MW-10	9/24/2007	TL	1300	770	7.9	470	-	24	3.1	290	3.9	11	130	570	-	-	ND	0.11	0.058	ND	0.13	0.24	-	-	ND
MW-10	4/6/2008	BCL	1330	820	8.13	-	-	-	-	-	-	5.2	160	622	<0.4	-	-	-	-	-	-	-	-	-	-
MW-10	9/3/2008	BCL	1330	880	8.2	-	-	-	-	-	-	7	160	573	<0.4	-	-	-	0.056	-	-	-	-	-	-
MW-10	4/2/2009	BCL	1330	860	8.1	510	-	31	3.7	330	2.1	8.8	170	620	ND	-	-	-	0.064	ND	0.15	0.22	-	-	0.0076
MW-10	10/1/2009	BSK	1400	830	8.3	-	-	-	-	-	-	<6	150	659	<3	-	-	-	-	-	-	-	-	-	-
MW-10	10/20/2009	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	<0.4	-
MW-10	10/20/2009	BCL	1430	900	8.16	520	-	36	4.9	330	2.2	6.3	160	640	<0.4	-	<2	0.14	0.073	0.0018	0.2	0.29	-	-	0.0055
MW-10	5/20/2010	BCL	1370	860	8.2	490	-	26	3.4	320	2.1	5.6	160	600	ND	-	-	-	-	ND	0.14	0.17	-	-	0.002
MW-10	9/15/2010	BCL	1300	920	8.22	470	-	24	2.9	310	2	5.3	160	570	ND	-	1.1	0.13	0.053	ND	0.1	0.17	-	-	0.0037
MW-10	9/15/2010	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1.4	ND	-
MW-10	9/15/2010	SSC	1300	770	8.0	-	-	-	-	-	-	<10	150	610	<2	-	-	-	-	-	-	-	-	-	-
MW-11	4/7/1984	UNK	1320	807	8.2	-	-	7.5	0.6	313	1	-	100	630	-	-	-	0.14	-	-	0.07	0.09	-	-	-
MW-11	7/19/1984	UNK	1350	877	8.4	-	-	8.9	1	326	1.1	7	106	643	-	-	-	-	-	-	0.06	0.08	-	-	-
MW-11	11/28/1984	UNK	1320	910	8.2	-	-	9	0.7	329	1.2	-	106	674	-	-	-	0.12	-	-	0.05	0.07	-	-	-
MW-11	4/24/1985	UNK	1360	873	8.2	-	-	9.8	0.8	337	1.1	5	106	653	-	-	-	-	-	-	-	0.06	-	-	-
MW-11	11/5/1985	UNK	1360	935	8.1	-	-	10	0.9	332	1.2	-	108	723	-	-	-	-	-	-	-	0.09	-	-	-
MW-11	9/24/1986	UNK	1360	885	8.2	-	-	11	1.2	333	1.1	10	103	708	-	-	-	-	-	-	-	0.08	-	-	-
MW-11	3/29/1988	UNK	1375	885	8.3	-	-	11	1.2	343	1.3	-	7	687	-	-	-	-	-	-	-	0.01	-	-	-
MW-11	12/1/1988	BCL	1460	940	8.3	-	36.8	6	1	370	1	6	113	797	<0.4	-	-	-	-	-	<0.05	0.02	-	-	-
MW-11	1/13/1989	UNK	1460	940	8.3	-	-	6	0.8	370	1.4	6	113	797	-	-	-	-	-	-	-	-	-	-	-
MW-11	12/14/1989	UNK	1590	1050	8.1	-	-	17	2	380	1.4	15	119	858	-	-	-	-	-	-	0.074	0.13	-	-	-
MW-11	11/14/1990	UNK	-	995	7.6	-	-	-	-	-	1.6	-	112	899	-	-	-	-	-	-	0.106	0.227	-	-	-
MW-11	6/20/1991	UNK	1600	1040	7.9	-	-	-	-	-	1.4	-	131	855	-	-	-	-	-	-	-	-	-	-	-
MW-11	10/29/1991	UNK	1590	1000	8.2	-	-	20	2.6	382	1.4	-	132	844	-	-	-	0.17	-	-	0.07	0.187	-	-	-
MW-11	2/24/1992	UNK	1560	1040	8.0	-	-	25	28	360	1.4	-	119	823	-	-	-	0.22	-	-	0.107	0.239	-	-	-
MW-11	10/20/1992	UNK	1640	1010	7.7	-	-	25	3	360	1.7	-	133	871	-	-	-	0.16	-	-	0.081	0.23	-	-	-
MW-11	3/1/1993	UNK	1660	1010	7.9	-	-	25.4	3.9	382	1.5	-	148	899	-	-	-	0.2	-	-	0.125	0.326	-	-	-
MW-11	9/22/1993	BCL	1650	1040	7.7	-	16.7	31	4	371	1.8	<5	149	-	-	-	-	-	-	-	-	-	-	-	-
MW-11	9/27/1993	UNK	1650	1040	7.7	-	-	31	4	371	1.8	-	149	889	-	-	-	0.19	-	-	0.155	0.448	-	-	-
MW-11	3/10/1994	UNK	1770	1070	7.8	-	-	34	4.8	393	1.8	-	164	872	-	-	-	-	-	-	-	-	-	-	-
MW-11	9/20/1994	UNK	1750	1080	7.7	-	-	43	6.1	373	1.8	-	167	864	-	-	-	0.2	0.11	-	0.12	0.52	-	-	-
MW-11	3/16/1995	UNK	1680	1030	7.6	-	-	40	5.9	374	1.9	-	162	846	-	-	-	0.18	0.107	-	-	0.378	-	-	-
MW-11	10/10/1995	UNK	1700	1100	7.9	-	-	40	5.4	350	1.7	-	163	789	-	-	-	0.19	0.11	-	-	0.48	-	-	-
MW-11	4/6/1996	UNK	1740	1040	7.7	-	-	40	6	366	1.7	-	175	863	-	-	-	0.2	-	-	-	0.122	-	-	-
MW-11	6/10/1996	UNK	1750	1010	8.4	-	-	43	6.5	381	2.5	-	165	876	-	-	-	0.2	0.118	-	-	0.48	-	-	-
MW-11	6/3/1997	UNK	1720	1070	8.3	-	-	39	5.7	380	1.8	-	163	822	-	-	-	0.2	0.114	-	-	0.493	-	-	-
MW-11	3/23/1998	UNK	1400	1000	7.7	-	-	41	5.8	390	5.2	-	170	660	-	-	-	0.21	0.12	-	-	0.37	-	-	-
MW-11	8/26/1998	UNK	1700	1000	8.0	-	-	41	5.4	380	2	ND	170	690	ND	ND	-	0.2	0.12	-	ND	0.41	-	-	-
MW-11	4/20/1999	BSK	1600	1000	7.7	-	15.4	41	6	400	2	<40	180	700	<0.2	-	-	0.2	-	-	<0.05	0.4	-	-	-
MW-11	11/1/1999	BSK	1800	1000	7.8	-	14.7	40	5	370	2	<40	180	620	<0.2	-	-	0.2	-	-	<0.05	0.4	-	-	-
MW-11	5/21/2000	BSK	1600	1100	7.7	700	15	38	4.8	370	2	<40	190	854	<4	<2	-	0.2	0.1	-	0.08	0.39	-	-	-
MW-11	12/19/2000	BSK	1900	1200	7.5	680	14.2	40	5.4	360	<2	<40	220	-	<4	<2	-	0.2	0.11	-	<0.05	0.37	-	-	-

Table 5 (continued)
Summary of Groundwater Quality Laboratory Results for Meyers Farm Monitoring Program

								Cations				Anions					Trace Elements								
Well Owner and Name	Date	Lab[1]	EC[2] (µmhos/cm)	TDS (mg/L)	pH	Total Alkalinity[3] (mg/L)	SAR	Ca (mg/L)	Mg (mg/L)	Na (mg/L)	K (mg/L)	SO_4 (mg/L)	Cl (mg/L)	HCO_3[3] (mg/L)	NO_3[3] (mg/L)	F (mg/L)	As (µg/L)	B (mg/L)	Ba (mg/L)	Cu (mg/L)	Fe (mg/L)	Mn (mg/L)	Mo (µg/L)	Se (µg/L)	Zn (mg/L)
MW-11	6/5/2001	BSK	1700	1100	7.4	680	15.8	41	6.1	410	2	<40	230	830	-	<2	-	0.2	0.11	-	<0.05	0.43	-	-	-
MW-11	10/3/2001	UNK	1900	1400	7.4	-	-	46	7.1	400	ND	ND	220	740	27.9	ND	-	0.2	0.13	-	0.09	0.41	-	-	-
MW-11	5/2/2002	BSK	1900	1200	7.8	680	-	46	7.4	380	<2	<60	230	680	<6	<3	-	0.2	0.14	-	<0.05	0.42	-	-	-
MW-11	12/10/2002	BSK	1800	1000	7.6	640	-	35	5.6	340	ND	ND	200	-	-	ND	-	0.2	0.11	-	0.06	0.34	-	-	-
MW-11	3/23/2003	BSK	1900	1200	7.8	680	-	44	7.1	370	ND	ND	230	-	-	ND	-	0.2	0.13	-	0.05	0.39	-	-	-
MW-11	10/25/2003	BSK	1800	1100	8.1	720	-	40	6.3	360	2	-	190	-	-	ND	-	0.2	0.11	-	-	0.4	-	-	-
MW-11	3/5/2004	TL	1800	1100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-11	3/31/2004	BSK	1700	1100	7.9	730	-	47	7.9	380	3	<2	220	890	<0.9	<0.1	-	0.2	0.13	-	<0.05	0.43	-	-	-
MW-11	11/13/2004	BSK	1900	1200	8.1	750	-	49	8.5	380	<2	<10	220	920	<4	<0.5	-	0.2	0.14	-	<0.05	0.49	-	-	-
MW-11	3/3/2005	TL	1900	1200	-	-	-	-	-	-	-	-	-	-	-	-	-	0.19	-	-	-	0.5	<5	-	-
MW-11	4/6/2005	UNK	1800	1100	8.0	740	-	55	8.8	400	2	ND	230	740	ND	ND	-	0.2	0.15	-	ND	0.52	-	-	-
MW-11	8/10/2005	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<6	-	-	-	-	-	<1	<0.4	-
MW-11	8/10/2005	TL	1800	1200	7.5	750	-	56	8.9	440	5.2	<2	250	910	<2	-	-	0.2	0.17	<0.005	0.41	0.53	-	-	<0.005
MW-11	10/14/2005	UNK	2000	1200	8.4	780	-	51	7.7	430	2	ND	230	760	ND	ND	-	0.2	0.15	-	ND	0.54	-	-	-
MW-11	4/20/2006	TL	1900	1200	7.5	730	-	46	7	440	5.2	<2	240	-	<2	-	-	-	-	<0.005	0.36	0.47	-	-	<0.005
MW-11	9/26/2006	TL	2000	1300	7.5	730	-	47	7.3	410	4.7	<10	240	-	<10	-	<20	0.21	0.15	<0.01	0.44	0.54	<10	<40	<0.01
MW-11	3/29/2007	TL	2000	1200	7.4	720	-	50	7.7	430	5.3	<20	230	880	<20	<1	<10	0.22	0.17	<0.005	-	-	<5	-	<0.005
MW-11	9/24/2007	TL	2100	1200	7.5	760	-	54	8.9	440	5.5	ND	260	930	-	-	ND	0.23	0.18	ND	0.89	0.6	-	-	ND
MW-11	4/6/2008	BCL	2200	1400	7.77	-	-	-	-	-	-	<1	290	976	<0.4	-	-	-	-	-	-	-	-	-	-
MW-11	9/3/2008	BCL	2200	1400	7.8	-	-	-	-	-	-	<1	310	952	<0.4	-	-	-	0.19	-	-	-	-	-	-
MW-11	4/2/2009	BCL	2060	1300	7.8	740	-	62	11	470	2.4	2	300	900	ND	-	-	-	0.18	ND	0.76	0.55	-	-	0.0044
MW-11	10/1/2009	BSK	2000	1200	8.1	-	-	-	-	-	-	<10	270	891	<5	-	-	-	-	-	-	-	-	-	-
MW-11	10/20/2009	BCL	2130	1300	7.76	740	-	62	12	470	2.3	<2	290	900	<0.9	-	<2	0.22	0.18	<0.002	0.79	0.55	-	-	0.0048
MW-11	10/20/2009	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	<0.4	-
MW-11	5/20/2010	BCL	2110	1300	7.82	740	-	63	12	450	2.6	1.6	310	900	ND	-	-	-	-	0.00081	1.6	0.54	-	-	0.0066
MW-11	9/15/2010	BCL	2140	1400	7.77	730	-	64	12	470	2.5	0.67	310	890	ND	-	0.97	0.24	0.2	ND	0.8	0.59	-	-	0.0043
MW-11	9/15/2010	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1.4	ND	-
MW-11	9/15/2010	SSC	2200	1300	7.4	-	-	-	-	-	-	<10	280	952	<2	-	-	-	-	-	-	-	-	-	-
MW-13	4/7/1984	UNK	1770	1043	7.8	-	-	15	14	365	4.8	10	128	840	-	-	-	0.41	-	-	0.67	0.88	-	-	-
MW-13	7/19/1984	UNK	1690	1040	7.4	-	-	14	12.4	350	7.1	13	126	809	-	-	-	-	-	-	0.58	0.86	-	-	-
MW-13	11/28/1984	UNK	1540	983	7.9	-	-	16	14	320	5.2	20	122	751	-	-	-	0.28	-	-	0.65	0.78	-	-	-
MW-13	4/24/1985	UNK	1550	1033	7.9	-	-	34	15	320	5.1	16	124	793	-	-	-	-	-	-	-	0.83	-	-	-
MW-13	11/5/1985	UNK	1540	1110	7.7	-	-	40	15	320	5.3	17	129	806	4	-	-	-	-	-	0.66	1	-	-	-
MW-13	9/24/1986	UNK	1610	1010	8.1	-	-	43	17	327	5.3	30	148	786	8	-	-	-	-	-	0.63	1	-	-	-
MW-13	4/22/1987	UNK	1600	1060	8.0	-	-	29	17	325	5.2	17	132	812	5.8	-	-	-	-	-	-	0.01	-	-	-
MW-13	3/24/1988	UNK	1580	1015	7.7	-	-	33	14	343	5.4	14	128	836	-	-	-	-	-	-	0.05	0.47	-	-	-
MW-13	12/19/1988	UNK	1310	945	7.6	-	-	12	4.7	320	3.6	30	138	643	8	-	-	-	-	-	0.22	0.27	-	-	-
MW-13	12/14/1989	UNK	1700	1060	7.8	-	-	33	12	350	4.3	82	207	633	-	-	-	-	-	-	0.49	0.695	-	-	-
MW-13	4/11/1990	UNK	1760	1125	7.8	-	-	39	16	360	4.8	82	236	638	1.8	-	-	-	-	-	0.625	0.891	-	-	-
MW-13	11/15/1990	UNK	-	1120	7.4	-	-	-	-	-	2.6	-	244	485	-	-	-	-	0.105	-	0.522	0.984	-	-	-
MW-13	6/20/1991	UNK	2400	1370	7.5	-	-	-	-	-	5.4	-	301	810	-	-	-	-	0.131	-	-	-	-	-	-
MW-13	10/29/1991	UNK	2400	1310	7.8	-	-	49	19	435	5.1	74	306	797	-	0.05	-	0.24	0.136	-	0.816	1.26	-	-	-
MW-13	2/24/1992	UNK	2400	1320	7.8	-	-	53	22	420	5.8	75	326	805	-	0.06	-	0.26	0.146	-	1.09	1.48	-	-	-
MW-13	10/20/1992	UNK	2400	1380	7.0	-	-	25	19.7	445	5.6	70	321	772	-	-	-	0.24	0.155	-	1.25	1.64	-	-	-
MW-13	3/1/1993	UNK	-	1330	7.4	-	-	64	25	387	5.4	85	315	778	-	0.05	-	0.27	0.179	-	1.66	2.05	-	-	-
MW-13	9/22/1993	BCL	3000	1240	7.3	-	9.7	69	26	371	6.1	65	300	-	-	-	-	-	-	-	-	-	-	-	-
MW-13	9/27/1993	UNK	-	1240	7.3	-	-	69	26	371	6.1	65	300	780	-	-	-	0.24	0.196	-	1.7	2.27	-	-	-

Table 5 (continued)
Summary of Groundwater Quality Laboratory Results for Meyers Farm Monitoring Program

								Cations				Anions					Trace Elements								
Well Owner and Name	Date	Lab[1]	EC[2] (µmhos/cm)	TDS (mg/L)	pH	Total Alkalinity[3] (mg/L)	SAR	Ca (mg/L)	Mg (mg/L)	Na (mg/L)	K (mg/L)	SO_4 (mg/L)	Cl (mg/L)	HCO_3[3] (mg/L)	NO_3[3] (mg/L)	F (mg/L)	As (µg/L)	B (mg/L)	Ba (mg/L)	Cu (mg/L)	Fe (mg/L)	Mn (mg/L)	Mo (µg/L)	Se (µg/L)	Zn (mg/L)
MW-13	3/10/1994	UNK	2140	1280	7.3	-	-	77	31	349	6.1	85	290	728	-	-	-	0.26	0.226	-	2.32	2.61	-	-	-
MW-13	9/20/1994	UNK	2120	1260	7.2	-	-	76	32	343	6.1	80	288	728	-	-	-	0.24	0.2	-	0.32	2.67	-	-	-
MW-13	3/16/1995	UNK	2200	1390	7.1	-	-	93	40	367	6.9	122	313	768	-	-	-	0.25	0.231	-	-	3.43	-	-	-
MW-13	10/10/1995	UNK	2570	1540	7.2	-	-	113	45	381	6.8	84	369	831	-	-	-	0.33	0.29	-	-	4.06	-	-	-
MW-13	4/6/1996	UNK	2800	1610	7.2	-	-	114	52	432	8	80	410	1020	-	-	-	0.31	0.296	-	-	-	-	-	-
MW-13	6/10/1996	UNK	2930	1690	8.2	-	-	105	50	484	10	48	436	1090	-	-	-	0.34	0.341	-	0.083	4.18	-	-	-
MW-13	6/3/1997	UNK	2740	1640	7.2	-	-	96	47	449	6.4	82.4	384	1000	-	-	-	0.33	0.292	-	-	3.85	-	-	-
MW-13	3/23/1998	UNK	2700	1900	7.0	-	-	120	57	580	10	69	470	970	-	-	-	0.28	0.44	-	-	3.4	-	-	-
MW-13	8/26/1998	UNK	3200	1800	7.3	-	-	120	55	510	7.7	73	490	900	10.2	ND	-	0.26	0.39	-	ND	4.3	-	-	-
MW-13	4/21/1999	BSK	3000	1800	7.5	1000	9.8	130	60	540	9	62	390	1220	<6	<3	-	0.2	0.41	-	<0.05	4	-	-	-
MW-13	5/20/2000	BSK	2500	1600	7.0	870	9.1	94	42	420	8	75	370	1061	6.3	<3	-	0.3	0.24	-	0.07	2.4	-	-	-
MW-13	12/17/2000	BSK	2400	1500	7.3	760	8.6	84	38	380	7	70	370	930	<5	<2.5	-	0.3	0.22	-	<0.05	2.2	-	-	-
MW-13	6/5/2001	BSK	2200	1700	7.3	560	7.8	87	40	350	8	100	380	683	<5	<2.5	-	0.2	0.18	-	<0.05	2.6	-	-	-
MW-13	10/3/2001	UNK	2400	1400	6.9	-	-	91	43	380	7	86	390	640	ND	ND	-	0.2	0.18	-	ND	2.4	-	-	-
MW-13	5/2/2002	BSK	2400	1400	7.6	600	-	81	38	360	6	100	380	600	<8	<4	-	0.2	0.18	-	<0.05	2.1	-	-	-
MW-13	12/10/2002	BSK	2100	1200	7.3	520	-	74	32	300	5	84	320	-	-	ND	-	0.2	0.15	-	ND	2	-	-	-
MW-13	3/22/2003	BSK	2200	1300	7.5	550	-	72	30	320	4	74	360	-	-	ND	-	0.3	0.16	-	ND	2	-	-	-
MW-13	9/30/2003	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<3	-	-	-	-	-	2	<0.4	-
MW-13	9/30/2003	TL	2500	1400	7.0	190	-	90	40	430	17	64	400	230	<1.8	-	-	0.24	0.2	<0.05	1.6	2.2	-	-	<0.05
MW-13	10/24/2003	BSK	2500	1400	-	720	-	88	40	360	8	ND	400	-	-	ND	-	0.2	0.18	-	ND	2.2	-	-	-
MW-13	3/31/2004	BSK	2200	1400	7.7	630	-	85	39	400	6	96	400	770	<0.9	<0.1	-	0.2	0.2	-	0.06	2.2	-	-	-
MW-13	4/1/2004	TL	2300	1400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-13	11/13/2004	BSK	2400	1500	7.9	820	-	71	36	450	7	36	370	1000	<4	<0.5	-	0.3	0.21	-	<0.05	1.9	-	-	-
MW-13	3/8/2005	TL	3200	1900	-	-	-	-	-	-	-	-	-	-	-	-	-	0.28	-	-	-	2.9	<25	-	-
MW-13	4/6/2005	UNK	2800	1700	7.8	800	-	92	49	500	8	100	490	800	ND	ND	-	0.3	0.28	-	ND	2.7	-	-	-
MW-13	8/11/2005	TL	1300	890	7.2	250	-	27	15	270	8.7	120	220	310	4.6	-	-	0.23	0.081	<0.005	0.29	0.76	-	-	<0.005
MW-13	8/11/2005	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<6	-	-	-	-	-	5.6	<0.4	-
MW-13	10/13/2005	UNK	1200	660	8.1	210	-	20	9.9	220	3	120	160	210	ND	ND	-	0.2	0.06	-	0.06	0.79	-	-	-
MW-13	4/19/2006	UNK	1273	773	7.6	394	-	23	12	238	6.3	66	158	394	ND	ND	-	0.22	0.1	-	0.03	0.83	-	-	-
MW-13	4/20/2006	TL	1500	950	7.3	510	-	27	14	280	8	54	180	-	<2	-	-	-	-	<0.005	2	1.1	-	-	<0.005
MW-13	9/25/2006	UNK	618	427	7.8	222	-	9.4	4.6	133	2.3	71	86	222	ND	ND	-	0.21	0.04	-	0.01	0.38	-	-	-
MW-13	9/26/2006	TL	740	470	7.6	210	-	14	6.7	150	5.7	55	74	-	11	-	10	0.25	0.037	<0.005	2.8	0.52	8.4	<20	0.0069
MW-13	3/29/2007	TL	660	410	7.6	150	-	7.4	3.6	140	4.3	67	78	190	<4	<0.2	<10	0.25	0.034	<0.005	-	-	9.9	-	0.01
MW-13	9/24/2007	TL	1000	590	7.3	280	-	19	9.1	200	7.4	98	200	340	-	-	ND	0.27	0.037	ND	0.61	0.58	-	-	ND
MW-13	9/24/2007	UNK	770	470	7.5	-	-	-	-	-	-	56	94	240	ND	-	-	-	-	-	-	-	-	-	-
MW-13	4/5/2008	BCL	515	320	8.03	-	-	-	-	-	-	46	57	146	<0.4	-	-	-	-	-	-	-	-	-	-
MW-13	9/3/2008	BCL	633	380	7.9	-	-	-	-	-	-	59	69	183	<0.4	-	-	-	0.016	-	-	-	-	-	-
MW-13	4/2/2009	BCL	931	610	7.7	240	-	16	7.7	190	3.2	82	120	290	1	-	-	-	0.039	0.00023	0.066	0.64	-	-	0.0094
MW-13	10/1/2009	BSK	760	420	8.1	-	-	-	-	-	-	74	88	207	<2	-	-	-	-	-	-	-	-	-	-
MW-13	10/20/2009	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.35	<0.4	-
MW-13	10/20/2009	BCL	700	470	7.73	150	-	10	4.9	140	2.4	76	87	190	<0.4	-	2.2	0.23	0.022	0.00077	0.067	0.39	-	-	0.0051
MW-13	5/20/2010	BCL	786	490	7.78	150	-	13	6.3	150	2.8	94	100	180	ND	-	-	-	-	0.00049	0.15	0.58	-	-	0.0042
MW-13	9/15/2010	BCL	459	330	8.02	110	-	5.2	2.4	86	1.8	41	46	130	ND	-	5.1	0.22	0.013	ND	0.11	0.28	-	-	0.0029
MW-13	9/15/2010	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.65	ND	-
MW-13	9/15/2010	SSC	460	260	7.8	-	-	-	-	-	-	36	46	134	<2	-	-	-	-	-	-	-	-	-	-
MW-18	12/9/1988	BCL	4700	2490	7.8	-	22.2	19	20	580	387	92	460	1964	1	0.1	<10	0.3	0.4	-	1.4	0.13	-	<5	-
MW-18	12/20/1988	UNK	5400	3220	7.5	-	-	30	70	1035	140	69	690	2451	-	-	-	-	-	-	0.06	0.19	-	-	-

Table 5 (continued)
Summary of Groundwater Quality Laboratory Results for Meyers Farm Monitoring Program

								Cations				Anions					Trace Elements								
Well Owner and Name	Date	Lab[1]	EC[2] (µmhos/cm)	TDS (mg/L)	pH	Total Alkalinity[3] (mg/L)	SAR	Ca (mg/L)	Mg (mg/L)	Na (mg/L)	K (mg/L)	SO_4 (mg/L)	Cl (mg/L)	HCO_3[3] (mg/L)	NO_3[3] (mg/L)	F (mg/L)	As (µg/L)	B (mg/L)	Ba (mg/L)	Cu (mg/L)	Fe (mg/L)	Mn (mg/L)	Mo (µg/L)	Se (µg/L)	Zn (mg/L)
MW-18	12/8/1989	UNK	5500	2980	8.0	-	-	41	39	820	233	80	626	2310	-	-	-	-	-	-	2.782	0.309	-	-	-
MW-18	5/21/1990	UNK	-	3200	-	-	-	-	-	-	265	-	-	2410	-	-	-	-	-	-	-	-	-	-	-
MW-18	11/16/1990	UNK	-	3000	7.3	-	-	-	-	-	310	-	634	2621	-	-	-	-	-	-	3.67	0.482	-	-	-
MW-18	6/18/1991	UNK	5500	2820	7.6	-	-	-	-	-	310	-	564	2602	-	-	-	-	0.768	-	-	-	-	-	-
MW-18	10/22/1991	UNK	5500	2930	7.5	-	-	41	38	830	300	18	576	2350	-	0.07	-	0.36	0.682	-	2.44	0.359	-	-	-
MW-18	2/25/1992	UNK	5100	2980	7.4	-	-	40	47	830	322	18	638	2470	-	0.07	-	0.44	0.775	-	2.94	0.353	-	-	-
MW-18	10/23/1992	UNK	-	1980	7.4	-	-	52	51	945	352	0.17	620	2770	-	0.05	-	0.4	0.68	-	2.7	0.37	-	-	-
MW-18	3/9/1993	UNK	5600	3120	7.6	-	-	45	51	842	306	16	635	2480	-	0.06	-	0.46	0.692	-	2.86	0.415	-	-	-
MW-18	9/23/1993	UNK	5900	3400	7.5	-	-	46	48	930	336	13	675	2490	-	0.07	-	0.45	0.761	-	3.29	0.501	-	-	-
MW-18	3/14/1994	UNK	6390	3680	7.4	-	-	47	47	1070	387	18	755	2810	-	0.07	-	0.54	0.896	-	3.19	0.534	-	-	-
MW-18	10/3/1994	UNK	6120	3350	7.2	-	-	40	42	104	330	14	745	2700	-	0.06	-	0.5	0.84	-	4.26	0.44	-	-	-
MW-18	3/15/1995	UNK	7100	4200	7.3	-	-	32	40	1200	436	14	845	3140	-	0.08	-	0.51	0.786	-	0.413	0.287	-	-	-
MW-18	10/15/1995	UNK	7700	4660	7.6	-	-	25	43	1300	445	12	936	2480	-	0.07	-	0.66	0.82	-	0.46	0.23	-	-	-
MW-18	4/4/1996	UNK	7930	4530	7.5	-	-	23	45	1440	407	10	956	3740	-	0.08	-	0.67	0.864	-	3.6	0.196	-	-	-
MW-18	10/4/1996	UNK	8030	4640	8.7	-	-	25	46	1460	415	6.2	920	3680	-	0.07	-	0.65	0.837	-	0.475	0.146	-	-	-
MW-18	6/4/1997	UNK	7980	4700	7.5	-	-	40	64	1360	408	6.8	916	3830	-	0.07	-	0.64	0.894	-	0.435	0.275	-	-	-
MW-18	3/24/1998	UNK	7400	4600	7.4	-	-	45	79	1400	450	-	910	3100	1.3	-	-	0.5	1.1	-	0.43	0.31	-	-	-
MW-18	8/25/1998	UNK	8200	4600	7.5	-	-	46	79	1300	470	ND	870	3200	ND	ND	-	0.49	1.1	-	0.59	0.34	-	-	-
MW-18	4/20/1999	BSK	7900	4600	7.4	3200	30.9	44	82	1500	510	<200	860	3904	<20	<10	-	0.4	1.1	-	0.6	0.34	-	-	-
MW-18	5/21/2000	BSK	6700	4000	7.5	3200	21.6	54	54	940	600	<150	630	3904	<15	<7.5	-	0.4	1.4	-	0.54	0.27	-	-	-
MW-18	12/19/2000	BSK	7200	3800	7.4	3000	18.6	52	54	800	550	<200	720	3660	<20	<10	-	0.4	1.3	-	0.44	0.26	-	-	-
MW-18	6/6/2001	BSK	6800	3700	7.4	2800	21.9	44	46	870	580	<200	780	3360	-	<10	-	0.4	1.2	-	0.58	0.24	-	-	-
MW-18	10/3/2001	UNK	6900	3600	7.4	-	-	39	57	950	530	ND	760	2800	ND	ND	-	0.4	1.1	-	0.6	0.18	-	-	-
MW-18	5/2/2002	BSK	7200	4100	7.8	2700	-	36	48	1100	380	<240	870	2700	<24	<12	-	0.4	1	-	0.4	0.19	-	-	-
MW-18	9/19/2002	TL	7100	4000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-18	12/10/2002	BSK	6900	3800	7.8	2400	-	25	28	770	400	ND	770	-	-	ND	-	0.4	0.95	-	0.66	0.15	-	-	-
MW-18	1/13/2003	TL	7500	4000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-18	3/22/2003	BSK	7000	3900	8.0	2600	-	26	28	1700	520	ND	820	-	-	ND	-	0.5	0.99	-	0.79	0.14	-	-	-
MW-18	3/23/2003	BSK	7000	3900	8.0	2600	-	26	28	1700	520	<120	820	3170	<0.9	<6	-	0.5	0.99	-	0.79	0.14	-	-	-
MW-18	9/30/2003	TL	5700	3600	7.6	190	-	27	24	940	590	20	690	230	<1.8	-	-	0.51	0.89	<0.05	2.1	<0.03	-	-	<0.05
MW-18	9/30/2003	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	-	-	-	-	-	9.6	<0.4	-
MW-18	10/25/2003	BSK	6600	3700	8.1	2500	-	31	28	970	460	ND	790	-	-	ND	-	0.4	0.86	-	0.91	0.13	-	-	-
MW-18	3/4/2004	TL	5200	2800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-18	3/31/2004	BSK	5000	2700	8.1	2000	-	19	17	660	450	<2	540	2440	<0.9	<0.1	-	0.5	0.66	-	1	0.09	-	-	-
MW-18	4/1/2004	UNK	5000	2700	8.1	2000	-	19	17	660	450	ND	540	2000	ND	ND	-	0.5	0.66	-	1	0.09	-	-	-
MW-18	11/14/2004	BSK	5000	2800	8.0	2000	-	27	29	660	430	44	550	2440	<18	<2	-	0.5	0.66	-	0.27	0.12	-	-	-
MW-18	3/8/2005	TL	4700	2600	-	-	-	-	-	-	-	-	-	-	-	-	-	0.6	-	-	-	0.12	<25	-	-
MW-18	4/6/2005	UNK	4200	2400	8.0	1800	-	29	27	670	260	ND	470	1800	ND	ND	-	0.56	0.48	-	0.22	0.17	-	-	-
MW-18	8/11/2005	TL	7100	5200	7.1	1800	-	89	71	1700	210	550	1100	2100	470	-	-	0.41	0.31	0.05	0.53	0.87	-	-	<0.025
MW-18	8/11/2005	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<6	-	-	-	-	-	105	31	-
MW-18	10/13/2005	UNK	5000	2800	8.0	1800	-	48	43	860	210	ND	610	1800	62	ND	-	0.6	0.43	-	0.14	0.39	-	-	-
MW-18	4/20/2006	UNK	5176	2740	7.5	1644	-	37	32	867	176	48	634	1644	ND	ND	-	0.34	0.36	-	0.13	0.41	-	-	-
MW-18	4/20/2006	TL	4600	2800	7.2	1100	-	39	35	930	220	54	600	-	<2	-	-	-	-	<0.01	6.5	0.4	-	-	<0.01
MW-18	9/26/2006	UNK	6715	3915	7.7	1451	-	47.5	38.4	1116	82.8	581	781	1451	276.2	ND	-	0.39	0.11	-	0.06	0.22	-	-	-
MW-18	9/26/2006	TL	5900	4100	7.4	1500	-	51	41	1400	120	480	710	-	260	-	<50	0.41	0.15	0.029	0.64	0.21	160	<100	<0.025
MW-18	3/28/2007	TL	4500	2800	7.4	1400	-	48	41	880	150	150	600	1700	-	-	ND	0.4	0.48	ND	0.18	0.47	23	ND	0.048
MW-18	9/24/2007	TL	4900	2800	7.2	1600	-	45	45	1100	150	100	600	2000	-	-	ND	0.44	0.35	0.031	0.61	0.45	-	-	ND
MW-18	4/5/2008	BCL	4010	2500	7.61	-	-	-	-	-	-	140	560	1464	<0.9	-	-	-	-	-	-	-	-	-	-

Table 5 (continued)
Summary of Groundwater Quality Laboratory Results for Meyers Farm Monitoring Program

								Cations				Anions					Trace Elements								
Well Owner and Name	**Date**	**Lab[1]**	**EC[2]** (µmhos/cm)	**TDS** (mg/L)	**pH**	**Total Alkalinity[3]** (mg/L)	**SAR**	**Ca** (mg/L)	**Mg** (mg/L)	**Na** (mg/L)	**K** (mg/L)	**SO_4** (mg/L)	**Cl** (mg/L)	**HCO_3[3]** (mg/L)	**NO_3[3]** (mg/L)	**F** (mg/L)	**As** (µg/L)	**B** (mg/L)	**Ba** (mg/L)	**Cu** (mg/L)	**Fe** (mg/L)	**Mn** (mg/L)	**Mo** (µg/L)	**Se** (µg/L)	**Zn** (mg/L)
MW-18	9/4/2008	BCL	3500	2200	7.6	-	-	-	-	-	-	150	510	1220	2.3	-	-	-	0.16	-	-	-	-	-	-
MW-18	4/2/2009	BCL	4440	3500	7.7	1300	-	36	33	980	68	160	710	1600	ND	-	-	-	-	0.0023	3.8	0.42	-	-	0.0065
MW-18	4/2/2009	UNK	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.23	-	-	-	-	-	-
MW-18	10/2/2009	BSK	4300	2500	8.1	-	-	-	-	-	-	150	620	2074	<20	-	-	-	-	-	-	-	-	-	-
MW-18	10/20/2009	BCL	4320	2700	7.59	1300	-	38	38	920	98	150	640	1600	<2.2	-	8.5	0.35	0.3	0.00092	5.7	0.36	-	-	0.0065
MW-18	10/20/2009	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	<0.4	-
MW-18	5/20/2010	BCL	3670	2400	7.72	1100	-	29	28	740	77	150	600	1300	ND	-	-	-	-	0.0021	4.3	0.24	-	-	0.0057
MW-18	9/15/2010	BCL	1990	1500	8.03	560	-	8	7	430	32	120	260	690	ND	-	4.1	0.25	0.049	0.0019	1.1	0.072	-	-	0.0038
MW-18	9/15/2010	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.6	ND	-
MW-18	9/15/2010	SSC	2100	1300	7.7	-	-	-	-	-	-	110	250	740	<2	-	-	-	-	-	-	-	-	-	-
Meyers Farm																									
EW-1	6/25/2004	TL	1100	680	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EW-1	9/13/2004	FGL	1040	650	6.9	-	-	25	16	175	2	133	120	240	<0.4	-	<2	0.3	0.06	0.004	1.64	0.37	-	-	<0.01
EW-1	9/13/2004	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.3	<0.4	-
EW-1	8/1/2007	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.3	<0.4	-
EW-1	8/1/2007	TL	760	490	7.4	210	-	22	13	150	3.5	66	80	260	<4	-	<10	0.31	0.052	<0.005	1.4	0.42	12	<20	<0.005
EW-1	5/9/2008	BCL	660	440	7.3	-	-	24	16	110	3.3	-	60	180	-	-	ND	0.26	0.054	ND	2.2	0.56	-	-	ND
EW-1	5/9/2008	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.33	<0.4	-
EW-1	11/25/2008	BCL	807	480	7.2	130	-	33	22	110	2.7	130	88	160	-	-	1.1	0.25	0.07	0.0074	10	0.99	11	ND	0.054
EW-1	3/11/2009	BCL	1090	800	7.62	240	-	45	27	190	2.6	170	120	290	-	-	ND	0.32	0.091	0.00057	4.1	1.1	-	-	0.0049
EW-1	3/11/2009	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	ND	-
EW-1	8/14/2009	BCL	1100	720	7.73	270	-	34	19	220	2.5	130	150	320	-	-	ND	0.35	0.078	0.00086	1.7	0.63	-	-	0.0061
EW-1	8/14/2009	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.7	ND	-
EW-2	8/1/2007	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.78	<0.4	-
EW-2	8/1/2007	TL	1500	960	7.4	520	-	33	16	340	5.2	65	140	630	<6	-	<10	0.34	0.054	<0.005	0.67	0.79	12	<20	<0.005
EW-2	6/2/2008	BCL	1530	980	7.58	400	-	35	28	290	2.8	180	180	480	-	-	ND	0.34	0.11	ND	1.4	1.6	-	-	0.0052
EW-2	6/2/2008	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17.5	<0.4	-
EW-2	11/25/2008	BCL	956	580	7.53	160	-	17	14	180	2.3	140	120	200	-	-	1.8	0.24	0.08	0.01	11	0.96	21	ND	0.0099
EW-2	8/14/2009	BCL	1390	920	7.81	450	-	27	10	320	1.9	83	170	550	-	-	ND	0.28	0.079	0.00092	0.45	0.5	-	-	0.0055
EW-2	8/14/2009	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.15	ND	-
EW-3	8/1/2007	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.9	<0.4	-
EW-3	8/1/2007	TL	1100	730	7.6	390	-	22	8.9	260	3.3	47	99	480	<4	-	<10	0.3	0.1	<0.005	0.57	0.43	9.4	<20	<0.005
EW-3	5/9/2008	BCL	960	640	7.5	-	-	26	15	200	3.7	33	84	380	-	-	ND	0.28	0.074	ND	3.2	1.1	-	<0.4	ND
EW-3	5/9/2008	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.83	-	-
EW-3	11/25/2008	BCL	796	450	7.42	190	-	31	23	120	2.6	84	86	230	-	-	11	0.26	0.15	0.027	20	1.5	12	ND	0.29
EW-3	8/14/2009	BCL	1350	980	7.82	480	-	31	11	310	1.9	73	150	590	-	-	ND	0.33	0.077	0.00066	0.49	0.56	-	-	0.0062
EW-3	8/14/2009	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.2	ND	-
EW-4	6/2/2008	BCL	635	440	7.77	140	-	14	9.3	110	2.1	78	64	180	-	-	ND	0.28	0.052	ND	1.6	0.28	-	-	0.0057
EW-4	6/2/2008	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.13	<0.4	-
EW-4	11/25/2008	BCL	738	430	7.44	130	-	28	16	100	3.3	90	97	150	-	-	ND	0.23	0.091	0.0018	2.7	0.51	7.1	ND	0.013
EW-4	3/11/2009	BCL	883	580	7.64	200	-	27	16	160	2.9	100	110	240	-	-	ND	0.32	0.084	0.0004	2.1	0.43	-	-	0.0047
EW-4	3/11/2009	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	ND	-
EW-5	6/2/2008	BCL	954	620	7.79	250	-	12	7.6	210	1.4	95	110	300	-	-	ND	0.41	0.042	ND	1	0.19	-	-	ND
EW-5	6/2/2008	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.35	<0.4	-
EW-5	11/25/2008	BCL	746	450	7.7	190	-	7.5	4.8	160	1.2	78	72	230	-	-	ND	0.33	0.065	0.027	7.7	0.17	10	ND	0.012
EW-5	3/11/2009	BCL	1220	880	7.74	290	-	17	10	280	1.5	160	150	350	-	-	ND	0.47	0.053	0.00037	2	0.33	-	-	0.0033

Table 5 (continued)
Summary of Groundwater Quality Laboratory Results for Meyers Farm Monitoring Program

								Cations				Anions					Trace Elements								
Well Owner and Name	Date	Lab[1]	EC[2] (µmhos/cm)	TDS (mg/L)	pH	Total Alkalinity[3] (mg/L)	SAR	Ca (mg/L)	Mg (mg/L)	Na (mg/L)	K (mg/L)	SO_4 (mg/L)	Cl (mg/L)	HCO_3[3] (mg/L)	NO_3[3] (mg/L)	F (mg/L)	As (µg/L)	B (mg/L)	Ba (mg/L)	Cu (mg/L)	Fe (mg/L)	Mn (mg/L)	Mo (µg/L)	Se (µg/L)	Zn (mg/L)
EW-5	3/11/2009	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	ND	-
EW-5	8/14/2009	BCL	1640	1100	7.78	370	-	15	6.9	360	1.7	150	240	450	-	-	ND	0.46	0.061	0.00089	0.92	0.21	-	-	0.0052
EW-5	8/14/2009	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	ND	-
EW-6	6/2/2008	BCL	682	440	7.54	160	-	20	12	110	2.2	67	79	200	-	-	ND	0.26	0.045	ND	2.6	0.37	-	-	0.0056
EW-6	6/2/2008	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.75	<0.4	-
EW-6	11/25/2008	BCL	802	470	7.16	140	-	37	20	110	3.4	110	100	160	-	-	1.2	0.26	0.073	0.0026	6.5	0.67	9.3	ND	0.012
EW-6	3/11/2009	BCL	1070	660	7.61	260	-	28	15	210	2.7	110	140	320	-	-	ND	0.38	0.072	0.00037	3	0.43	-	-	0.004
EW-6	3/11/2009	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	ND	-
EW-6	8/14/2009	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.65	ND	-
EW-6	8/14/2009	BCL	1180	740	7.67	300	-	24	11	230	2.9	110	160	360	-	-	ND	0.37	0.071	ND	1.8	0.37	-	-	0.0058
EW-7	11/12/2008	BCL	1330	800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EW-7	3/11/2009	BCL	1550	860	7.8	480	-	52	14	300	2.6	55	200	590	-	-	ND	0.21	0.14	0.00042	0.54	0.51	-	-	0.0037
EW-7	3/11/2009	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND	ND	-
EW-7	8/14/2009	BCL	1410	900	7.83	450	-	43	8.4	290	2.2	28	210	550	-	-	ND	0.21	0.096	ND	0.2	0.41	-	-	0.0069
EW-7	8/14/2009	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.65	ND	-
EW-8	11/8/2008	BCL	1130	680	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EW-8	3/11/2009	BCL	1090	720	7.9	280	-	48	16	180	2.2	69	160	340	-	-	ND	0.23	0.091	0.00076	0.35	0.52	-	-	0.074
EW-8	3/11/2009	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND	ND	-
EW-8	8/14/2009	OBL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.95	ND	-
EW-8	8/14/2009	BCL	1030	670	7.92	280	-	38	10	190	1.8	65	150	350	-	-	ND	0.21	0.07	0.0037	0.27	0.52	-	-	0.0072

1. Laboratory Abbreviations: AT - Agri Tech, Inc., Kerman; BD - Betz Dearborn; BCL - BC Laboratories, Bakersfield; BSK - BSK Analytical Laboratories, Fresno; CLS - California Laboratory Services, Rancho Cordova; FGL - Fruit Growers Laboratory, Santa Paula; JML - JM Lord, Fresno; OBL = Olson Biochemistry Laboratories of South Dakota State University, Brookings, SD; TL - The Twining Laboratories, Inc., Fresno.; UAG - U.S. Agricultural Consultants and Laboratories, Burbank; USGS - U.S. Geological Survey

2. Electrical Conductivity at 25°C

3. HCO3 , Total Alkalinity and NO3 reported as HCO3 , CaCO3 and NO3 respectively.

NA = Not Available; ND = Non Detect (detection limit unknown)