JOSHUA BASIN WATER DISTRICT
It's the Water!

REGULAR MEETING OF THE WATER RESOURCES AND OPERATIONS COMMITTEE

WEDNESDAY, MAY 24, 2017 10:00 AM
61750 CHOLLITA ROAD, JOSHUA TREE, CA 92252
AGENDA

1. CALL TO ORDER
2. PLEDGE OF ALLEGIANCE
3. DETERMINATION OF QUORUM
4. APPROVAL OF AGENDA
5. PUBLIC COMMENT
6. APPROVE MINUTES OF THE PRIOR COMMITTEE MEETING
   - January 23, 2017 Regular Meeting of the Water Resources and Operations Committee
7. WATER RESERVOIR RECOATING COST ESTIMATES
8. DISCUSSION OF USGS MONITORING PROGRAM AND WHERE WE INTEND TO PROCEED
9. WATER LINE REPLACEMENT- Receive and approve for presentation to the Board.
10. STAFF REPORT
11. ADJOURNMENT

INFORMATION

During "Public Comment", please use the podium microphone. State your name, have your information prepared, and be ready to provide your comments. A 3-minute time limit will be imposed. The District is interested and appreciates your comments.

Any person with a disability who requires accommodation in order to participate in this meeting should telephone Joshua Basin Water District at (760) 366-8438, at least 48 hours prior to the meeting in order to make a request for a disability-related modification or accommodation.

Materials related to an item on this Agenda submitted to the Committee after distribution of the agenda packet are available for public inspection in the District's office located at 61750 Chollita Road, Joshua Tree, California 92252 during normal business hours.

JOSHUA BASIN WATER DISTRICT
Minutes of the
REGULAR MEETING OF THE WATER RESOURCES AND OPERATIONS COMMITTEE
Monday, January 23, 2017

1. CALL TO ORDER 10:00 AM

2. PLEDGE OF ALLEGIANCE

Committee Members Present:	Mickey Luckman, President Bob Johnson, Vice President
Staff Present:	Curt Sauer, General Manager Randy Mayes, Director of Water Resources and Operations
Guests:	0

3. DETERMINATION OF QUORUM
   A quorum is present.

4. APPROVAL OF AGENDA
   MSC/Johnson/Luckman 2/0 to approve the Agenda for the January 23, 2017 Regular Meeting of the Water Resources and Operations Committee.

5. PUBLIC COMMENT
   None.

6. APPROVE MINUTES OF THE PRIOR COMMITTEE MEETING
   MSC Luckman/Johnson 2/0 to approve minutes from the November 21, 2016 the Regular Meeting of the Water Resources and Operations Committee.

7. REVIEW PIPELINE REPLACEMENT AT LA BRISA– General Manager showed pipeline replacement activity from the La Brisa work order.

8. OFFICE REMODEL - General Manager discussed proposed remodel of office, architectural drawings and estimated costs for office furniture ($10,000), parcel file system upgrade ($15,000) and office remodel ($25,000). Committee approved the project (2 – 0) to be brought to the Board.

9. OFFICE HVAC SYSTEM – FINDINGS AND ESTIMATED COSTS - General Manager discussed condition of 30-year-old HVAC system, findings of an engineering report auto remedy the problems and an estimated cost of $80,000 to replace existing system or upgrade to a Split System. Committee approved taking the project to the Board (2-0) for approval.

10. STAFF REPORT – No Staff Report was given

11. ADJOURNMENT –
    MSC/Luckman/Johnson 2/0 to adjourn the meeting at 11:00 a.m.

Respectfully submitted:

_____

Curt Sauer, General Manager

Mr. Curt Sauer, General Manager
Joshua Basin Water District
Post Office Box 675
61750 Chollita Road
Joshua Tree, California 92252

Dear Mr. Sauer:

This letter confirms discussions between our respective staffs, concerning the continuation of the cooperative water-resources program between the Joshua Basin Water District (JBWD) and the U.S. Geological Survey (USGS) for the period May 1, 2017 to June 20, 2018.

Based on conversations with JBWD staff, it is our understanding that JBWD wishes to 1) continue monitoring at the recharge facility; 2) continue the basin-wide water-quality monitoring program; 3) assess the vertical contribution of wellbore flow and nitrate to JBWD production well 10; 4) assess the vertical distribution of septage/nitrate in the unsaturated zone in the vicinity of the residential development west of the recharge facility; and 5) better understand the Yucca Barrier.

Summary of Previous Work (2000-2015):

Groundwater historically has been the sole source of water supply for the community of Joshua Tree. JBWD supplies water to the community from the underlying Joshua Tree and Copper Mountain groundwater subbasins. JBWD is concerned with the long-term sustainability of the underlying aquifer. In order to manage the groundwater resources and to identify future mitigating measures, a thorough understanding of the groundwater system is needed. Since 2000, JBWD has partnered with the USGS to improve the understanding of the geohydrologic and geochemical framework of the Joshua Tree and Copper Mountain groundwater subbasins.

The geohydrologic framework of the subbasin was refined by collecting and interpreting groundwater-level and water-quality data and lithologic and geophysical data. Geology, hydraulic properties, and water-use in Joshua Tree and Copper Mountain subbasins were integrated into a MODFLOW model that simulated transient groundwater flow for the period of groundwater development in the subbasins between 1958 and 2001 (Nishikawa and others, 2004). Four unsaturated-zone monitoring sites were installed by the USGS in the Joshua Tree area (JTUZ-1, JTUZ-2, JTUZ-3, and JTUZ-4) (fig. 1). JTUZ-1 and -2 were installed in residential development areas and JTUZ-3 and 4 were installed within the boundary of the artificial-recharge facility operated by JBWD. Sites JTUZ-1 and -4 include monitoring wells installed at the top of the saturated zone.

Unsaturated-zone data were collected at JTUZ-1 and -2 and water-level data were collected at JTUZ-1 starting in June 2007. Data collection at these sites ceased in 2014. The nitrate concentrations were very high (well above the MCL of 10 mg/L as N) in samples from JTUZ-

1 lysimeters at 91 and 346 feet (ft) below land surface (bls) (as high as 1,000 mg/L as N). These nitrate concentrations greatly exceed the nitrogen concentration commonly associated with septic-tank effluent. A possible source for these high concentrations is the mineralization and subsequent leaching of naturally occurring nitrogen in the unsaturated zone. Because of the desert climate, nitrogen from buried plant material has not been mineralized and leached by the percolation of rainfall for many thousands of years. The nitrate concentrations were low (< 6 mg/L as N) in samples collected from JTUZ-1 lysimeter at 516 ft bls. The low nitrate concentrations may indicate that the wastewater front has not yet reached the depth of the lysimeter or that denitrification is occurring in the unsaturated zone. Nitrate concentrations in samples from JTUZ-2 lysimeter at 61 ft bls ranged from about 20-45 mg/L as N. These nitrate concentrations are in the range of reported nitrate concentrations in septic-tank effluent. The data indicate that the septage in the unsaturated zone at JTUZ-1 had not reached the water table prior to 2015. The matric-potential data indicate that in 2014 the front was between 343 and 461 ft bls while the suction-cup lysimeter data indicate that the wetting front is at least at 346 ft bls. However, elevated nitrate (as N) concentrations in the well at JTUZ-1 indicate that septage, likely from other areas, has reached the water table and has migrated through the saturated zone to the vicinity of JTUZ-1. In addition, water levels at JTUZ-1 appear to have reached their lowest level in 2014 (522.67 ft bls on 8/6/2014) and have recovered by over 2 ft to 520.20 ft bls (7/7/16). Rising water levels at JTUZ-1 have been accompanied by increasing nitrate concentrations in monitoring well JTUZ-1 and have risen from about 12 mg/L (as N) to about 20 mg/L (as N) (fig. 2).

Unsaturated-zone data were collected at JTUZ-3 starting in February 2010. Unsaturated-zone and water-level data were collected from JTUZ-4 starting in July 2012. Monitoring was discontinued at all unsaturated-zone sites around January 2013 and resumed in the summer of 2014 prior to the start of recharge activities in the vicinity of JTUZ-3 and -4. Water-quality samples were collected from JBWD production wells 10, 14, 15, 16, and 17 and from monitoring wells JTUZ-1 and JTUZ-4 to establish baseline (pre-recharge) conditions.

On October 7, 2014 imported water was first applied at the JBWD recharge facility. About 312 acre-feet of water were applied to pond #3 and application of recharge water ceased on October 27, 2014. The wetting-front arrived at the water table at JTUZ-4 on October 30, 2014 and moved downward to the water table at an average vertical rate of about 18 feet per day (fig. 2).

Periodic recharge activities continue at the recharge facility; the vertical movement of recharge water through the unsaturated zone is currently being monitored at JTUZ-4 (fig. 3).

Water-quality samples were collected periodically from the suction-cup lysimeters and well at JTUZ-4 to monitor the movement of nitrate in the unsaturated-zone and the effect of recharge on the shallow saturated zone. Nitrate concentrations in samples from JTUZ-4 peaked at about 43 milligrams per liter as nitrogen (mg/L as N) in the May 2015 sample (fig. 4). Nitrate

concentrations appear to be related to nitrate mobilized from the unsaturated zone beneath the recharge facility.

Summary of Previous Work (2016):

In Calendar Year 2016 the study consisted of three primary tasks:

1) Data collection at existing unsaturated-zone monitoring sites at the recharge facility (JTUZ-3 and -4);
2) Continuation of the basin-wide water-quality monitoring program (consisting of one sample collection event from monitoring wells JTUZ-1 and -4 and JBWD-14); and
3) Using the existing Joshua Tree and Copper Mountain subbasins groundwater-flow model to calculate inflows and outflows from the subbasins within the model using ZoneBudget (note that this task will be undertaken in 2017).

Based on available data, an increase in nitrate concentrations has been not observed in the nearest production well to the recharge facility (JBWD-14, nitrate as nitrogen = 2.50 mg/L on August 8, 2016 per JBWD). However, total coliform was reportedly detected in samples collected from JBWD-14 on June 23, 2016.

Major-ion data indicate that recharge water had not reached production well JBWD-14 on or prior to August 18, 2016 (fig. 5); stable isotope data indicated that recharge water had reached production well JBWD-14 by October 16, 2016 (fig.6).

Approach:

The study consists of five primary tasks: 1) data collection at existing unsaturated-zone monitoring sites (JTUZ-1, -3, and -4); 2) continuation of the basin-wide water-quality monitoring program; 3) assess the vertical contribution of wellbore flow and nitrate to JBWD production well 10; 4) assess the vertical distribution of septage/nitrate in the unsaturated zone in the vicinity of the residential development west of the recharge facility; and 5) assess and refine the understanding of the structural boundaries (faults) of the western portion of the Joshua Tree subbasin (Yucca Barrier) their potential effects on groundwater flow.

Task 1. ***Data Collection at Unsaturated-Zone Monitoring Sites JTUZ-1, -3, and -4***

Instrumentation at JTUZ-3 and -4, located at the recharge facility, will be maintained to monitor the movement of the wetting front through the unsaturated zone and to monitor water levels in the monitoring well at JTUZ-4.

Instrumentation at JTUZ-1, located along Desert Air Road, will be reactivated to assess conditions in the unsaturated zone related to septage and to monitor water levels in the monitoring well at JTUZ-1.

Unsaturated-zone data will be recorded at 4-hour intervals; water-level data will be recorded hourly. The sites will be visited on a bi-monthly (every two months) basis to download data and change batteries. A submersible pressure transducer will monitor water levels in the recharge ponds.

Unsaturated-zone water-quality samples will be collected bi-annually (approximately every 6 months) from the suction-cup lysimeters at JTUZ-1, -2, -3, and -4 to assess water-chemistry changes in the unsaturated zone. These samples will be analyzed for total dissolved solids (TDS), nitrate, nitrite, bromide, chloride, sulfate, fluoride, orthophosphate, and the stable isotopes of oxygen and hydrogen. These samples will be analyzed at the USGS San Diego geochemistry laboratory by ion chromatography plasma mass spectrometry and the Reston Stable Isotope Laboratory. Field parameter data and samples will be collected and archived following procedures described in the USGS National Field Manual (USGS, variously dated). A proposed sampling timeline is presented in Figure 7.

Task 2. *Continuation of the basin-wide water-quality monitoring program*
Currently production well water-quality samples for the basin-wide water-quality monitoring program are collected and analyzed by JBWD and JBWD contracted laboratories; monitoring well water-quality samples are collected and analyzed by the USGS (Table 1).

Water-quality samples for the basin-wide water-quality monitoring program will be collected once in FFY17 to evaluate any changes to water quality. Based on conversations with JBWD staff, it is our understanding that JBWD will continue to manage the sampling and analysis of JBWD production wells 10, 14, 15, 16, and 17 in FFY17. The USGS will collect one set of samples from monitoring wells JTUZ-1, JTUZ-4, and JTUZ-5 (discussed in Task 4) and from the ponds at the recharge facility in conjunction with JBWD's production well sampling. In addition, the USGS will also collect one replicate sample from a JBWD production well to provide be quality-assurance/quality-control (QA/QC) for JBWD's sampling. The samples will be analyzed for major and minor ions, selected trace elements, and nutrients (including nitrate) at the USGS National Water Quality Laboratory, and the stable isotopes of oxygen and hydrogen at the USGS Reston Stable Isotope Laboratory. Samples collected by JBWD will be analyzed for a similar set of constituents by laboratories contracted by JBWD.

One additional sample will be collected from the monitoring well at JTUZ-4 to monitor changes in groundwater chemistry related to recharge activities (total of 2 sampling events at JTUZ-4). This sample will be analyzed as described above.

Based on conversations with JBWD staff, it is our understanding that additional samples will be collected from JBWD production wells 10 and 14 on an approximately quarterly basis to monitor effects of recharge activities on groundwater in the vicinity of the recharge facility. These samples will be analyzed for nutrients (including nitrate) and the stable isotopes of oxygen and hydrogen. A sampling timeline is presented in Figure 7.

Task 3. *Flow logging and depth-dependent sampling of JBWD-10*
Chemical concentrations in water samples collected from the surface discharge of production wells are representative of the mixture of water that enters the entire length of the well's

producing screen from different depths. For example, the discharge from JBWD well 10 has a nitrate concentration of about 5 milligrams per liter (mg/L) and a chromium concentration of about 11 micrograms per liter (µg/L) (Table 1), in excess of their respective MCL's. The concentration of these constituents in the discharge of well 10 is a function of the water contributed over the entire length of the well screen and may vary with depth in the aquifer. Depth-dependent samples when coupled with velocity-log data can be used to estimate the quality and quantity of water entering a well from selected depths in an aquifer. Similar assessments have previously been performed at wells JBWD-14, -15, and -16. Additional information on flow logging and depth dependent sampling can be found at http://pubs.usgs.gov/fs/2004/3096/.

Flow logs will be collected under unpumped and pumped conditions and water-quality samples will be collected under pumped conditions. Well-bore flow logs and water-chemistry data will be evaluated to understand flow and redistribution of chemical constituents through the well under unpumped and pumped conditions.

Task 4. ***Assess the vertical distribution of septage/nitrate in the unsaturated zone west of the recharge facility***

Existing unsaturated-zone data collected from JTUZ-4 at the recharge facility indicate that nitrate concentrations in the unsaturated zone below about 300 ft are relatively low (<1 mg/kg; fig. 8). However, a high-density residential development (Quail Springs Apartments) is located adjacent to the recharge facility and the vertical extent of nitrate (and associated septage) in the unsaturated zone related to the development is unknown. Rising water levels related to the recharge facility have the potential to entrain nitrate stored in the unsaturated zone thereby affecting the groundwater quality.

An unsaturated-zone monitoring site (JTUZ-5) will be installed west of the recharge facility, situated adjacent to the septic seepage pits at Quail Springs to help characterize the hydraulic and chemical properties of the unsaturated zone beneath a high-density residential seepage-pit installation. The site will include a water-table well to sample the shallow aquifer system. Please note that costs associated with water-quality sampling of the proposed well are not included in this proposal.

JTUZ-5 will be drilled to the top of the saturated-zone (estimated to be at 420 ft below land surface) using the ODEX method, which uses air as the drilling fluid. ODEX drilling is used so that the water content and matric potential of the cutting materials collected from the unsaturated-zone are minimally altered during drilling (because air and not water is not used as a drilling fluid). A suite of geophysical logs (natural gamma, neutron, and electromagnetic-resistivity) will be collected in the borehole after drilling. Drill cuttings will be collected every foot to define the lithology and stratigraphy at the site. Water extracts from selected cuttings will be analyzed for chloride and nitrate concentrations at the USGS Water Quality Laboratory in San

Diego, California and for the stable isotopes of nitrogen and oxygen (of nitrate) at the USGS Stable Isotope Laboratory in Reston Virginia.

JTUZ-5 will be instrumented with a water-table piezometer, up to five suction-cup lysimeters, and three advanced tensiometers; the specific number and placement of instruments will be determined based on observations made during and after drilling. A pressure transducer will be installed in the piezometer to measure water levels in the saturated zone. Data collected from JTUZ-5 will include soil-moisture and water-chemistry data that will be used estimate the vertical distribution of nitrate and to monitor the movement and the chemical transformations of the seepage-pit effluent in the unsaturated-zone.

Task 5. Assessment of Yucca Barrier

Regionally, groundwater flow in the Joshua Tree subbasin is from west to east, flowing from the western boundary of the subbasin (the Yucca Barrier). Faults within the subbasin tend to act as barriers to groundwater flow; most faults have been identified on the basis of differences in water levels between wells; however, due to the lack of wells/monitoring points in the western end of the subbasin, the precise location and depth of the Yucca Barrier as well as detailed information regarding groundwater barriers (faults) and groundwater-flow direction and magnitude are lacking. Similarly, the degree to which the western end of the subbasin may be compartmentalized due to faulting is not well understood. Geophysical surveys will be conducted in the vicinity of the Yucca Barrier to investigate the location of potential barriers to groundwater flow. Existing geophysical data previously collected in the area will be reviewed; available data indicates that seismic and resistivity geophysical surveys may yield the best results; however methodologies and scope of work may change based on the results the data review.

SUMMARY

The total cost of the proposed work is $XXX,XXX. For studies done with local agencies, the U.S. Geological Survey may have funding to share costs for certain expenses such as labor and travel, subject to availability of these funds through congressional appropriations (Cooperative Matching Funds [CMF]),. Costs associated with each task are presented in the following table:

Tasks		JBWD	USGS (CMF)	TOTAL
Task 1	Data collection at UZ sites	$34,800	$1,900	$36,700
Task 2	Basin-wide sampling	$38,900	$2,100	$41,000
Task 3	Flow log JBWD-10	$43,900	$3,100	$47,000
Task 4	Drill and construct JTUZ-5	$196,800	$7,500	$204,300
Task 5	Yucca Barrier assessment	$43,500	$3,800	$47,300
Total		$357,900	$18,400	$376,300

Enclosed, you will find four copies of Joint Funding Agreement (JFA) 16WSCXXXXXX for the period XXXXX to XXXXXX. Work performed with funds from the JFA will be conducted on a fixed-price basis. If the JFA is acceptable, please return three copies with original signatures to our office for further processing. The fourth copy of each JFA is for your files. After signature by the USGS, a fully executed original of the JFA will be forwarded to HDWD for your records. The USGS is required to have agreements in place prior to any work being performed on a project.

If you have any questions concerning this program, please contact David O'Leary, in our San Diego Project Office at (619) 225-6157. If your have any administrative questions, please contact Irene Rios, in our San Diego Office, at (619) 225-6156.

Enclosures
cc: David O'Leary, USGS
Tracy Nishikawa, USGS

Sincerely,

Eric G. Reichard
Director
USGS California Water Science Center

Figures and Tables

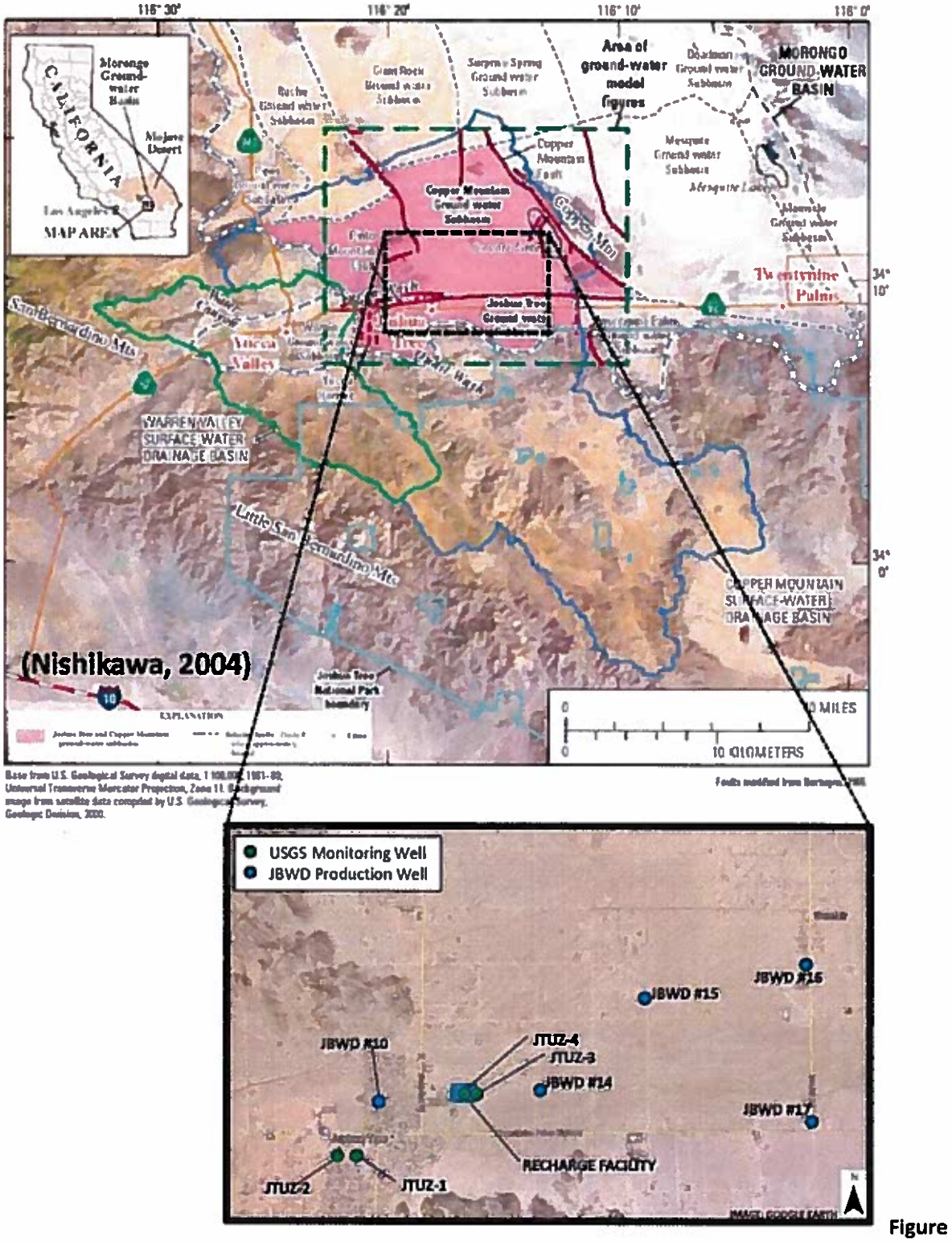

Figure 1. Location Map

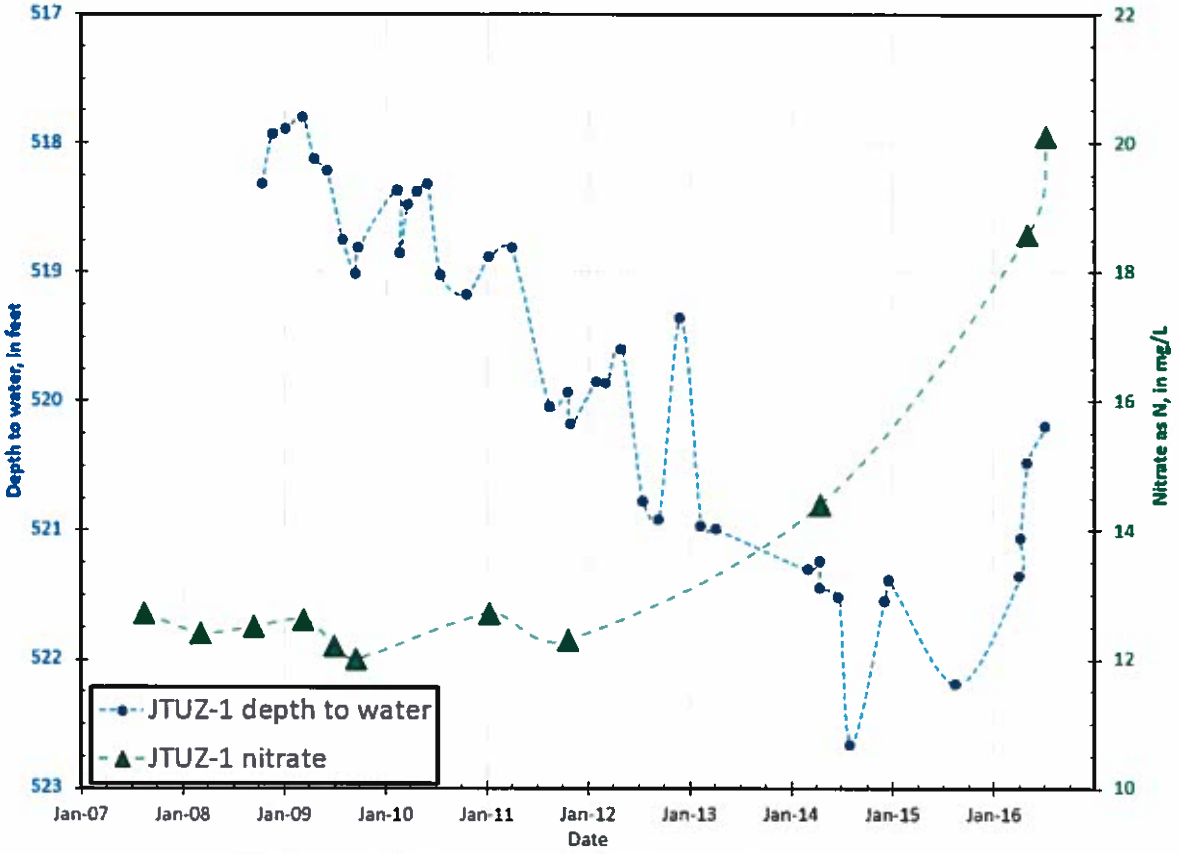

Figure 2. Water levels and nitrate concentrations in monitoring well JTUZ-1.

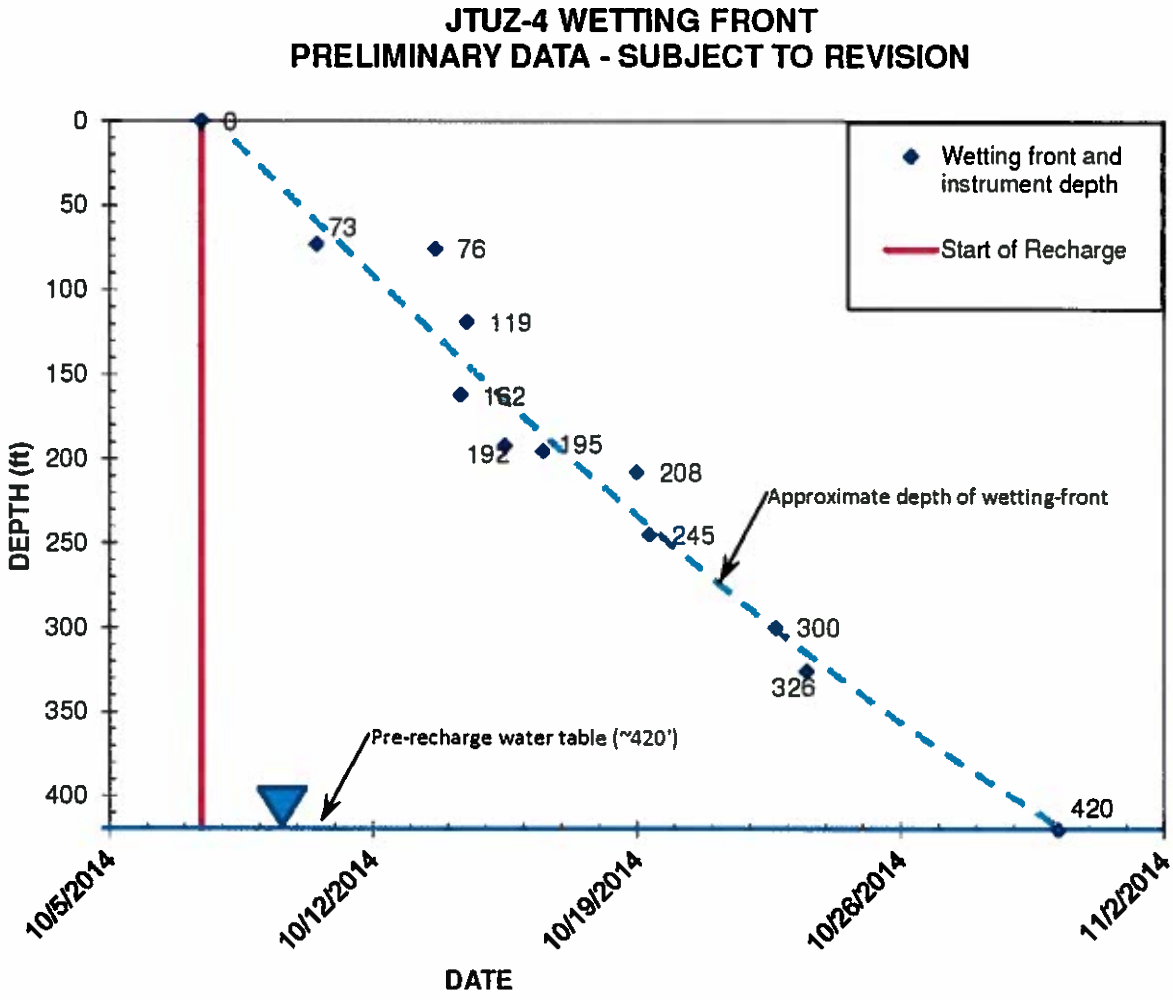

Figure 3. Movement of wetting front at recharge facility

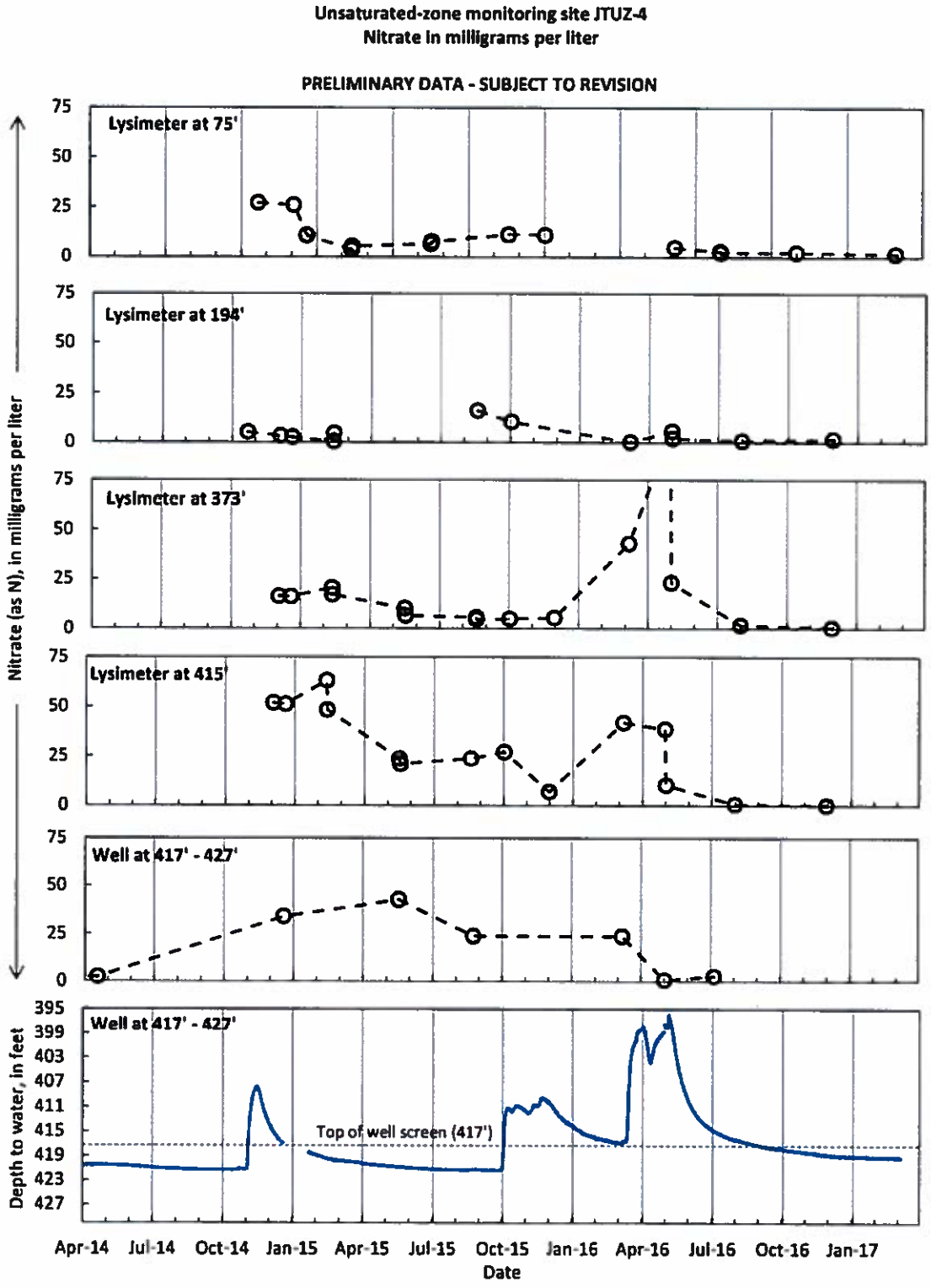

Figure 4. Nitrate concentrations (as N) and water levels at monitoring site JTUZ-4

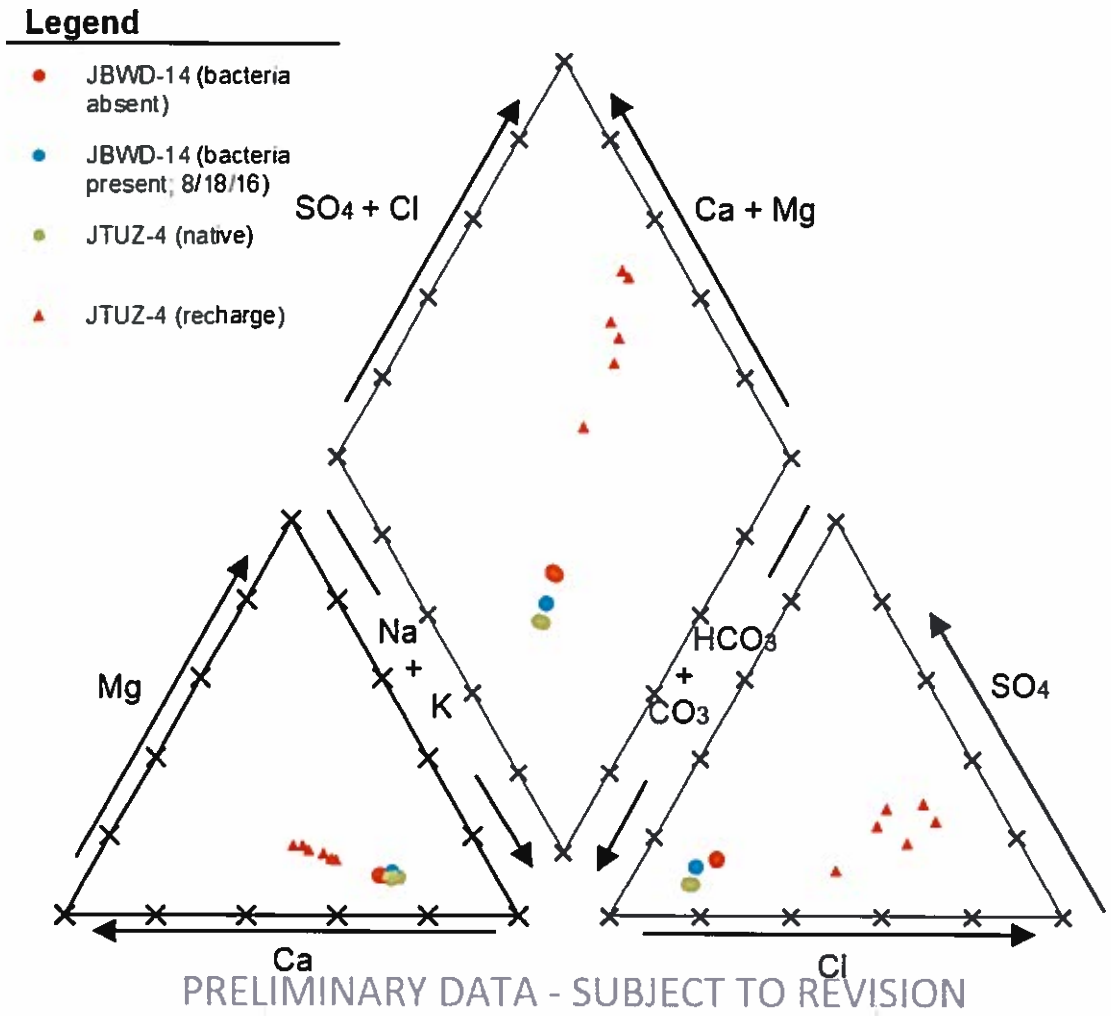

Figure 5. Major ion data.

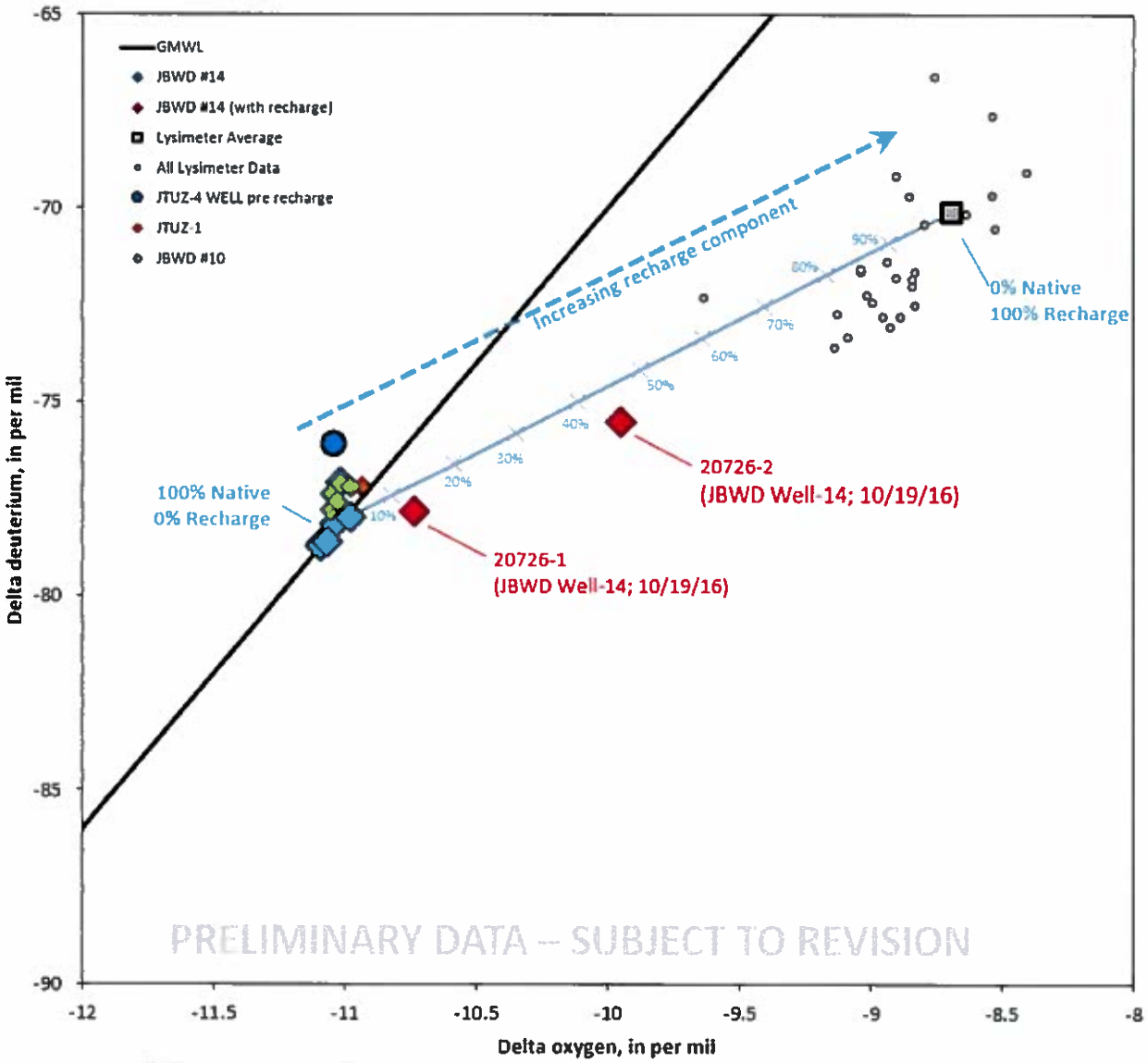

Figure 6. Stable isotope data.

Sample Location	Spring	Summer	Fall	Winter
Lysimeter Sampling (USGS)	X		X	
JTUZ-1 well sampling (USGS)	X			
JTUZ-4 well sampling (USGS)	X		X	
JTUZ-5 well sampling (USGS)			X	
Production Well Sampling (JBWD)			X	
Production wells 10/14 sampling (JBWD)	X	X	X	X

Figure 7. Proposed timeline.

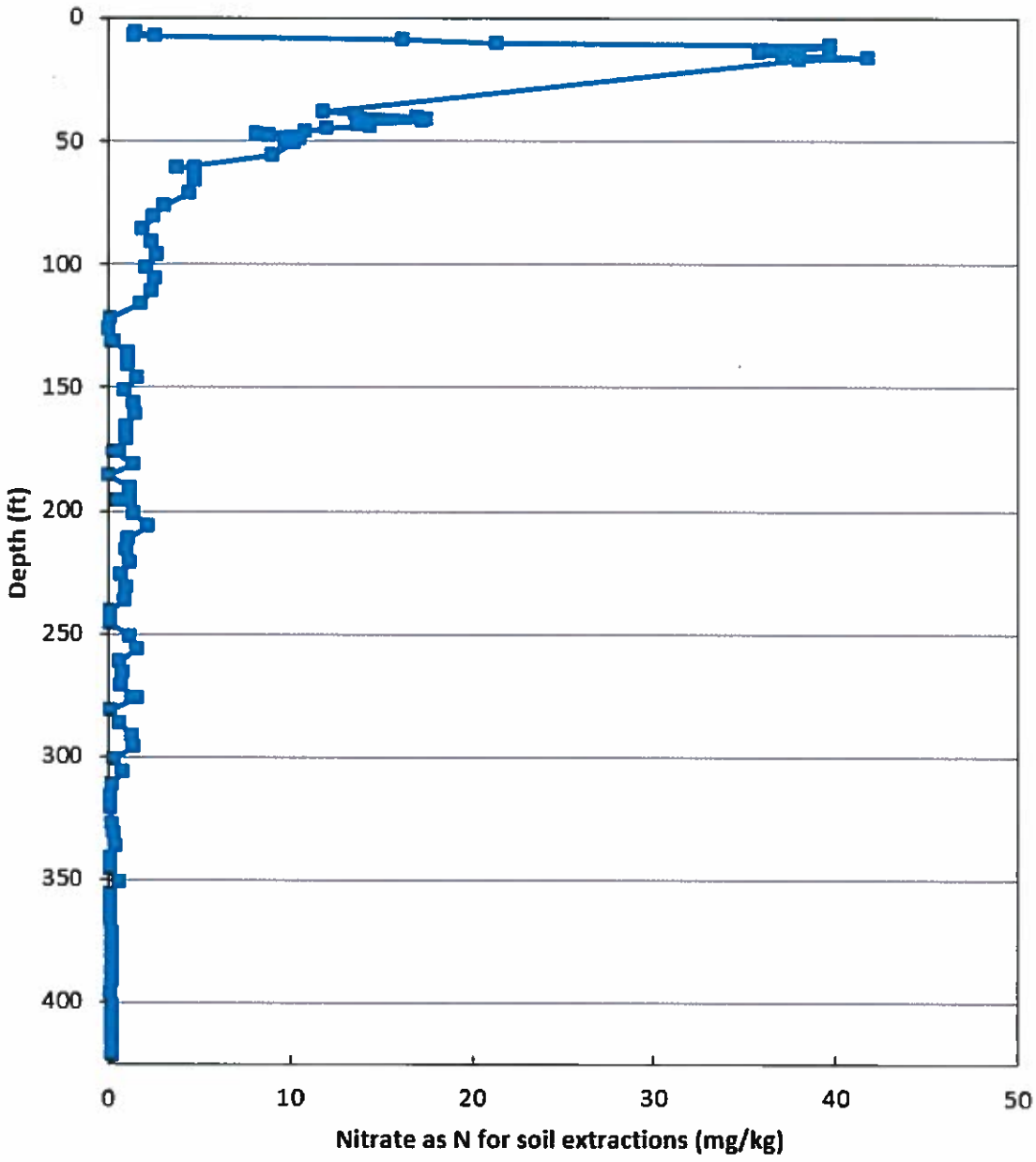

Figure 8. Nitrate concentrations in soil extractions from JTUZ-4.

Table 1. Selected water-quality data for monitoring well JTUZ-4 and JBWD production wells -10 and -14.

[Notes: microsiemens per centimeter = µS/cm; milligrams per liter as nitrogen = mg/L as N; micrograms per liter = µg/L]

Site Name	Date	pH	Specific conductance (µS/cm)	Dissolved solids (mg/L)	Alkalinity (mg/L)	Nitrate (mg/L as N)	Nitrite (mg/L as N)	Chromium (µg/L)	Arsenic (µg/L)	Deuterium/ Protium ratio (per mil)	delta Oxygen-18 (per mil)	Site ID
JTUZ-4	20110113	8	248	161	87	2.42	<0.001		1.6	-77.5	-11	340824116180701
	1/13/2011	8.2	245	157	87.9	2.41	<0.001	14.2	1.4	-76.1	-11.04	
	4/18/2014	7.8	1010	618	58.6	34.1	0.001	3.1	0.53			
	12/19/2014	7.8	1010		58.6	32	<0.05					
	12/19/2014	7.8	826	541	61.3	42.8	<0.001	10.5	0.54	-72.8	9.58	
	5/19/2015					38	<0.05					
	5/19/2015	7.8	551	352	69.9	23.9	<0.001	12.8	0.63	-74.7	-10.36	
	8/25/2015					22	<0.05					
	8/25/2015	7.7	1010	529				2.9	0.59			
	3/8/2016	7.9	578	325	78.1	0.776	<0.001	0.87	0.67	-67	-8.82	
	5/2/2016	7.8	644	387	74.8	2.79	<0.001	2.2	0.61			
JBWD-10	7/7/2016	7.8	255	160	81	2.7	<0.010		<1	-77.7	-11.04	340821116185801
	9/11/1996	8	281					10.9	1.1			
	5/15/2001	8	281					10	1			
	5/15/2001			E196		4.78	<0.006	11.1	1.1	-77.5	-10.99	
	9/25/2001	8.8	383	E230	85	9.99	<0.008	12.8	0.86	-75.8	-10.93	
	9/26/2005	8.5	264	E166	88	2.57	<0.008	10.7	1.2	-75.8	-11.03	
	9/26/2005	8.2	263	E163	87	2.53	<0.008	10.9	1.3	-75.7	-11.04	
	9/26/2005	8.2	264	163	86	2.52	<0.008	11.3	1.4	-75.6	-11.08	
	9/26/2005	7.8	301	E187	86	4.68	<0.008	11	1.2	-76.4	-11.03	
	9/26/2005	8	305	193	90.6	5.02	<0.001	10.6	1.2	-77.4	-11.06	
	4/17/2014	8	305					12.2				
	4/17/2014									-77.1	-11.02	
	3/2/2015									-77.2	-10.98	
	4/6/2015									-77.8	-11.06	
	5/4/2015	8	292	191	92.4	4.85	<0.001	10.5	1.2	-77.6	-11.03	
	5/19/2015					4.5	<0.05					
	5/19/2015	8	329	202	96.2	5.27	<0.001	11.1	1.2	-78	-10.98	
JBWD-14	5/3/2016	8	315			2.51	<0.010			-78.5	-11.03	340831116172201
	8/24/1999	8.1	316					17.6	0.9			
	5/15/2001	8.1	316					20	0.8			
	5/15/2001											
	10/5/2009	8.1	312	E200		2.62	<0.002	17.2	1.1	-77.8	-11.04	
	10/5/2009	8.1	318	198	98.8	2.65	<0.001	16.1	0.96	-77.1	-11.02	
	4/16/2014	8.1	318					18.2				
	4/16/2014									-78.6	-11.09	
	3/2/2015									-78.7	-11.1	
	4/6/2015									-78.2	-11.04	
	5/4/2015	8.1	313	199	101	2.56	<0.001	16.6	0.98	-78.6	-11.07	
	5/19/2015	7.5	290	190	110	2.5						

JOSHUA BASIN WATER DISTRICT
STAFF REPORT

Meeting: Board of Directors April 26, 2017

Report to: Water Resources and Operations Committee

Prepared by: Curt Sauer

TOPIC: Water Line Replacement

RECOMMENDATION: Receive and approve for presentation to the Board.

ANALYSIS: In 2016, we completed a Capital Improvement Plan.

The estimated costs in the CIP, over the next 20 years, indicates a cost of about $2 million per year, or $40 million over 20 years. This reflects just the costs to upsize undersized 4 and 6 inch pipelines to 8-inch.

Another $500,000 is needed annually for repair, replacement of water facilities, such as reservoirs, booster pumps and wells.

A similar situation exists for meter replacement. All 4500 meters need to be replaced in the near future, as they are at least 3 years beyond useful life, being replaced 18 years ago. Estimated replacement costs for these meters is $2 million.

We also have a rate study in process. I am bringing this information to the Board, and the public, so that we all clearly understand that current rates were established with no planning for pipeline and meter replacement on this scale.

As mentioned previously, we have been looking for grant monies for pipeline replacement. To date, all we have found are grants, which require matching funds. One of the questions the Board will need to address, prior to submitting grant fund requests, is whether the Board is willing to utilize monies from existing funds to match pipeline replacement grants. An alternative is to wait and address these costs through the Rate Study.

Either way, using reserves or using water rates, we have to make a decision for the rate study.

The first priority CIP pipeline project 2.3.1, named the Tilford Way Pipeline Project, is located between Celesta and Koehler, and Star Lane and Tilford Way. MAP

Project Description:

The Tilford Way Pipeline Project will replace 1.68 miles or 8,900 linear feet of 6-inch steel pipelines from the 1970's and 1980's. This project will include the installation of 43 valves, and 30 hydrants.

The Tilford Way Pipeline Project is a Tier 1 priority project based on its score pursuant to the Capital Improvement Pipeline Replacement Evaluation Process. The Project will eliminate 50 percent of this Section's undersized pipe, improve fire suppression by 23 percent, and replace all inoperable valves within the project area. This project will minimize water loss as a result of leaks on pipelines where there is the inability to isolate or throttle down sections of pipelines during leaks.