CITY OF SAN BERNARDINO MUNICIPAL WATER DEPARTMENT

AGENDA
REGULAR MEETING
BOARD OF WATER COMMISSIONERS
Tuesday, JULY 19, 2016 – 9:30 a.m.
MARGARET H. CHANDLER WATER RECLAMATION PLANT
399 CHANDLER PLACE
San Bernardino, California

BOARD OF WATER COMMISSIONERS

TONI CALLICOTT
President

Commissioners
LOUIS A. FERNANDEZ
WAYNE HENDRIX, P.E.
JUDITH VALLES
DAVID E. MLYNARSKI

STACEY R. ALDSTADT
General Manager
ROBIN L. OHAMA
Deputy General Manager
MIGUEL GUERRERO, P.E.
Director of Water Utility
JOHN A. CLAUS
Director of Water Reclamation
TERRI WILLOUGHBY
Director of Finance
JENNIFER L. SHEPARDSON
Director of Environmental & Regulatory Compliance

"Trusted, Quality Service since 1905"

Welcome to a meeting of the Board of Water Commissioners of the City of San Bernardino.

- The City of San Bernardino Municipal Water Department recognizes its obligation to provide equal access to those individuals with disabilities. Please contact the General Manager's Office (909-384-5191) two working days prior to the meeting for any requests for reasonable accommodation, to include interpreters.
- All documents for public review are on file with the Water Department located on the 5th floor of City Hall, 300 North "D" Street, San Bernardino or may be accessed online at http://www.ci.san-bernardino.ca.us/water/newsalerts/agendas_n_minutes.asp
- Please turn off or mute your cell phone while the meeting is in session.
- Any member of the public desiring to speak to the Board of Water Commissioners concerning any matter not on the agenda, but which is within the subject matter jurisdiction of the Board of Water Commissioners, may address the body at the end of the meeting during the period reserved for public comments. Said total period for public comments shall not exceed forty-five (45) minutes, unless such time limit is extended by the Board of Water Commissioners. A three-minute limitation shall apply to each member of the public, unless such time limit is extended by the Board of Water Commissioners. No member of the public shall be permitted to "share" his/her three minutes with any other member of the public.
- The Board of Water Commissioners may refer any item raised by the public to staff for appropriate action or have the item placed on the next agenda of the Board of Water Commissioners. However, no other action shall be taken nor discussion held by the Board of Water Commissioners on any item which does not appear on the agenda unless the action is otherwise authorized in accordance with the provisions of subdivision (b) of Section 54954.2 of the Government Code.
- Public comments will not be received on any item on the agenda when a public hearing has been conducted and closed.

CALL TO ORDER: _____a.m./p.m.

Attendee Name	Present	Absent	Late	Arrived
President Toni Callicott				
Commissioner Louis Fernández				
Commissioner Wayne Hendrix				
Commissioner Judith Valles				
Commissioner David E. Mlynarski				
General Manager Stacey Aldstadt				
Deputy General Manager Robin Ohama				
Director of WRP John Claus				
Director of WU Miguel Guerrero				
Director of Finance Terri Willoughby				
Director of ERC Jennifer Shepardson				

OTHERS:

1. CLOSED SESSION: _____ a.m./p.m.

Pursuant to Government Code Section(s):

A. Conference with legal counsel – existing litigation – pursuant to paragraph (1) of subdivision (d) of Government Code Section 54956.9: *In Re City of San Bernardino, California,* United States Bankruptcy Court, Central District of California (Riverside), Case No. 6: 12-bk-28006-MJ. *City of San Bernardino v. San Bernardino Valley Municipal Water District, et al.*, San Bernardino County Superior Court Case No. CIVDS1605532. *City of San Bernardino v. East Valley Water District*, San Bernardino Superior Court Case No. CIVDS 1608620.

B. Conference with legal counsel – anticipated litigation – significant exposure to litigation pursuant to paragraph (2) or (3) of subdivision (d) of Government Code Section 54956.9 (one claim).

C. Conference with legal counsel – anticipated litigation – initiation of litigation – pursuant to paragraph (4) of subdivision (d) of Government Code Section 54956.9.

D. Public Employment pursuant to Government Code Section 54957.

E. Consultation with legal counsel and security consultant on matters posing a threat to the security of essential public services, including water, drinking water, and wastewater treatment pursuant to Government Code Section 54957.

F. Conference with labor negotiator – pursuant to Government Code Section 54957.6.

END OF CLOSED SESSION
RECONVENE MEETING

CALL TO ORDER: _____a.m./p.m.

Attendee Name	Present	Absent	Late	Arrived
President Toni Callicott				
Commissioner Louis Fernández				
Commissioner Wayne Hendrix				
Commissioner Judith Valles				
Commissioner David E. Mlynarski				
General Manager Stacey Aldstadt				
Deputy General Manager Robin Ohama				
Director of WRP John Claus				
Director of WU Miguel Guerrero				
Director of Finance Terri Willoughby				
Director of ERC Jennifer Shepardson				

OTHERS:

2. ANNOUNCEMENTS BY MEMBERS OF THE BOARD OF WATER COMMISSIONERS:

3. CONSENT CALENDAR

MOTION: That the motions indicated by consent calendar items 3A through 3D be adopted, except for _____.

MOTION:_____ SECONDED:_____

A. WAIVE FULL READING OF RESOLUTIONS

MOTION: That full reading of the resolutions on the regular or supplemental agendas of the Board of Water Commissioners be waived.

B. PAYROLL

MOTION: Approve the payroll for the pay period June 13, 2016 through June 26, 2016.

C. CONTRACTS AND BILLS

MOTION: Approve the payment of contracts and bills to be presented at this meeting.

D. MINUTES

MOTION: Approve the minutes of the meetings of July 5, 2016 of the Board of Water Commissioners.

END OF CONSENT CALENDAR

4. ADDITIONS TO THE AGENDA: (if any) in accordance with Section 54954.2 (b) (2) of the Government Code (Brown Act), a two-thirds vote (or a unanimous vote if less than two-thirds are present) is required to add an item for action provided that there is a need to take immediate action and that the need for action came to the attention of the agency after the agenda was posted.

MOTION: Approve an additional item(s) to be added to the agenda in accordance with Government Code Section 54954.2(b) (2).

MOTION:_____ SECONDED:_____

5. REQUEST TO TRANSFER FUNDS FROM ANNUAL WELL REPAIR AND REHABILITATION PROJECT (CO 10788) TO KENWOOD WELL FIELD TRANSMISSION MAIN PROJECT (CO 10677): The Kenwood Well Field Transmission Main Project is budgeted at $175,000.00 in the Fiscal Year 2016/17 Capital Improvement Budget. Competitive bids for the project were received on July 1, 2016 with the apparent low bid submitted in the amount of $185,512.00. In order to fund project construction, staff is requesting approval to transfer $30,000.00 from the Annual Well Repair and Rehabilitation Project (CO 10788) to the Kenwood Field Transmission Main Project (CO 10677). There are available funds for the proposed transfer.

MOTION: Approve the capital budget transfer in the amount of $30,000.00 from the 2016/17 Capital Improvement Project titled *Annual Well Repair and Rehabilitation Project (CO 10788)* to the capital project titled *Kenwood Well Field Transmission Main Project (CO 10677).*

MOTION:_____ SECONDED:_____

6. REQUEST TO TRANSFER FUNDS FROM ANNUAL WELL REPAIR AND REHABILITATION PROJECT (CO 10788) TO BELLEVIEW AND VINE STREETS ALLEY MAIN REPLACEMENT PROJECT (CO 10636: The Belleview and Vine Streets Main Replacement Project is budgeted at $1,000,000.00 in the Fiscal Year 2016/17 Capital Improvement Budget. Competitive bids for the project were received on June 30, 2016 with the apparent low bid submitted in the amount of $1,103,231.00. In order to fund project construction, staff is requesting approval to transfer $200,000.00 from the Annual Well Repair and Rehabilitation Project (CO 10788) to the Belleview and Vine Streets Alley Main Replacement Project (CO 10636). There are available funds for the proposed transfer.

MOTION: Approve the capital budget transfer in the amount of $200,000.00 from the 2016/17 Capital Improvement Project titled *Annual Well Repair and Rehabilitation Project (CO 10788)* to the capital project titled *Belleview and Vine Streets Alley Main Replacement Project (CO 10636).*

MOTION:_____ SECONDED:_____

7. RULE AND REGULATION NO. 21, WATER SUPPLY SHORTAGE CONDITIONS – STAGE IIA AMENDMENT: In May 2015, the State Water Resources Control Board (SWRCB) adopted an emergency drought regulation requiring twenty-five percent (25%) reduction in potable water use across the state. SWRCB's emergency regulation outlined percentage reduction tiers (conservation standards) in gross water production for each urban water supplier to achieve the 25% reduction. The Department's standard is currently set at fifteen percent (15%). The latest amendment of the emergency regulation allowed water suppliers to self-certify their own conservation standard based on supply and demand from previous years, and it also extended the emergency regulation through February 2017.

In May 2015, the Board of Water Commissioners (Board) adopted a resolution to amend Department Rule and Regulation No. 21 to include Stage IIA extreme mandatory restrictions, and at the same time, the Board implemented Stage IIA restrictions, which requires a twenty-eight percent (28%) reduction in potable water use by all Department customers.

The Department remains under Stage IIA, as the extreme drought condition continues and the SWRCB drought emergency regulation remains in effect. As stated in Rule and Regulation No. 21, the Department shall maintain the amended Stage IIA water supply shortage condition until such time the General Manager determines that drought conditions have improved to a point where Stage II or Stage I can be re-implemented.

MOTION: Approve amendment of City of San Bernardino Municipal Water Department Rule and Regulation No. 21, Water Supply Shortage Conditions – Stage IIA to become effective August 1, 2016.

MOTION:_____ SECONDED:_____

8. APPROVAL OF EPA 006 WELL REHABILITATON BY WEBER WATER RESOURCES: Extraction well EPA 006 is operated as part of the Newmark Operable Unit (OU) Remedial Action under the terms negotiated with the United States Environmental Protection Agency (USEPA). The purpose of EPA 006 is to inhibit further migration of PCE and TCE in the aquifer. Proper and consistent operation of EPA 006 is critical in maintaining plume capture and therefore downtime should be minimized.

In April 2016, EPA 006 well equipment failed and was removed for diagnosis. The Department contracted Best Pump and Drilling, Inc. (Best) to pull EPA 006 well equipment, assess the equipment and well, and provide recommendations for rehabilitation of the well. The mechanical failure was due to a failed thrust bearing and worn pump impellers. Staff recently requested rehabilitation proposals from prequalified contractors to rehabilitate EPA 006. Weber Water Resources was responsive and provided the lowest quotation in the amount of $42,986.62.

Staff is recommending that this expenditure be approved from existing funds in the Fiscal Year 2016/17 Capital Budget under *Annual R/R – EPA Extraction Well (Newmark)* with available funding of approximately $285,000.00. Rehabilitation of EPA 006 is one hundred percent (100%) reimbursable through the AIG commutation account.

MOTION: Approve the rehabilitation of EPA 006 by Weber Water Resources in the amount of $42,986.62.

MOTION: _____ SECONDED: _____

9. APPROVAL OF EPA 111 WELL REHABILITATION BY BEST PUMP AND DRILLING, INC.: Extraction well EPA 111 is operated as part of the Muscoy Operable Unit (OU) Remedial Action under the terms negotiated with the United States Environmental Protection Agency (USEPA). The purpose of EPA 111 is to inhibit further migration of PCE and TCE in the shallow aquifer. Proper and consistent operation of EPA 111 is critical in maintaining plume capture and therefore downtime should be minimized.

In March 2016, while in the process of evaluating rehabilitation measures to increase efficiency, the pump in EPA 111 failed. Inspection of the pump and well revealed that most of the screen louvers were partially to near totally blocked as a result of chemical and biological conditions that caused buildup of scaling and bio fouling along the well screening.

In April 2016, the Department contracted Best Pump and Drilling, Inc. (Best) to pull EPA 111 well equipment, assess the equipment and bio fouling issue, and provide recommendations for rehabilitation of the well. As part of this effort, Best subcontracted with Water Systems Engineering, Inc. (WSE) for assessment and recommendations on the scaling and bio fouling issue. Combined chemical and mechanical cleaning of EPA 111 is recommended. Staff recently requested rehabilitation proposals from prequalified contractors to execute WSE's recommendations for EPA 111. Best was responsive and provided the lowest quotation in the amount of $119,170.00.

Staff is recommending that this expenditure be approved from existing funds in the Fiscal Year 2016/17 Capital Budget under *Annual R/R – EPA Extraction Well (Muscoy)* with available funding of approximately $285,000.00. Rehabilitation of EPA 111 is one hundred percent (100%) reimbursable through the AIG commutation account.

MOTION: Approve the rehabilitation of EPA 111 by Best Pump and Drilling, Inc. in the amount of $119,170.00.

MOTION:_____ SECONDED:_____

10. PROPERTY INSURANCE RENEWAL FOR FISCAL YEAR 2016-17: On July 31, 2016, the City of San Bernardino Municipal Water Department will need to renew its property insurance coverage for fiscal year 2016/17, covering approximately $330,262,542.00 in Water and Sewer Fund real and personal property. The renewal carries an annual premium of $536,279.00, which is a decrease of approximately 7.6% from last year's premium.

Due to years of excellent customer service and experience working with the company, the Water Department continues to work with Marsh Risk & Insur ance Services (Marsh) to find the most appropriate insurance coverage for Department assets. Funds have been budgeted to cover the cost of the proposed property coverage renewal.

MOTION: Approve the annual property insurance renewal premium of $536,279.00; and authorize the General Manager to bind the renewal policies effective August 1, 2016.

MOTION:_____ SECONDED:_____

11. CLAIMS SETTLEMENTS – QUARTERLY REPORT: In accordance with Policy 20.090 – Claims Handling, the Environmental and Regulatory Compliance Division has prepared the quarterly claims settlements report detailing all claims processed for the period of APRIL through JUNE 2016. **(INFORMATION ITEM ONLY)**

12. JUNE 2016 DROUGHT MONITORING REPORT: This report continues to monitor and track the effects of the ongoing drought by monitoring groundwater levels in select wells located in the Department's service area. This monthly report will provide valuable data needed to contemplate important policy decisions related to Water Supply Shortage Stages outlined in Rule and Regulation No. 21. **(INFORMATION ONLY)**

13. REPORTS:

A. Report of the President:

B. Report of the Commissioners:

C. Report of the Directors:

D. Report of the General Manager:

14. PUBLIC COMMENTS ON ITEMS NOT ON THE AGENDA:

15. ADJOURNMENT: The meeting adjourned at _____ a.m./p.m.

NOTE: The next regular meeting of the Board of Water Commissioners is scheduled for *9:30 a.m., August 2, 2016* in the Margaret H. Chandler Water Reclamation Plant Conference Room, 399 Chandler Place, San Bernardino, California, 92408.

MINUTES
BOARD OF WATER COMMISSIONERS OF THE CITY OF SAN BERNARDINO

REGULAR MEETING
July 5, 2016
Water Reclamation Plant Conference Room
399 Chandler Place
San Bernardino, California
9:30 a.m.

The Regular Meeting of the Board of Water Commissioners of the City of San Bernardino was called to order by President Callicott at 9:30 a.m. on July 5, 2016 in the Water Reclamation Conference Room, 399 Chandler Place, San Bernardino, California.

ROLL CALL: Roll call was taken by the Secretary with the following being present: President Callicott; Commissioners Valles, Fernández, Hendrix, and Mlynarski; staff Aldstadt, Ohama, Claus, Shepardson, and Willoughby; Steven Graham, City Attorney's Office; Josh Valdez, Sr. Network Analyst; Amy Smith, Executive Secretary.

Absent: Director Guerrero

Members of the Public: James Morales, East Valley Water District
Jose Martinez, East Valley Water District

1. CLOSED SESSION: President Callicott adjourned the Regular Meeting of the Board of Water Commissioners to a Closed Session. At 9:44 a.m., the Regular Meeting of the Board of Water Commissioners was recessed and a Closed Session was called to order in accordance with the following Government Code Sections:

   A. Conference with legal counsel – existing litigation – pursuant to paragraph (1) of subdivision (d) of Government Code Section 54956.9: *In Re City of San Bernardino, California,* United States Bankruptcy Court, Central District of California (Riverside), Case No. 6: 12-bk-28006-MJ. *City of San Bernardino v. San Bernardino Valley Municipal Water District, et al.*, San Bernardino County Superior Court Case No. CIVDS1605532.

   No action was taken at this time.

   D. Public Employment pursuant to Government Code Section 54957. One item – Performance Evaluation of the General Manager.

   No action was taken at this time.

   ROLL CALL: Roll call was taken with the following present: President Callicott; Commissioners Valles, Fernández, Hendrix, and Mlynarski; staff Aldstadt, Ohama, Claus, Shepardson, and Willoughby; Steven Graham, City Attorney's Office; Amy Smith, Executive Secretary.

   Absent: Director Guerrero

ADJOURN CLOSED SESSION: At 10:44 a.m., the Closed Session of the Board of Water Commissioners adjourned to the Regular Meeting of the Board of Water Commissioners in the Water Department Board Room.

ROLL CALL: Roll call was taken by the Secretary with the following being present: President Callicott; Commissioners Valles, Fernández, Hendrix, and Mlynarski; staff Aldstadt, Ohama, Claus, Shepardson, and Willoughby; Steven Graham, City Attorney's Office; Amy Smith, Executive Secretary.

Members of the Public: James Morales, East Valley Water District

2. ANNOUNCEMENTS BY MEMBERS OF THE BOARD OF WATER COMMISSIONERS: None

3. CONSENT CALENDAR: Upon motion by Commissioner Valles, duly seconded by Commissioner Hendrix, it was voted to approve the following Consent Calendar, Agenda Items 3A through 3H:

A. WAIVE FULL READING OF RESOLUTIONS: Waive full reading of the resolutions on the regular or supplemental agendas of the Board of Water Commissioners.

B. PAYROLL

	Water Fund	Sewer Fund	Total
Claims: 271329-271868 Accounts Payable	$3,030,658.22	$499,054.54	$3,529,712.76
Gross Payroll 05/30/16-06/12/16	246,338.74	181,329.14	427,667.88
TOTALS	$3,276,996.96	$680,383.68	$3,957,380.64

Payroll for the pay period June 13, 2016 through June 26, 2016.

C. CONTRACTS AND BILLS: Contracts and bills presented at this meeting.

D. MINUTES: June 21, 2016.

E. PERSONNEL ACTIONS

1. PROMOTION: Richard Flores, Water Utility Worker II, Range 138, to the position of Water Utility Worker III, Range 142, ratify effective June 27, 2016. This position was in the budget and based on the needs and staffing for this section, the position was justifiable under the budget.

2. PROMOTION: Tyler Smith, Water/Water Reclamation Worker, Range 124, to the position of Water Reclamation Plant Mechanic I, Range 146, effective July 11, 2016. This position was in the budget and based on the needs and staffing for this section, the position was justifiable under the budget.

F. RESOLUTION NO. 890: A RESOLUTION OF THE BOARD OF WATER COMMISSIONERS OF THE CITY OF SAN BERNARDINO RECOGNIZING JOE CHAVEZ FOR TWENTY-EIGHT YEARS OF DEDICATED SERVICE TO THE CITY OF SAN BERNARDINO MUNICIPAL WATER DEPARTMENT.

G. RESOLUTION NO. 891: A RESOLUTION OF THE BOARD OF WATER COMMISSIONERS OF THE CITY OF SAN BERNARDINO RECOGNIZING STEVE SHIPLEY FOR TWENTY-SEVEN YEARS OF DEDICATED SERVICE TO THE CITY OF SAN BERNARDINO MUNICIPAL WATER DEPARTMENT.

H. RESOLUTION NO. 892: A RESOLUTION OF THE BOARD OF WATER COMMISSIONERS OF THE CITY OF SAN BERNARDINO RECOGNIZING SHAWN FOX FOR MORE THAN TWENTY YEARS OF DEDICATED SERVICE TO THE CITY OF SAN BERNARDINO MUNICIPAL WATER DEPARTMENT.

END OF CONSENT CALENDAR

4. ADDITIONS TO THE AGENDA: None.

5. CONSIDERATION OF COMPENSATION FOR GENERAL MANAGER: The Board of Water Commissioners considered compensation for the General Manager of the San Bernardino Municipal Water Department and took such action as it so determined.

The motion was amended by President Callicott to approve compensation for the General Manager and add the approval of the revised Pay Policy per the consultant's recommendations.

Upon motion by Commissioner Valles, duly seconded by Commissioner Fernández, with Commissioner Mlynarski opposing, it was voted 4-1 to approve the revised Pay Policy per the consultant's recommendations, change the maximum amount of Range 325 to $296,000 per annum; and approve the compensation for the General Manager to $262,650.00 per annum, effective July 1, 2016. Resolution No. 893 was approved to reflect the range change based on the amended motion.

6. MEMORANDUM OF UNDERSTANDING FOR THE DEVELOPMENT OF A GROUNDWATER SUSTAINABILITY COUNCIL FRAMEWORK AGREEMENT: Drought impacts became severe across many areas of the state as water stored in reservoirs was depleted and water levels in groundwater basins declined. As a result, the California Legislature enacted the Sustainable Groundwater Management Act of 2014 (SGMA) in September 2014. In an effort to build on the foundation of existing laws and regulations, contracts and judicial decrees, and the recent enactment of SGMA, water suppliers entering into the Memorandum of Understanding for the Development of a Groundwater Sustainability Council Framework Agreement (MOU) would collaboratively develop a cooperative structure for groundwater management in the Upper Santa Ana River Groundwater Basin. The goal was to ensure that these groundwater basins are managed in a manner that would be sustainable over the long-term.

It was the intent of the participating members to complete the development of a framework agreement that would enable the implementation of SGMA and promote long-term sustainability by December 31, 2016, and fully implement the provisions of the framework agreement by December 31, 2018.

Upon motion by Commissioner Valles, duly seconded by Commissioner Hendrix, it was unanimously voted to approve the *Memorandum of Understanding (MOU) for the Development of a Groundwater Sustainability Council Framework Agreement* with Upper Santa Ana River Groundwater Basin stakeholders. The President and Secretary were authorized to execute the MOU.

7. ESTABLISH A DATE AND TIME FOR A PUBLIC HEARING ON THE 2016 PUBLIC HEALTH GOALS IN COMPLIANCE WITH SECTION 116470 OF THE HEALTH AND SAFETY CODE: California Health and Safety Code, Section 116470 (2)(B) mandated the preparation of a report that was intended to inform the public concerning any drinking water Public Health Goals (PHG) exceedances that occur, and specified that a public hearing be held for the purpose of "accepting and responding" to public comment.

   Copies of our laboratory test results would be available to the public beginning July 1, 2016, at the Water Department's Customer Service Office, located at 300 N. "D" St., 5th Floor of City Hall, Monday through Friday, during normal business hours. The report indicated what PHGs were exceeded, what health risks were associated with the exceedances, and what was the cost of the best treatment technology available.

   Upon motion by Commissioner Hendrix, duly seconded by Commissioner Fernández, it was unanimously voted to establish the date of August 2, 2016, at 9:30 a.m. in the Water Department Board Room located at 399 Chandler Place, San Bernardino, California as the date, time, and location for a Public Hearing, to give concerned water consumers an opportunity to discuss PHG exceedances, possible health effects caused by these exceedances, and the cost of the best available technology required to meet specific PHG exceedances.

8. REQUEST TO EXTEND RIX ADMINISTRATION AGREEMENT: On September 29, 1997, the RIX Joint Powers Authority entered into a two-year Administration Agreement, determining that the responsibility of administration of the RIX facility should be delegated to the Department. Staff requested that an additional five-year extension for the period of September 30, 2016, through September 29, 2021, be approved.

   Upon motion by Commissioner Hendrix, duly seconded by Commissioner Fernández, it was unanimously voted to approve the Administration Agreement for the Colton/San Bernardino Regional Tertiary Treatment and Water Reclamation Authority for the period September 30, 2016 through September 29, 2021. The President and Secretary were authorized to execute the agreement.

9. AUTHORIZATION TO SUBMIT A RESOLUTION TO JOIN THE CALIFORNIA MUNICIPAL FINANCING AUTHORITY TO THE MAYOR AND COMMON COUNCIL OF THE CITY OF SAN BERNARDINO: At the April 5, 2016 meeting of the Board of Water Commissioners (Board), the Board approved contracts with various team members to assist Finance staff in assessing the Department's options for issuing water and wastewater bonds to fund various capital projects. The need to use a joint powers authority for the planned issuance of revenue bonds arose from the debt limit provisions of Article XVI, Section 18 of the California Constitution, which generally required a 2/3 vote of the electorate before a city, county, or school district may incur long-term debt (the "Constitutional Debt Limit"). One of the exceptions to the Constitutional Debt Limit relates to financings of an enterprise fund, such as the City's Water Fund and Sewer Fund. In reliance on this exception, it became customary to structure city enterprise fund financings using a joint powers authority as a conduit issuer, with the authority issuing bonds solely

payable from installment payments made by the city from net revenues of the enterprise fund. Based on this analysis, it was determined that the California Municipal Financing Authority (CMFA) was the most efficient and cost-effective financing authority available at this time. Membership in CMFA would allow both the City and the Water Department to utilize the authority for various financing opportunities. In addition to the benefits to the City and the Water Department, membership in CMFA offered benefits to other organizations in the community. Once the City becomes a member, other for-profit and non-profit corporations within the City may utilize the CMFA's services as well.

Upon motion by Commissioner Hendrix, duly seconded by Commissioner Fernández, it was unanimously voted to approve the submission of the Resolution of the Common Council of the City of San Bernardino, California, approving, authorizing, and directing execution of a Joint Exercise of Powers Agreement relating to the California Municipal Finance Authority to the Mayor and Common Council of the City of San Bernardino.

10. REPORTS:

A. Report of the President: None

B. Report of the Commissioners: None

C. Report of the Directors: None

D. Report of the General Manager: None

11. PUBLIC COMMENTS: This is the time specified for public comments concerning specific items not on the agenda or matters of general interest. There being none, the matter was closed.

12. ADJOURN MEETING: The meeting adjourned at 10:46 a.m. to the next Regular Meeting to be held on Tuesday, July 19, 2016, at 9:30 a.m. in Margaret H. Chandler Water Reclamation Plant Conference Room, 399 Chandler Place, San Bernardino, California, 92408.

BY: _____
TONI CALLICOTT
President

BY: _____
ROBIN L. OHAMA
Deputy City Clerk & Ex-Officio Secretary

CITY OF SAN BERNARDINO
MUNICIPAL WATER DEPARTMENT

BOARD OF WATER COMMISSIONERS
STAFF REPORT

RECEIVED
JUL 11 2016
@ for SRA

TO: Stacey R. Aldstadt, General Manager

FROM: Miguel J. Guerrero, P.E., Director of Water Utility

SUBJECT: **REQUEST TO TRANSFER FUNDS FROM ANNUAL WELL REPAIR AND REHABILITATION PROJECT (CO 10788) TO KENWOOD WELL FIELD TRANSMISSION MAIN PROJECT (CO 10677)**

DATE: July 5, 2016

COPIES: Terri Willoughby, Greg Gage, Mike Garland, Susan Justice, Sally Duran

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BACKGROUND:

The Kenwood Well Field Transmission Main Project is budgeted at $175,000.00 in the Fiscal Year 2016/2017 Capital Improvement Budget. Competitive bids for the project were received on July 1, 2016 with the apparent low bid submitted in the amount of $185,512.00. In order to fund project construction, staff is requesting approval to transfer $30,000.00 from the Annual Well Repair and Rehabilitation Project (CO 10788) to the Kenwood Well Field Transmission Main Project (CO 10677).

The Annual Well Repair and Replacement Project is budgeted at $471,000.00 for Fiscal Year 2016/2017. Most of the upcoming work for well rehabilitation involves the Environmental Protection Agency (EPA) wells, with funding provided through the established Consent Decree process. Accordingly, a transfer of $30,000.00 to the Kenwood Well Field Transmission Main Project will not adversely affect work planned for well repair and rehabilitation.

FUNDING SOURCE:

Upon review of the approved Fiscal Year 2016/2017 budget, there are available funds for the proposed transfer from the following project: Annual Well Repair and Rehabilitation Project *(CO 10788).*

Agenda Item 5

SUBJECT: REQUEST TO TRANSFER FUNDS FROM ANNUAL WELL REPAIR AND REHABILITATION PROJECT (CO 10788) TO THE KENWOOD WELL FIELD TRANSMISSION MAIN PROJECT (CO 10677)

FROM ACCOUNT:

From Capital Project	Amount
Annual Well Repair and Rehabilitation Project (CO 10788)	$30,000.00

TO ACCOUNT:

To Capital Project	Amount
Kenwood Well Field Transmission Main Project (CO 10677)	$30,000.00
Total:	**$30,000.00**

RECOMMENDATION:

Staff recommends that the Board of Water Commissioners make the following motion:

> **Approve the capital budget transfer in the amount of $30,000.00 from the 2016/2017 Capital Improvement Project titled *Annual Well Repair and Rehabilitation Project (CO 10788)* to the capital project titled *Kenwood Well Field Transmission Main Project (CO 10677).***

Respectfully submitted,

for

Miguel J. Guerrero, P.E.
Director, Water Utility

MJG:GG:swd

SBMWD KENWOOD PROJECT

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RECEIVED
JUL 11 2016
@ for SMA

CITY OF SAN BERNARDINO
MUNICIPAL WATER DEPARTMENT

BOARD OF WATER COMMISSIONERS
STAFF REPORT

TO: Stacey R. Aldstadt, General Manager

FROM: Miguel J. Guerrero, P.E., Director of Water Utility

SUBJECT: **REQUEST TO TRANSFER FUNDS FROM ANNUAL WELL REPAIR AND REHABILITATION PROJECT (CO 10788) TO BELLEVIEW AND VINE STREETS ALLEY MAIN REPLACEMENT PROJECT (CO 10636)**

DATE: July 5, 2016

COPIES: Terri Willoughby, Greg Gage, Mike Garland, Susan Justice, Sally Duran

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BACKGROUND:

The Belleview and Vine Streets Main Replacement Project is budgeted at $1,000,000.00 in the Fiscal Year 2016/2017 Capital Improvement Budget. Competitive bids for the project were received on June 30, 2016 with the apparent low bid submitted in the amount of $1,103,231.00. In order to fund project construction, staff is requesting approval to transfer $200,000.00 from the Annual Well Repair and Rehabilitation Project (CO 10788) to the Belleview and Vine Streets Alley Main Replacement Project (CO 10636).

The Annual Well Repair and Replacement Project is budgeted at $471,000.00 for Fiscal Year 2016/2017. Most of the upcoming work for well rehabilitation involves the Environmental Protection Agency (EPA) wells, with funding provided through the established Consent Decree process. Accordingly, a transfer of $200,000.00 to the Belleview and Vine Streets Alley Main Replacement Project will not adversely affect work planned for well repair and rehabilitation.

FUNDING SOURCE:

Upon review of the approved Fiscal Year 2016/2017 budget, there are available funds for the proposed transfer from the following project: Annual Well Repair and Rehabilitation Project *(CO 10788).*

Agenda Item 6

SUBJECT: REQUEST TO TRANSFER FUNDS FROM ANNUAL WELL REPAIR AND REHABILITATION PROJECT (CO 10788) TO THE BELLEVIEW AND VINE STREETS ALLEY MAIN REPLACEMENT PROJECT (CO 10636)

FROM ACCOUNT:

From Capital Project	Amount
Annual Well Repair and Rehabilitation Project (CO 10788)	$200,000.00

TO ACCOUNT:

To Capital Project	Amount
Belleview and Vine Streets Alley Main Replacement Project (CO 10636)	$200,000.00
Total:	**$200,000.00**

RECOMMENDATION:

Staff recommends that the Board of Water Commissioners make the following motion:

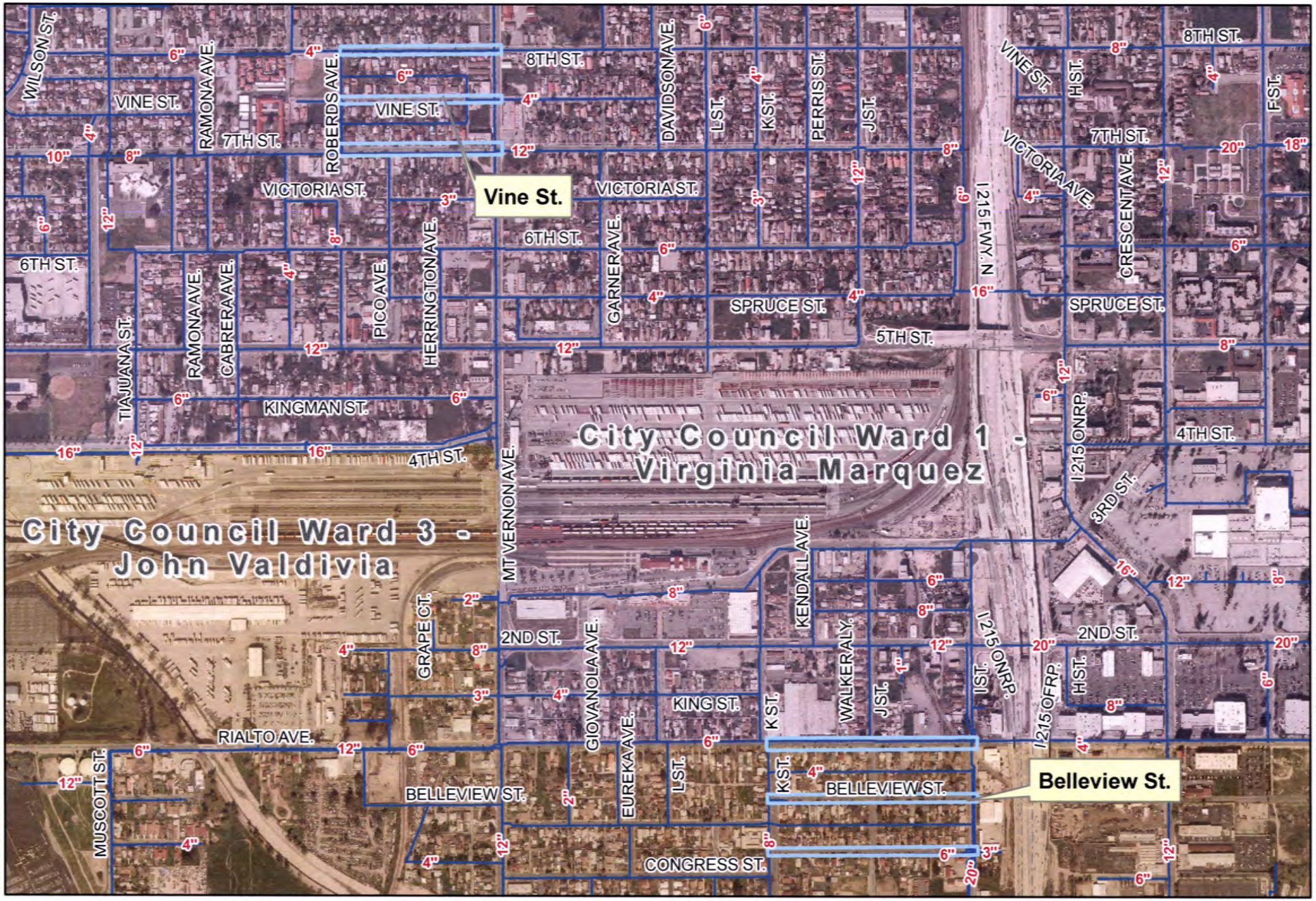
> **Approve the capital budget transfer in the amount of $200,000.00 from the 2016/2017 Capital Improvement Project titled *Annual Well Repair and Rehabilitation Project (CO 10788)* to the capital project titled *Belleview and Vine Streets Alley Main Replacement Project (CO 10636).***

Respectfully submitted,

for

Miguel J. Guerrero, P.E.
Director, Water Utility

MJG:GG:swd



SBMWD BELLEVIEW/VINE PROJECT

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CITY OF SAN BERNARDINO
MUNICIPAL WATER DEPARTMENT

RECEIVED
JUL 11 2016
@ for SRA
BOARD OF WATER COMMISSIONERS

BOARD OF WATER COMMISSIONERS
STAFF REPORT

TO: Stacey R. Aldstadt, General Manager

FROM: Miguel J. Guerrero, P.E., Water Utility Director

SUBJECT: **RULE AND REGULATION NO. 21, WATER SUPPLY SHORTAGE CONDITIONS - STAGE IIA AMENDMENT**

DATE: July 5, 2016

COPIES Robin Ohama (w/attach), Terri Willoughby (w/attach), Kristina Hernandez (w/attach), Devin Arciniega (w/attach), Sally Duran (w/attach)

BACKGROUND:

In May 2015, the State Water Resources Control Board (SWRCB) adopted an emergency drought regulation requiring a 25% reduction in potable water use across the state. SWRCB's emergency regulation outlined percentage reduction tiers (conservation standards) in gross water production for each urban water supplier to achieve the 25% reduction. Initially, the Department's conservation standard was set at 28%, but as SWRCB continued to refine the emergency regulation, the Department's standard was reduced multiple times and is currently set at 15%. The latest amendment of the emergency regulation allowed water suppliers to self-certify their own conservation standard based on supply and demand from previous years, and it also extended the emergency regulation through February 2017.

In May 2015, in response to SWRCB's emergency regulation, the Board of Water Commissioners (Board) adopted a resolution to amend Department Rule and Regulation No. 21 to include Stage IIA extreme mandatory restrictions, and at the same time, the Board implemented Stage IIA restrictions. Stage IIA requires a 28% reduction in potable water use by all Department customers. Stage IIA also includes several other restrictions such as limiting outdoor watering to three days per week, prohibiting public medians with turf irrigation to be irrigated, and prohibiting outdoor irrigation 48 hours after a significant rainfall event.

DISCUSSION:

The Stage IIA mandatory reduction in potable water use was set at 28% to match the Department's original SWRCB mandated conservation standard. Including the latest reduction, the Department's conservation standard has been revised three times over the past year: first reduced to 26%, then 24%, and now 15%. In order to remain consistent with state drought mandates and avoid continual amendments, Rule and Regulation No. 21 requires additional flexibility. This flexibility can be provided by amending Stage IIA of Rule and Regulation No. 21 to set the reduction requirement at the greater of the most current state mandated percentage or 15%. Proposed Rule and Regulation No. 21 revisions are attached.

Agenda Item 7

SUBJECT: RULE AND REGULATION NO. 21, WATER SUPPLY SHORTAGE CONDITIONS - STAGE IIA AMENDMENT

The Department remains under Stage IIA, as the extreme drought condition continues and the SWRCB drought emergency regulation remains in effect. As stated in Rule and Regulation No. 21, the Department shall maintain the amended Stage IIA water supply shortage condition until such time the General Manager determines that drought conditions have improved to a point where Stage II or Stage I can be re-implemented.

RECOMMENDATION:

Staff recommends that the Board of Water Commissioners make the following motion:

> **Approve amendment of City of San Bernardino Municipal Water Department Rule and Regulation No. 21, Water Supply Shortage Conditions – Stage IIA to become effective on August 1, 2016.**

Respectfully submitted,

Miguel J. Guerrero, P.E.
Director of Water Utility

MJG:swd
Attach.

Exhibit "A"

CITY OF SAN BERNARDINO MUNICIPAL WATER DEPARTMENT
300 North "D" Street
San Bernardino, CA 92401

RULE AND REGULATION NO. 21
GENERAL WATER SERVICE/WATER RATES

The following rates shall be charged for all water furnished for domestic, commercial, industrial, and municipal water use within the City of San Bernardino, and for any other purpose for which no rate is specified.

A. MINIMUM MONTHLY CHARGE All users will be assessed a minimum monthly charge to recover fixed costs, such as meter replacement, customer service, mailing costs, bill payment and debt service. The rates will be as follows:

Meter Size	February 1, 2010	January 1, 2011	January 1, 2012
½ inch or ⅝ inch	$ 10.55	$ 12.20	$ 12.90
¾ inch	$ 13.00	$ 15.15	$ 16.15
1 inch	$ 17.90	$ 21.00	$ 22.60
1½ inch	$ 30.15	$ 35.75	$ 38.80
2 inch	$ 44.85	$ 53.45	$ 58.20
3 inch	$ 79.15	$ 94.75	$ 103.50
4 inch	$ 128.15	$ 153.70	$ 168.20
6 inch	$ 250.70	$ 301.15	$ 330.00
8 inch	$ 397.75	$ 478.10	$ 524.15
10 inch	$ 569.30	$ 684.55	$ 750.65

B. COMMODITY CHARGE: This charge recovers water production and treatment costs, as well as associated variable costs of the Department. This rate is charged per hundred cubic feet (hcf) of water sold.

Commodity Charge per hcf	February 1, 2010	January 1, 2011	January 1, 2012
	$1.05	$1.10	$1.15

C. REPLENISHMENT CHARGE: This charge recovers the cost of water purchased to replenish the local basin and may be adjusted up or down, depending upon the amount of replenishment required. This rate is charged per hundred cubic feet (hcf) of water sold.

Replenishment Charge per hcf	February 1, 2010	January 1, 2011	January 1, 2012
	$0.09	$0.09	$ 0.09

D. ELEVATION CHARGE: This charge recovers electrical costs to transport water through the system and is specific to each zone. The electric cost incurred at plant facilities within each elevation level is distributed across water usage within that zone. This rate is charged per hundred cubic feet (hcf) of water sold.

Elevation zone	February 1, 2010	January 1, 2011	January 1, 2012
Zone 1	$0.09	$0.10	$0.11
Zone 2	$0.17	$0.18	$0.19
Zone 3	$0.15	$0.16	$0.17
Zone 4	$0.12	$0.13	$0.14
Zone 5	$0.21	$0.22	$0.23
Zone 6	$0.21	$0.22	$0.23

Note: the Energy Surcharge previously collected is now included in this Elevation Charge.

E. CONSERVATION CHARGE AND TIERS: To encourage conservation, customer accounts placing a greater demand on the water system will be assessed a higher cost. Initially, customers using in excess of their class average by service size listed below will pay a higher rate for water usage that falls in the second tier. To encourage greater conservation over a longer period of time, each tier and charge will adjust annually. This rate is charged per hundred cubic feet (hcf) only on that usage above the level defined in the tier table below. Revenues recovered from these charge will fund conservation programs sponsored by the Department.

Conservation Charge per hcf	January 1, 2012
	$0.35

All usage in hundred cubic feet (hcf) in excess of that listed below, by class, is billed the conservation charge. *As an example:* As of July 1, 2012, residential use equal to or below 32 hcf in a monthly billing period will not be assessed an additional conservation charge. However, each hcf billed above 32 will be assessed an additional 35¢ per hcf. The table below indicates the hcf cutoff for each customer class by meter size.

Conservation Tiers	January 1, 2012
Residential	32
MDU (2)	42
MDU (2+) per unit	17
Non-residential ⅝"	24
Non-residential ¾"	36
Non-residential 1"	65
Non-residential 1½"	150
Non-residential 2"	250
Non-residential 3"	740
Commercial ⅝"	42
Commercial ¾"	55
Commercial 1"	130
Commercial 1½"	275
Commercial 2"	445
Commercial 3"	875
Commercial 4"	2,400
Commercial 6"	9,000

F. ASSESSMENT DISTRICT CHARGE: Water furnished to the City for landscape assessment districts or funded from other than the City's General fund will be charged the following rate per hundred cubic feet (hcf) of water sold.

Assessment District Charge per hcf	**February 1, 2010**	**January 1, 2011**	**January 1, 2012**
	$0.37	$0.40	$0.45

G. UNMETERED CHARGE: A "jumper" may be substituted for a water meter during single or multi-family housing construction at a charge of $50 per month for a maximum of 120 calendar days or until the lot landscaping begins. Thereafter, a water meter shall be installed subject to all fees and charges as listed above prior to the issuance of a certificate of occupancy. Water used for tract grading and jetting of trenches is not covered in the above charge and is subject to the fees and charges listed in Rule and Regulation No. 16.

H. SURCHARGE – OUTSIDE CITY LIMITS: Any service installed outside the incorporated territory of the City after February 1, 1991 may be billed the meter charge and all required consumption related charges as set forth in this rule and regulation, multiplied by 1.5.

I. WATER SUPPLY SHORTAGE RATES: To comply with State of California mandates, the City of San Bernardino Municipal Water Department shall implement the following procedure in response to drought or water supply shortage declarations or similar service interruptions in the delivery of water to its customers.

During any drought or water supply shortage condition, the Department's General Manager may declare any one of three shortage level responses with ratification by the Board of Water Commissioners (Board) within three calendar days. A declaration of a water supply shortage may result from:

- Interruption of service through major plant failure;
- Interruption of replenishment water from various resources;
- Rainfall level at twenty-five percent (25%) or more below normal levels for at least six months;
- A natural disaster or other emergency event;
- Emergency regulations by the State Water Resources Control Board (SWRCB) and/or Executive Order(s) from the Governor's office.

Stage I (Voluntary Restrictions) incurs no financial penalties but requires an ongoing commitment to a water conservation program. During Stage I, the Department shall:

- Offer educational resources and landscaping classes;
- Offer rebate programs for water smart appliances and other water saving devices;
- Encourage voluntary conservation through continued media announcements;
- Request the City Manager to direct city parks, facilities and golf courses to restrict landscape watering to off-peak hours to reduce demand on the water system and eliminate the 60% evaporation rate during daytime watering.

- Provide reminder notices regarding noted water waste; and
- Offer community outreach programs.

Due to the continuous conservation efforts required to preserve San Bernardino's water supply in the region's arid climate, Stage I will be maintained at all times.

Stage II (Mandatory Restrictions) will impose a five percent (5%) reduction in water usage and assess financial penalties on usage in excess of those amounts.

A base allowance for each customer will be established based upon their 2013 calendar year's water usage. A ten percent (10%) surcharge will be applied to each billing unit that exceeds the (5%) required reduction in base allowance. Where the customer does not have consumption history from 2013, then the Department shall use the customer's rate/class consumption average, by meter size, as the benchmark.

As an example: A customer used 20 billing units in August 2013. During a Stage II five percent (5%) usage reduction, the customer is permitted 19 billing units during the August 2014 billing period.

20 hcf x 5% = 1 hcf
20 hcf – 1 hcf = 19 hcf- August 2014 Baseline

If that customer utilizes 19 or less billing units, no financial penalty is assessed. However, should that customer utilize 25 billing units, a ten percent (10%) surcharge will be assessed for each billing unit in excess of 19:

25 hcf – 19 hcf = 6 hcf x 10% x $1.15 (Commodity Rate) = $.69 Surcharge

Additionally, during Stage II, the Department mandates the following:

- Irrigation shall only be allowed between the off-peak hours of 6:00 pm through 8:00 am;
- Irrigation shall be limited to four days per week on Mondays, Wednesdays, Fridays and Sundays only;
- No watering of outdoor landscapes that cause excessive runoff;
- No washing down driveways, sidewalks, or other hardscapes;
- The washing of cars, trucks, or other vehicles is not permitted except with an automatic shut-off device, or at a commercial car washing facility designated for vehicle washing;
- No use of fountains that use potable water, unless the water is recirculated;
- Increase advertisement of conservation measures;
- Maintain a message center for reporting water waste;
- Determine course of action to remediate reported water waste;
- Request the City Manager to direct Parks and Recreation, City Facilities and all golf courses to limit outdoor watering for irrigation to four days per week, and also only between the hours of 6:00 pm through 8:00 am.
- All leaks shall be corrected within seventy two (72) hours of Department notification.

The Board of Water Commissioners reserves the right to declare additional Stage II mandatory restrictions and prohibitions in the future if required by the State of California.

Stage IIA (Extreme Mandatory Restrictions) will impose a reduction in water usage consistent with state conservation mandates or a ~~twenty-eight~~fifteen percent (15%~~28%~~) reduction in water use, whichever is greater, ~~in water usage~~ and assess financial penalties on usage in excess of those amounts.

A base allowance for each customer will be established based upon state conservation mandates. If not defined by conservation mandate, ~~A~~a base allowance for each customer will be established based upon their 2013 calendar year's water usage. A twenty percent (20%) surcharge will be applied to each billing unit that exceeds the ~~(28%)~~ required reduction in base allowance. Where the customer does not have consumption history ~~from 2013~~, then the Department shall use the customer's rate/class consumption average, by meter size, as the benchmark.

As an example: A customer used 20 billing units in August 2013. During a Stage IIA fifteen~~twenty-eight~~ percent (15%~~28%~~) usage reduction, the customer is permitted 17~~14.4~~ billing units during the August ~~2015~~ billing period.

20 hcf x 15~~28~~% = 3~~5.6~~ hcf
20 hcf – 3~~5.6~~ hcf = 17~~14.4~~ hcf August ~~2015~~ Baseline

If that customer utilizes 17~~14.4~~ or less billing units, no financial penalty is assessed. However, should that customer utilize 25 billing units, a twenty percent (20%) surcharge will be assessed for each billing unit in excess of 17~~14.4~~ hcf. Assuming the commodity rate is $1.15 per hcf:

25 hcf – 17~~14.4~~ hcf = 8~~10.6~~ hcf x 20% x commodity rate~~.~~

Surcharge = 8~~10.6~~ hcf x 0.2 x $1.15 = $1.84~~$2.44~~

Additionally, during Stage IIA, the Department mandates the following:

- Irrigation shall only be allowed between the off-peak hours of 6:00 pm through 8:00 am;
- Irrigation shall be limited to three days per week; Mondays, Wednesdays and Fridays only;
- Maximum irrigation time of 15 minutes per station per designated irrigation day;
- Irrigation will be prohibited for a full 48 hours after a significant precipitation event (rainfall in excess of 1/8" as measured at the Department's Mill and D rain gauge) has occurred over the City of San Bernardino. Department will maintain website notification when this restriction will be in place;
- No watering of outdoor landscapes that cause excessive runoff;
- No washing down driveways, sidewalks, or other hardscapes;
- The washing of cars, trucks, or other vehicles is not permitted except with an automatic shut-off device, or at a commercial car washing facility designated for vehicle washing;
- No use of fountains that use potable water, unless the water is recirculated;

- Increase advertisement of conservation measures;
- Maintain a message center for reporting water waste;
- Determine course of action to remediate reported water waste;
- Request the City Manager to direct Parks and Recreation, City Facilities and all golf courses to limit outdoor watering for irrigation to two~~three~~ days per week or reduce consumption by the current Stage IIA reduction percentage, and also only between the hours of 8:00 pm through 6:00 am.
- Irrigation of ornamental turf on public street medians is prohibited.
- Use of potable water outside of new residential home and commercial/industrial construction that is not delivered by drip or micro-spray systems is prohibited.
- The serving of drinking water other than upon request is prohibited, in eating or drinking establishments including but not limited to restaurants, hotels, cafes, cafeterias, bars or any other public place where food or drink are served.
- All hotels/motels shall provide their guests with the option of choosing not to have towels and linens laundered daily. The hotel/motel must prominently display notice of this option in each bathroom using clear and easy language.
- All leaks shall be corrected within seventy two (72) hours of Department notification.

The Board of Water Commissioners reserves the right to declare additional mandatory restrictions and prohibitions in the future if required by the State of California.

Stage III (Water Shortage Emergency) will impose a fifty percent (50%) reduction in water usage and assess financial penalties on usage in excess of those amounts. A Stage III water supply shortage condition shall be declared if a catastrophic interruption of water supply or distribution facility occurs as the result of drought, earthquake, wildfire, extended power outage or any other disaster in which the Department may be prevented from meeting the water demands of its customers. Prior to the Board of Water Commissioners taking action on the Stage III declaration, notice will be given to the Mayor and the City Manager of the mandatory restrictions that will be placed into effect.

A base allowance for each customer will be established based upon their 2013 calendar year water usage. A one hundred percent (100%) surcharge will be applied to each billing unit that exceeds the fifty percent (50%) required reduction in base allowance. Where the customer does not have consumption history from 2013, then the Department shall use the customer's rate/class consumption average, by meter size, as the benchmark.

As an example: A customer used 20 billing units in August 2013. During a Stage III fifty percent (50%) usage reduction, the customer is permitted 10 billing units during the August 2015 billing period.

20 hcf x 50% = 10 hcf
20 hcf – 10 hcf = 10 hcf -August 2015 Baseline

If that customer utilizes 10 or less billing units, no financial penalty will be assessed. However, should that customer utilize 25 billing units, a one hundred percent (100%) surcharge will be assessed for each billing unit in excess of 10: Assuming the commodity rate is $1.15 per hcf:

25 hcf – 10 hcf = 15 hcf x 100% x $1.15 (commodity rate.) = $17.25 Surcharge

Additionally, during Stage III, the Department shall:

- Irrigation shall be allowed only between the off-peak hours of 8:00 pm through 6:00 am; however, the Department reserves the right to prohibit all outdoor irrigation at any time depending on the severity of the emergency.
- Irrigation shall be limited to two days per week, on Mondays and Thursdays; however, the Department reserves the right to prohibit all outdoor irrigation at any time depending on the severity of the emergency;
- No watering of outdoor landscapes that cause excessive runoff;
- No washing down driveways, sidewalks, or other hardscapes;
- No washing of vehicles except at commercial vehicle washing facilities;
- No use of fountains that use potable water, unless the water is recirculated;
- Increase advertisement of conservation measures;
- Maintain a message center for reporting water waste;
- Determine course of action to remediate reported water waste;
- Request the City Manager to direct parks, facilities and golf courses to limit outdoor watering for irrigation to two days per week, and also only between the off-peak hours of 8:00 pm through 6:00 am; however, the Department reserves the right to prohibit all outdoor irrigation at any time depending on the severity of the emergency;
- The serving of drinking water other than upon request is prohibited, in eating or drinking establishments including but not limited to restaurants, hotels, cafes, cafeterias, bars or any other public place where food or drink are served.
- All hotels/motels shall provide their guests with the option of choosing not to have towels and linens laundered daily. The hotel/motel must prominently display notice of this option in each bathroom using clear and easy language.
- All leaks shall be corrected within seventy-two (72) hours of Department notice;
- Deny all new construction meter requests;
- Remove or lock out all existing construction meters in service.

Notices of Violation:

- Step 1: 1st Violation warning letter to the customer/owner describing the water waste issue and notice of potential fines for continuing water waste, providing a Department customer service contact for conservation information and assistance. Provides customer/owner seven calendar days to remedy the water waste situation and comply with conservation restrictions.

- Step 2: 2nd Violation, customer/owner site visit or phone call to discuss nature of the water waste and potential solutions. A second Notice of Violation letter allowing seven calendar days to remedy the water waste situation and comply with conservation restrictions.

- Step 3: 3rd Violation: Third Notice of Violation letter informing customer/owner of financial penalty and allowing seven calendar days to remedy water waste situation and comply with conservation restrictions. One hundred dollars ($100.00) penalty assessed.

- Step 4: Subsequent Violation(s): Additional penalties increasing incrementally by one hundred dollars ($100.00) per occurrence, up to a limit of five hundred dollars ($500.00) per incident. Customer/owner shall receive a separate notice per each subsequent violation and will have seven (7) calendar days after each notification to remedy the water waste situation and comply with conservation restrictions;

- Step 5: The Department may restrict the amount of water supplied to any customer/owner failing to comply with conservation standards. The provisions of this section shall be applied in addition to any other penalties provided in this rule and shall be applied at the discretion of the Department.

  Exceptions: The restrictions of water consumption outlined herein are not applicable to water usage necessary for public health and safety or for essential governmental services, such as police, fire, and emergency services. The Department reserves the right to waive any water restriction penalty when, in its discretion, such consumption is required in order to maintain an adequate level of public health and safety.

Payment of Surcharges and Penalties:

All surcharges and penalties imposed under this rule and regulation shall be added to customer's water bills or as a lien on the owner's property and become payable at the same time and in the same manner as such bills or by such other method of collection and payment as established by the Department.

Right to Hearing:

Any customer/owner shall have a right to a hearing with the General Manager of the Department, or his/her designee, on a notice of violation, the assessment of a surcharge or penalty, or the denial and/or lock out of a construction meter, upon written request to the Department. Customer/owner's written request for a hearing must be received by the Department within ten (10) calendar days from the date of notice of violation, or customer/owner's right to a hearing shall be deemed waived.

Customer/owner shall be deemed notified of a violation, surcharge, penalty, or denial and/or lockout of a construction meter upon (1) the personal delivery of the notice to customer or (2) the date of lock out and/or denial of construction meter. If personal delivery is not given, the date on which the notice is placed in the regular mail shall be deemed the date of notification.

Customer/owner's timely written request for a hearing shall automatically stay the imposition of a penalty until the General Manager or his/her designee renders a decision; except that

denial of a construction meter request or lock out of an existing construction meter shall remain in effect until the General Manager or his/her designee renders a decision.

The decision of the General Manager or his/her designee may be appealed to the Board of Water Commissioners, provided that the customer files a written notice of appeal with the Department within five calendar days of notification of the decision.

The decision of the General Manager, his/her designee, or the Board (if an appeal is timely filed) shall be final and conclusive and shall not be subject to appeal to the Mayor and Common Council. Once the decision becomes final as provided in this rule and regulation, the time in which judicial review of the decision must be sought shall be governed by California Code of Civil Procedure Section 1094.6, or other applicable State law.

Other Water Conservation Measures:

The Board may order implementation of other water conservation measures in addition to those set forth in this rule and regulation. Such additional water shortage measures shall be implemented in the manner provided in this rule.

Conclusion of a Water Supply Shortage Condition:

The General Manager shall notify the Board when the water supply shortage condition stage level should be reduced. The Board may ratify the General Manager's reduction of stage level. All bills issued after the Board's ratification date shall not include water supply shortage surcharges.

Use of Surcharge Funds:

Any surcharges and fines will be segregated into a restricted cash account managed by the Department to supplement the conservation efforts of the Department.

Approved by BOWC:	July 19~~May 19~~, 2016~~2015~~
Effective:	August 1~~June 1~~, 2016~~2015~~
Supersedes:	June 1, 2015~~August 19, 2014~~

CITY OF SAN BERNARDINO
MUNICIPAL WATER DEPARTMENT

BOARD OF WATER COMMISSIONERS
STAFF REPORT

JUL 11 2016
@ for SWA

TO: Stacey R. Aldstadt, General Manager

FROM: Miguel J. Guerrero, P.E., Director of Water Utility

SUBJECT: **APPROVAL OF EPA 006 WELL REHABILITATION BY WEBER WATER RESOURCES**

DATE: July 6, 2016

COPIES: Robin Ohama (w/o attach), Terri Willoughby (w/o attach), Mike Garland (w/attach), Susan Justice (w/o attach), Sally Duran (w/attach)

BACKGROUND:

Extraction well EPA 006 is operated as part of the Newmark Operable Unit (OU) Remedial Action under the terms negotiated with the United States Environmental Protection Agency (USEPA). The purpose of EPA 006 is to inhibit further migration of PCE and TCE in the aquifer. As is the case for all Remedial Action wells, proper and consistent operation of EPA 006 is critical in maintaining plume capture and therefore downtime should be minimized.

In April 2016, EPA 006 well equipment failed and was removed for diagnosis. The Department contracted with Best Pump and Drilling, Inc. (Best) to pull EPA 006 well equipment, assess the equipment and well, and provide recommendations for rehabilitation of the well. It was determined that the mechanical failure was due to a failed thrust bearing and worn pump impellers. Based on Best's assessment, rehabilitation of the EPA 006 involving replacement of the well pump, motor, column pipe, and all necessary ancillary material such as electrical cable is recommended.

In December 2014, staff issued a Request for Qualifications (RFQ) under Specification No. 1640 – Well Rehabilitation Assessment and Repair. As a result, in February 2015, five (5) well rehabilitation contractors were prequalified based on work experience, minimum insurance requirements, proper contractor's license, bonding capacity, experience level, and adequate staffing. Staff recently requested rehabilitation proposals from these prequalified contractors to rehabilitated EPA 006. Weber Water Resources (Weber) was responsive and provided the lowest quotation in the amount of $42,986.62. A copy of Weber's proposal detailing scope and budget is attached for reference.

Agenda Item 8

SUBJECT: APPROVAL OF EPA 006 WELL REHABILITATION BY WEBER WATER RESOURCES

FISCAL IMPACT:

Staff is recommending that this expenditure of $42,986.62 be approved from existing funds in the Fiscal Year 2016/2017 Capital Budget under *Annual R/R – EPA Extraction Well (Newmark)* with available funding of approximately $285,000.00. Rehabilitation of EPA 006 is 100 percent reimbursable through the AIG commutation account.

RECOMMENDATION:

Staff recommends that the Board of Water Commissioners make the following motion:

- **Approve the rehabilitation of EPA 006 by Weber Water Resources in the amount of $42,986.62.**

Respectfully submitted,

Miguel J. Guerrero, P.E.
Director of Water Utility

MJG:swd
Attach.

SBMWD EPA WELL 006

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WEBER
WATER RESOURCES

QUOTATION

Customer:	San Bernardino Municipal Water Department	From:	Tony McBee
Attention:	Mike Garland	Date:	6/29/2016
Phone:	(909) 384-5087	Phone:	909-519-2579
Fax:	(909) 384-5260	Project:	EPA Well 006

Weber Water Resources is pleased to offer the following service for your review and consideration:

QTY.	DESCRIPTION	UNIT PRICE	TOTAL
24.00	Shop Labor: Pre-splice submersible power cable to motor lead and test. Perform QC inspection of new materials and load for transport. Fabricate PVC motor shroud and brackets.	$90.00	$2,160.00
1.00	Pump Rig and Crew, Off Site, Non-Prevailing Wage: Travel/mobilization/demobilization.	$900.00	$900.00
14.00	Pump Rig and Crew, On Site Prevailing Wage: Install well pump complete.	$425.00	$5,950.00
1.00	Technician, Off Site, Non-Prevailing Wage: Travel to, from site.	$150.00	$150.00
8.00	Technician, On Site Prevailing Wage: Preform field start up of pump.	$160.00	$1,280.00
		Subtotal for Labor	**$10,440.00**
1.00	Submersible Bowl Assembly to provide 400GPM/292-Feet TDH with stainless steel impellers, collets, hardware. Goulds Model 11WALC-5 Stage NOTE: Goulds is not a pre-approved pump manufacturer.	$5,675.00	$5,675.00
1.00	Submersible Motor, 50HP 460V 4-Pole (1800 Nominal RPM) 10-Inch Water Filled MFG: Submersible Motor Engineering	$14,810.00	$14,810.00
1.00	Pump Shroud Material 12-Inch Schedule 30 with stainless steel brackets and hardware	$937.50	$937.50
15.00	Column Pipe, 6-Inch x 20-Foot Threaded and Coupled, .250 wall	$212.50	$3,187.50
330.00	Submersible Cable, #4-3 wire w/ ground, flat jacketed	$4.87	$1,607.10
1.00	Column Pipe Nipple, 6-Inch x 1-Foot Threaded Both Ends, .250 wall	$187.50	$187.50
1.00	Check Valve, 6-Inch K & K Supply	$725.00	$725.00
1.00	Airline, PVC Coated 304 Stainless Steel, 1/4-inch x approx 310-feet w/ direct reading water level gage.	$956.25	$956.25
1.00	Sounding Line, 1-Inch Flush Thread PVC x approx 305-feet	$261.56	$261.56
1.00	Miscellaneous Items and Supplies: Submersible Splicing Materials (Compression connectors, epoxy heat shrink, tapes) Stainless Steel Banding and Buckles Misc. Small Fittings, Fasteners and Hardware Gaskets (Base Flange and Pipe Flange - NAF/NSF)	$468.75	$468.75
1.00	Miscellaneous Freight and Shipping Charges On Materials	$1,250.00	$1,250.00
		Subtotal for Material	**$30,066.16**

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WEBER
WATER RESOURCES

QUOTATION

QTY.	DESCRIPTION	UNIT PRICE	TOTAL
1.00	8.25% Tax on Materials (Optional Items Not Included)	$2,480.46	$2,480.46
		Subtotal for Tax	**$2,480.46**
		TOTAL AMOUNT	**$42,986.62**

OPTIONAL ITEMS

QTY.	DESCRIPTION	UNIT PRICE	TOTAL
1.00	Optional Materials: Submersible Discharge Head, Steel Fabricated 6-inch	$3,140.00	$3,140.00

TERMS AND CONDITIONS

Terms net 10 days from date of Invoice
Partial invoice to be generated at 30%, 60% and final completion.
Quotation valid for 30 days
1 year standard warranty from date of start up. Warranty does not cover acts of god, lubrication, aggregates (sand etc.), aeration, cavitations, customer supplied or used material
Freight is FOB Jobsite
All invoices are subject to a fuel surcharge
Customer is responsible for all applicable sales tax
Invoices will be based on quantities consumed
Weber reserves the right to file 20 day preliminary lien notices on all projects
Delinquent invoices will be charged an interest rate at the highest percentage rate available by law

Thank you for the opportunity to be of service. Please sign, date and return with P.O. number and we will proceed with project.

Best Regards,

Weber Water Resources
909-519-2579

AUTHORIZED BY: _____ DATE: _____

TITLE: _____ PO NUMBER: _____

COMPANY: San Bernardino Municipal Water Department QUOTE NUMBER: _____

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Pump Data Sheet - Submersible 60 Hz

Company: Weber Water Resources
Name: Tony McBee
Date: 6/29/2016

SBMWD - EPA Well 006 Proposed Bowl Assembly

WEBER WATER RESOURCES

Pump:

Size: 11WALC (5 stage)

Type: Submersible
Synch Speed: 1800 rpm

Speed: 1770 rpm
Dia: 8.1875 in

Curve: E6411WBPC0

Impeller:

Specific Speeds:

Ns: 1600
Nss: ---

Dimensions:

Suction: ---
Discharge: ---

Vertical Turbine:

Bowl Size: 11 in
Max Lateral: 0.75 in
Thrust K Factor: 6 lbf/ft

Pump Limits:

Temperature: ---
Pressure: ---
Sphere Size: 0.63 in

Power: ---
Eye Area: ---

Search Criteria:

Flow: 400 US gpm

Head: 292 ft

Fluid:

Water
Density: 62.37 lb/ft³
Viscosity: 1.105 cP

Temperature: 60 °F
Vapor Pressure: 0.2563 psi a
Atm Pressure: 14.7 psi a

NPSHa: ---

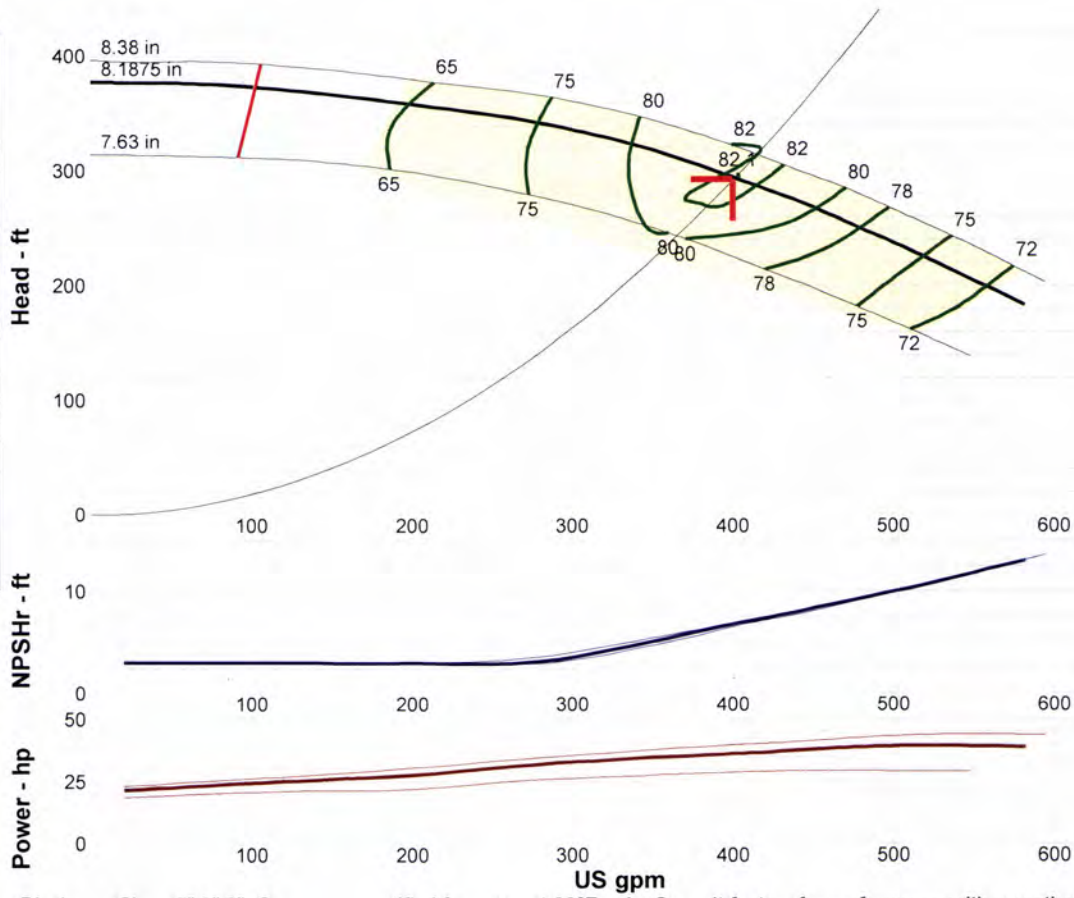
Motor:

Standard: NEMA
Enclosure: SUB

Size: 40 hp
Speed: 1800 rpm
Frame: 10 inch

Sizing Criteria: Max Power on Design Curve

---- Duty Point ----	
Flow:	401 US gpm
Head:	294 ft
Eff:	82.1%
Power:	36.3 hp
NPSHr:	6.79 ft
---- Design Curve ----	
Shutoff Head:	377 ft
Shutoff dP:	163 psi
Min Flow:	101 US gpm
BEP:	82.1% @ 404 US gpm
NOL Power:	39.4 hp @ 519 US gpm
-- Max Curve --	
Max Power:	43.9 hp @ 536 US gpm



Discharge Sizes-5",6",8". Curves are certified for water at 60°F only. Consult factory for performance with any other fluid.
Note: Contains unofficial Goulds Water Technology catalog content, not to be used for production.

Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
480	1770	249	77.9	38.8	9.35
400	1770	295	82	36.3	6.75
320	1770	329	78.6	33.7	4.24
240	1770	350	70.2	30	3.07
160	1770	365	55.2	26.5	3

Selected from catalog: Goulds Sub.60 Vers: 3.63

MOTOR PERFORMANCE DATA

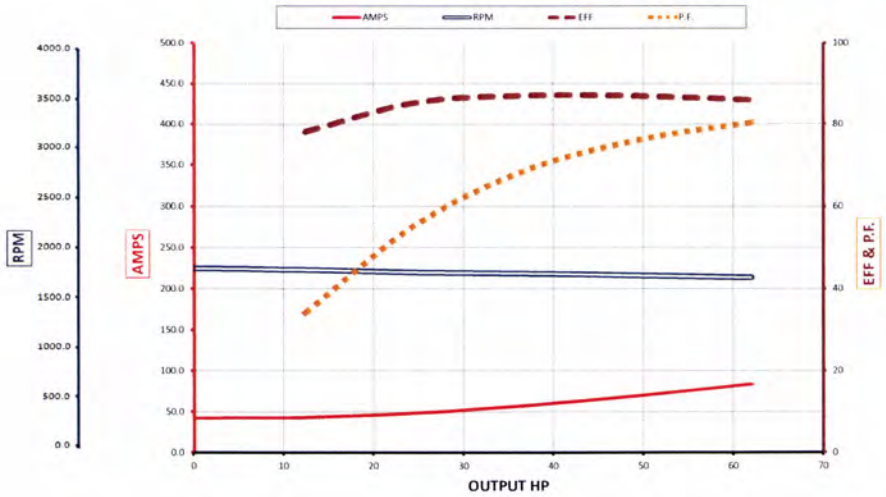
SME

Model: 10" 4P Submersible Motor

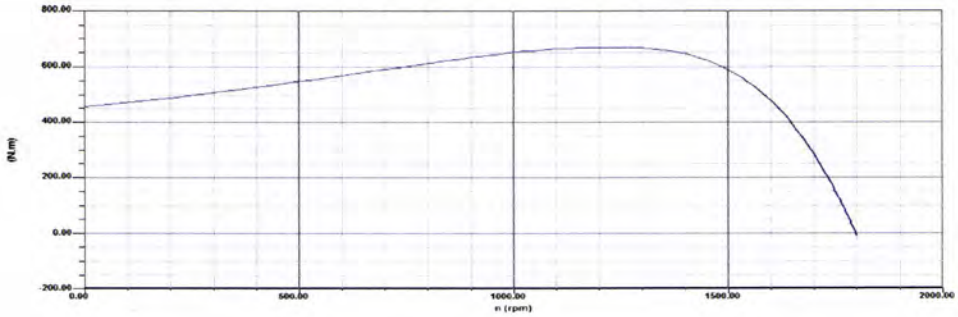
WATER	Type	50	HP	70	AMPS	Date:	27/06/2014
3	Phase	460	Volt	1730	RPM	50	HP
1.15	S.F.	30Deg.C	Max.Amb.Water	60	Hertz	1730	RPM
				4540	Kg Thrust Load	380	mm Stack

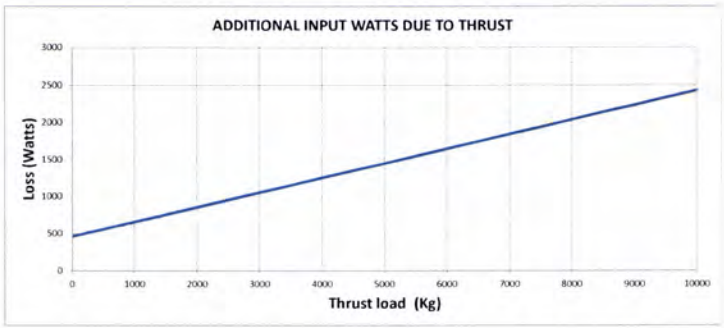
Full Load Torque	204	Nm
Break Down Torque	668	Nm
Locked Rotor Torque	456	Nm
Locked Rotor Current	421	Amps
Winding Resistance	0.30	Ohms
Weight (With Water)	204	Kg (Approximate)

Load	KW out	HP	KW in	EFF	P.F.	RPM	AMPS
No Load	0	0	1.8	0	0.05	1800	42.4
25%	9.3	12	11.8	78.1	0.34	1785	43.4
50%	18.5	25	21.6	85.5	0.56	1760	48.7
75%	27.8	37	31.8	87.1	0.69	1750	58.0
100%	37.0	50	42.5	87.0	0.76	1730	70.1
125%	46.3	62	53.7	86.1	0.80	1710	83.9

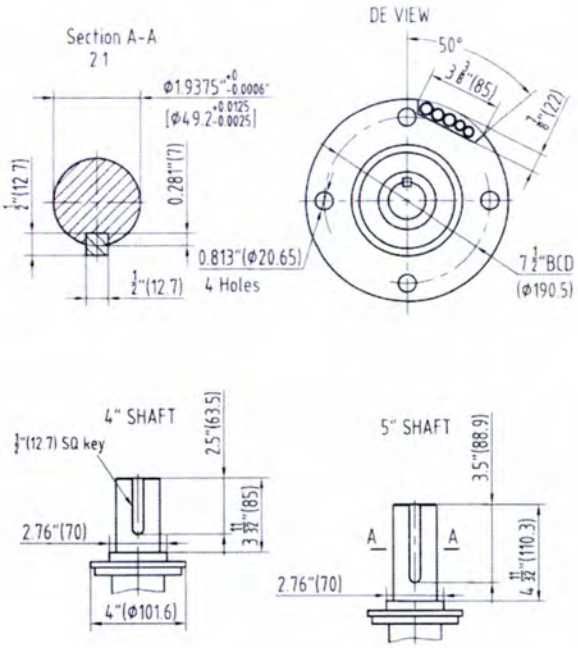


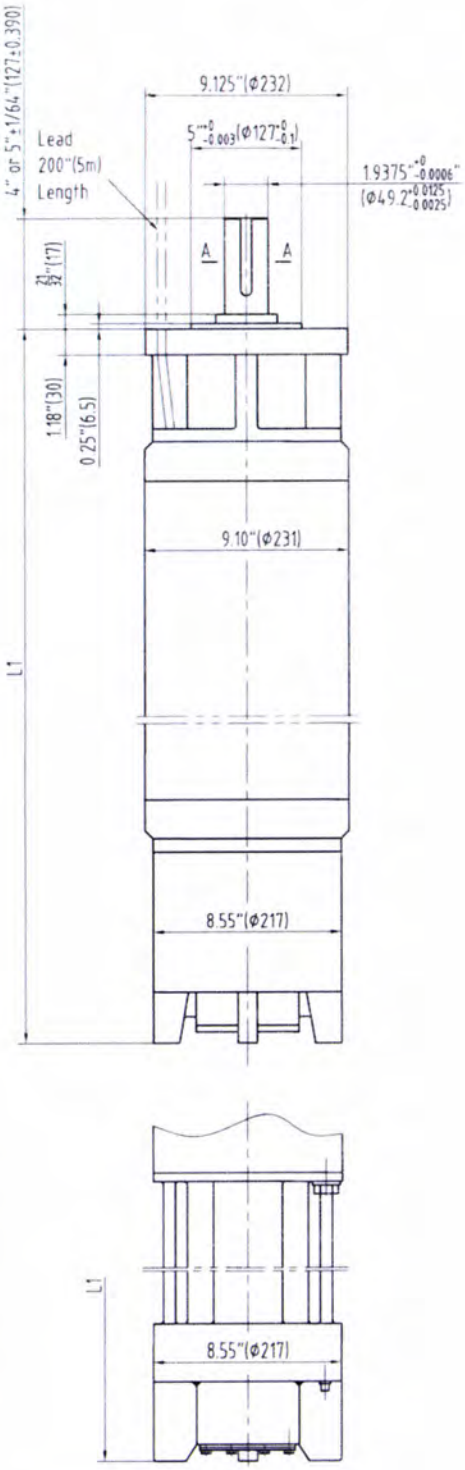
OUTPUT TORQUE VS SPEED





10" MOTOR DIMENSIONS





HEAT EXCHANGER MOTOR (HE)

Output				Phase	Stack Length	L1			
50Hz		60Hz				STANDARD		HE	
HP	kW	HP	kW		mm	inch	mm	inch	mm
50	37	75	56		300	42.2	1072	65.83	1672
75	56	100	75		425	47.13	1197	70.76	1797
100	75	125	93		550	52.05	1322	75.69	1922
125	93	150	112		650	55.98	1422	79.62	2022
150	112	200	150	2P	850	63.86	1622	87.50	2222
175	130	225	168		950	67.80	1722	92.43	2322
200	150	250	186		1050	71.73	1822	95.37	2422
250	186	270	200		1150	75.67	1922	99.31	2522
270	200	300	224		1300	81.57	2072	105.21	2672
310	230	350	261						
		40	30		300	42.2	1072	65.84	1672
40	30	50	37		380	45.35	1152	68.99	1752
50	37	60	45		500	50.08	1272	73.72	1872
60	45	75	56		600	54.02	1372	77.65	1972
75	56	100	75	4P	800	61.89	1572	85.53	2172
100	75	125	93		1000	69.76	1772	93.40	2372
125	93	150	112		1100	73.70	1872	97.34	2472
135	100	175	130		1200	77.64	1972	101.28	2572
150	112	200	150		1300	81.57	2072	105.21	2672

CITY OF SAN BERNARDINO
MUNICIPAL WATER DEPARTMENT

BOARD OF WATER COMMISSIONERS
STAFF REPORT

RECEIVED
JUL 1 1 2016
e for SRA
GENERAL MANAGER

TO: Stacey R. Aldstadt, General Manager

FROM: Miguel J. Guerrero, P.E., Director of Water Utility

SUBJECT: **APPROVAL OF EPA 111 WELL REHABILITATION BY BEST PUMP AND DRILLING, INC.**

DATE: July 5, 2016

COPIES: Robin Ohama (w/o attach), Terri Willoughby (w/o attach), Mike Garland (w/attach), Susan Justice (w/o attach), Sally Duran (w/attach)

BACKGROUND:

Extraction well EPA 111 is operated as part of the Muscoy Operable Unit (OU) Remedial Action under the terms negotiated with the United States Environmental Protection Agency (USEPA). The purpose of EPA 111 is to inhibit further migration of PCE and TCE in the shallow aquifer. EPA 111 consistently produces the highest concentrations of PCE and TCE relative to the other Remedial Action extraction wells. As is the case for all Remedial Action wells, proper and consistent operation of EPA 111 is critical in maintaining plume capture and therefore downtime should be minimized.

In July 2013, a packer was installed in EPA 111 approximately 665 feet below ground surface (bgs) to isolate production to the upper screen interval in order to better target PCE/TCE contamination. Although this measure proved to be effective in targeting the contamination, it also had adverse effects that caused the well to drastically lose efficiency over the last three years. In March 2016, while in the process of evaluating rehabilitation measures to increase efficiency, the pump in EPA 111 failed. Inspection of the pump and well revealed that most of the screen louvers were partially to near totally blocked as a result of chemical and biological conditions that caused buildup of scaling and bio fouling along the well screening.

In April 2016, the Department contracted with Best Pump and Drilling, Inc. (Best) to pull EPA 111 well equipment, assess the equipment and bio fouling issue, and provide recommendations for rehabilitation of the well. As part of this effort, Best subcontracted with Water Systems Engineering Inc. (WSE) for assessment and recommendations on the scaling and bio fouling issue. Based on WSE's assessment, combined chemical and mechanical cleaning of EPA 111 is recommended. The attached WSE recommendation letter and lab report detail the specifics of this approach.

SUBJECT: APPROVAL OF EPA 111 WELL REHABILITATION BY BEST PUMP AND DRILLING, INC.

In December 2014, staff issued a Request for Qualifications (RFQ) under Specification No. 1640 – Well Rehabilitation Assessment and Repair. As a result, in February 2015, five (5) well rehabilitation contractors were prequalified based on work experience, minimum insurance requirements, proper contractor's license, bonding capacity, experience level, and adequate staffing. Staff recently requested rehabilitation proposals from these prequalified contractors to execute WSE's recommendations for EPA 111. Best was responsive and provided the lowest quotation in the amount of $119,170.00. A copy of Best's proposal detailing scope and budget is attached for reference.

FISCAL IMPACT:

Staff is recommending that this expenditure of $119,170.00 be approved from existing funds in the Fiscal Year 2016/2017 Capital Budget under *Annual R/R – EPA Extraction Well (Muscoy)* with available funding of approximately $285,000.00. Rehabilitation of EPA 111 is 100 percent reimbursable through the AIG commutation account.

RECOMMENDATION:

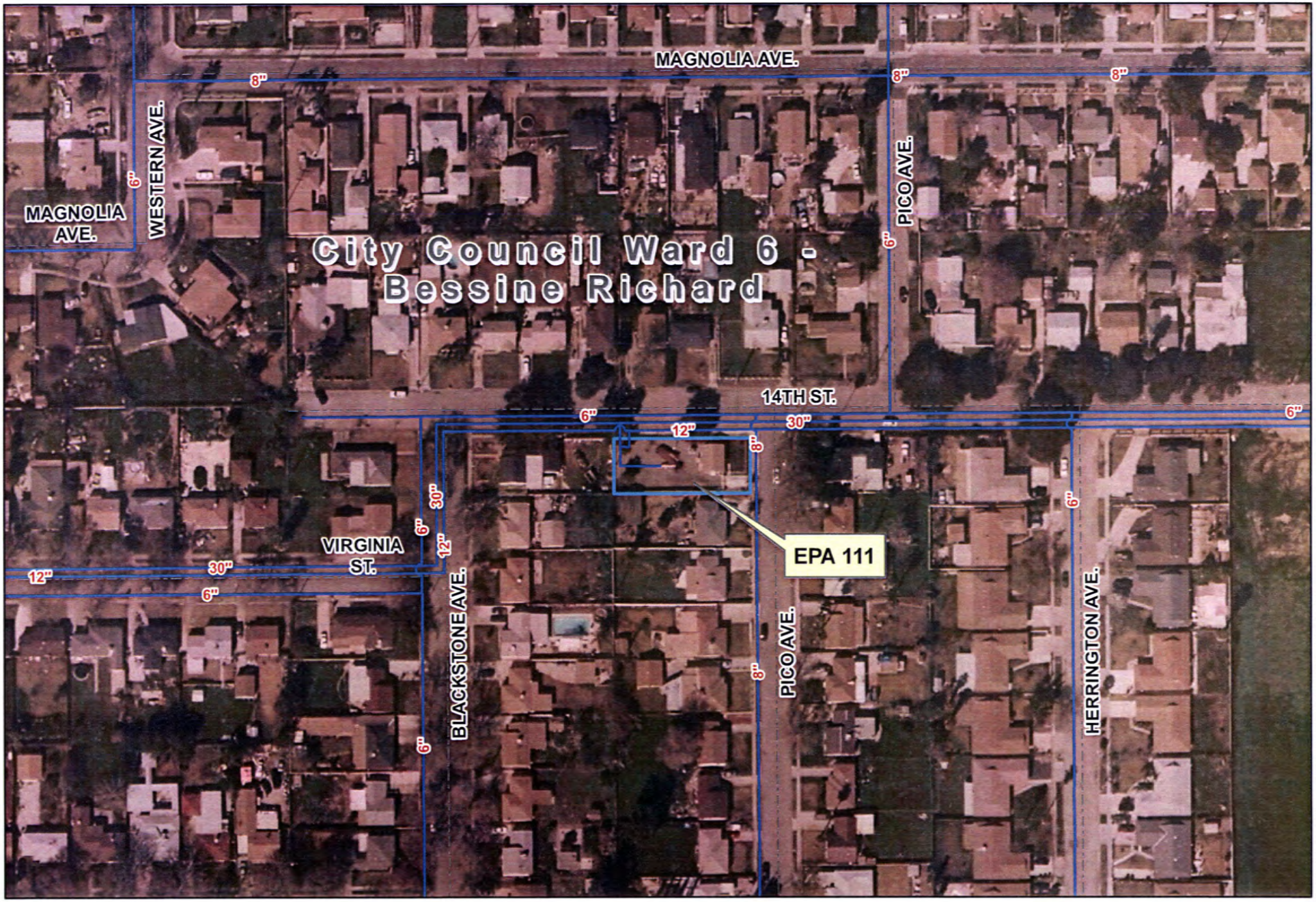
Staff recommends that the Board of Water Commissioners make the following motion:

- **Approve the rehabilitation of EPA 111 by Best Pump and Drilling, Inc. in the amount of $119,170.00.**

Respectfully submitted,

Miguel J. Guerrero, P.E.
Director of Water Utility

MJG:swd
Attach.



SBMWD EPA WELL 111

Document Path: K:\Projects\Maps\ZA_mxd\Exhibits\BOWC_Projects_EPA111.mxd

"Our Goal is in Our Name"

May 25, 2016

Michael Garland
San Bernardino Municipal Water Department
195 North D Street
San Bernardino, CA 92401
909-384-5087

Subject: EPA Well 111 – Chemical Treatment Well Rehabilitation

Best Drilling and Pump, Inc. is pleased to provide the following proposal to chemically treat and rehabilitate San Bernardino Municipal Water Department's EPA Well 111 located at 1396 N. Pico Avenue in San Bernardino, CA. The scope of work proposed herein follows a three phase program based on analytic results of fluid and scale samples and treatment recommendations by Water Systems Engineering, Inc.

- Mobilization and demobilization of all tooling, equipment, material and personnel required to nylon brush, chemically treat and disinfect 700' x 20" potable water well
    - Pump rig, crew and fuel
    - Chemical / airlift trailer and hoses
    - 450CFM compressor and fuel
    - 700' x 5" tremie pipe
    - (2) 21,000 gallon containment tanks
    - 20" nylon brushes
    - 20" dual swab tool
    - NPDES treatment equipment
    - Treatment fluids
        - 600 gallons of NW-120 Phosphoric Acid (75% strength)
        - 200 gallons of NW-310 Biodispersant
        - 80 gallons of NW-410 Chlorine Enhancer
        - 55 gallons of Sodium Hypochlorite 12.5%
- Phase 1: Nylon-brush Well
    - Brush the well casing and screened zones to loosen scale and biomass accumulations
    - Airlift to remove disrupted material and purge pre-existing fill from the well
- Phase 2: Chemical Treatment
    - Prepare a chemical solution comprised of 7% NW-120 phosphoric acid, 2.5% NW-310 biodispersant and potable water

- Introduce the chemical solution evenly into the well via tremie pipe and dual swab tool
- Swab and surge the entire well column focusing primarily on the screened zone and lower extension of the well
- Airlift the total chemical solution and dislodged material from the well until the water column is clear and neutral
- Neutralize all chemical fluids airlifted from the well prior to discharging to waste

- Phase 3: Disinfection
  - Prepare a chlorine solution comprised of 80 gallons of NW-410 chlorine enhancer, 55 gallons of sodium hypochlorite 12.5% and 20,000 gallons potable water
  - Introduce the chlorine solution evenly into the well via tremie pipe and dual swab tool
  - Allow the chlorine solution to remain downhole for a 12 hour period
  - Airlift the total chlorine solution from the well until the water column is clear and neutral
  - Neutralize all chlorinated fluid and dislodged material from the well prior to discharging to waste
  - Video survey the well

Comments:

The proposed treatment schedule requires on-site access to approximately 30,000 gallons of potable water

1640 Pellisier, Colton, CA. 92324
Telephone: 951-684-1952 Fax: 951-684-3852 Email: TGarcia@BestDrillingandPump.com
Contractor No. C-57, 826672

Quotation Form

Customer: San Bernardino Municipal Water Department
195 North D Street
San Bernardino, CA 92401
(909) 384-5087

Job Number: 20859
Contact: Michael Garland
Date: 5/25/2016

Well or Description of Work: EPA Well 111 - Rehabilitation - Phase 1
Nylon-brush & Airlift Well

Terms: Due Upon Receipt

Quantity	Description	Price	Unit	Total
1	Mobilization and demobilization of all tooling, equipment, material and personnel required to nylon-brush and airlift 700' x 20" well	$2,750.00	L.S.	$2,750.00
1	Nylon-brush approximately 700' x 20' well	$7,620.00	L.S.	$7,620.00
1	Airlift loosened material and preexisting fill well	$5,370.00	L.S.	$5,370.00
		TOTAL		**$15,740.00**

If above referenced quote meets your approval, please sign below and return.

Authorized Signature: _____ **Title:** _____

Date: _____ **Purchase Order No.:** _____

Best Drilling and Pump, Inc. does not assume liability for pump/motor suppliers delays in manufacturing, testing or deliveries. Best Drilling and Pump is not responsible for labor or rig cost associated with replacement of manufactures equipment failures or warranty replacement.
Best does not take any responsibility for any damage to the well casing, screen, gravel pack, pump equipment, motors, valves, pump house and any other damage arising in the course of any well work including but not limited to: inspection, cleaning, repairing, chemical treatment, brushing, bailing, or replacement of any new or defective parts manufactured or installed by others.

1640 Pellisier Road, Colton, CA 92324
Telephone: (951) 684-1952 Fax: (951) 684-3852 Email: TGarcia@BestDrillingandPump.com
Contractor No.: C-57, 826672

Quotation Form

Customer: San Bernardino Municipal Water Department
195 North D Street
San Bernardino, CA 92401
(909) 384-5087

Job Number: 20859
Contact: Michael Garland
Date: 5/25/2016

Well or Description of Work: EPA Well 111 - Rehabilitation - Phase 2
Chemical Treatment

Terms: Due Upon Receipt

Quantity	Description	Price	Unit	Total
1	Mobilization and demobilization of all tooling, equipment, material and personnel required to chemically treat, swab and airlift 700' x 20" well	$2,750.00	L.S.	$2,750.00
1	Prepare and introduce chemical solution consisting of: 600 gallons NW-120 Phosphoric Acid (75% strength) 200 gallons NW-310 Biodispersant 2,000 gallons potable water (for blending)	$8,520.00	L.S.	$8,520.00
1	Swab and surge chemical solution into perforated interval	$7,620.00	L.S.	$7,620.00
1	Airlift total chemical solution from well until neutral	$5,370.00	L.S.	$5,370.00
		TOTAL		$24,260.00

If above referenced quote meets your approval, please sign below and return.

Authorized Signature: _____ **Title:** _____

Date: _____ **Purchase Order No.:** _____

Best Drilling and Pump, Inc. does not assume liability for pump/motor suppliers delays in manufacturing, testing or deliveries. Best Drilling and Pump is not responsible for labor or rig cost associated with replacement of manufactures equipment failures or warranty replacement.
Best does not take any responsibility for any damage to the well casing, screen, gravel pack, pump equipment, motors, valves, pump house and any other damage arising in the course of any well work including but not limited to: inspection, cleaning, repairing, chemical treatment, brushing, bailing, or replacement of any new or defective parts manufactured or installed by others.

1640 Pellisier Road, Colton, CA 92324
Telephone: (951) 684-1952 Fax: (951) 684-3852 Email: TGarcia@BestDrillingandPump.com
Contractor No.: C-57, 826672

Quotation Form

Customer: San Bernardino Municipal Water Department
195 North D Street
San Bernardino, CA 92401
(909) 384-5087

Job Number: 20859
Contact: Michael Garland
Date: 5/25/2016

Well or Description of Work: EPA Well 111 - Rehabilitation - Phase 3
Disinfection

Terms: Due Upon Receipt

Quantity	Description	Price	Unit	Total
1	Mobilization and demobilization of all tooling, equipment, material and personnel required to disinfect 700' x 20' well	$2,750.00	L.S.	$2,750.00
1	Prepare and introduce disinfection solution consisting of: 80 gallons NW-410 Chlorine Enhancer 55 gallons Sodium Hypochlorite 12.5% 20,000 gallons potable water (for blending)	$14,435.00	L.S.	$14,435.00
1	Airlift total disinfection solution from well until neutral	$10,745.00	L.S.	$10,745.00
1	Video Survey	$1,200.00	EA	$1,200.00
		TOTAL		$29,130.00

If above referenced quote meets your approval, please sign below and return.

Authorized Signature: _____ **Title:** _____

Date: _____ **Purchase Order No.:** _____

Best Drilling and Pump, Inc. does not assume liability for pump/motor suppliers delays in manufacturing, testing or deliveries. Best Drilling and Pump is not responsible for labor or rig cost associated with replacement of manufactures equipment failures or warranty replacement.
Best does not take any responsibility for any damage to the well casing, screen, gravel pack, pump equipment, motors, valves, pump house and any other damage arising in the course of any well work including but not limited to: inspection, cleaning, repairing, chemical treatment, brushing, bailing, or replacement of any new or defective parts manufactured or installed by others.

1640 Pellisier Road, Colton, CA 92324
Telephone: (951) 684-1952 Fax: (951) 684-3852 Email: TGarcia@BestDrillingandPump.com
Contractor No.: C-57, 826672

Quotation Form

Customer: San Bernardino Municipal Water Department
195 North D Street
San Bernardino, CA 92401
(909) 384-5087

Job Number: 20859
Contact: Michael Garland
Date: 5/25/2016

Well or Description of Work: EPA Well 111 - Rehabilitation - Chemical Products

Terms: Due Upon Receipt

Quantity	Description	Price	Unit	Total
1	NW-120 Phosphoric Acid (75% strength) - 600 gallons	$28,615.00	EA	$28,615.00
1	NW-310 Biodispersant - 200 gallons	$21,425.00	EA	$21,425.00
		TOTAL		$50,040.00

If above referenced quote meets your approval, please sign below and return.

Authorized Signature: _____ **Title:** _____

Date: _____ **Purchase Order No.:** _____

Best Drilling and Pump, Inc. does not assume liability for pump/motor suppliers delays in manufacturing, testing or deliveries. Best Drilling and Pump is not responsible for labor or rig cost associated with replacement of manufactures equipment failures or warranty replacement.
Best does not take any responsibility for any damage to the well casing, screen, gravel pack, pump equipment, motors, valves, pump house and any other damage arising in the course of any well work including but not limited to: inspection, cleaning, repairing, chemical treatment, brushing, bailing, or replacement of any new or defective parts manufactured or installed by others.

1640 Pellisier Road, Colton, CA 92324
Telephone: (951) 684-1952 Fax: (951) 684-3852 Email: TGarcia@BestDrillingandPump.com
Contractor No.: C-57, 826672

Water Systems Engineering Inc.

May 13, 2016

Tim Garcia
Best Drilling and Pump, Inc.
1640 Pellisier Rd
Colton, CA 92324

Re: San Bernardino Municipal Water Department, EPA well No.111
WSE Lab Report No. 20502

Tim:

Based on the analytic results and reported loss of production capacity, combined chemical and mechanical cleaning of Well No. 111 is recommended. Additionally, a multiple-volume, enhanced chlorination effort is advised post-treatment in an effort to further reduce the potential for a return of microbial activity within the well casing.

Following cleaning of the well, flushing of associated piping, water storage and treatment, and associated systems is advised due to the iron bacteria issues. Any areas subjected to prolonged storage of water or areas with restricted or disrupted flow, may require physical and chemical cleaning to reduce accumulations of fouling that have developed.

Due to the current and historical corrosion potential, past structural modifications, and complex nature of the identified fouling, a video survey of the well is recommended prior to cleaning efforts. The goal of the video survey is to identify areas of heavier fouling which would require additional mechanical and chemical efforts, as well as to evaluate the corrosion potential in the well.

The results of the video survey will dictate adjustments to the mechanical and chemical cleaning process and should be reviewed prior to final development of the recommended treatment procedure.

Begin by pulling the submersible pump, column pipe, and associated equipment from the well. Evaluate the column pipe for signs of corrosion or material degradation which could be addressed or replaced during the time the well is off-line.

Brush the well casing and screened zones in an effort to knock loose scale and biomass accumulations. Use of an appropriate sized nylon brush (19.75-in) is recommended to reduce physical damage to the well and potential development of additional reactive surfaces. Once the entire well has been brushed, remove the disrupted material and pre-existing fill from the bottom of the well. Bail or airlift in an effort to purge the disrupted material from the well. Evacuate the material until visual turbidity has lessened and the conductivity has returned to a near normal background level (approximately 700 µS/cm).

Once mechanical pretreatment and subsequent evacuation is complete, a combined chemical and mechanical cleaning process is advised.

Water Systems Engineering, Inc. **An Investigative Water Consulting & Design Laboratory**
3201 Labette Terrace, Ottawa, Kansas 66067 ♦ phone: 785.242.6166 fax:785.242.9411

Prepare a chemical solution comprised of 7% NW-120 phosphoric acid (75% strength), 2.5% NW-310 biodispersant, and potable water for introduction into the well. Phosphoric acid is strong, slow reacting mineral acid that is recommended to target the heavy concentration of iron scale identified within the well without jeopardizing the well structure. Johnson Screen's NW-310 biodispersant is recommended as a polymeric enhancer that improves the activity of acids towards mineral scale while improving the disruption and penetration of biomass. Additionally, the NW-310 aids in the removal of the disrupted materials following treatment. Derivation from these recommended chemicals is not advised. Any changes should be discussed to account for the water chemistry and limitation of the products towards the identified types of fouling as well as the corrosion potential.

Blend the chemicals on the surface and introduce evenly into the well. Surge the introduced chemicals using a surge bock which compliments the inner diameter of the well. Surge the entire well column over a twenty-four hour period focusing a larger percentage of the time on screened zone and lower extension of the well. During treatment, periodically monitor the activity of the chemical solution, maintaining a pH below 3 during the treatment process.

For blending of the acid treatment solution, mix the chemicals in this order: water, acid, biodispersant. Mix lightly. If during acid treatment, the downhole pH rises to a level above 3.0, add additional acid and water at the rate of 15 gallons of acid and 30 gallons water. No additional dispersant should be needed.

Once surging is complete, thoroughly pump the well until the pH has returned to normal (6.5 or greater), the conductivity has returned to normal levels (approximately 700 µm or µS/cm), visible turbidity is zero, and the well is pumping clear water. Collect and neutralize the evacuated material above ground according to state and local regulations.

Based on the submitted well data a targeted treatment volume of 10,000 gallons was calculated. Based on this volume, the recommended chemicals would include:

NW-120 Phosphoric Acid (75% strength)	600 gallons
NW-310 Biodispersant	200 gallons
Potable water (for blending)	2,000 gallons

Once the well has been thoroughly evacuated, disinfection efforts can begin. Based on the observed levels of biofouling, use of alternative disinfection chemicals such as chlorine dioxide, calcium hypochlorite, or hydrogen peroxide are not advised. Chlorination should utilize sodium hypochlorite in a pH adjusted chlorination treatment of a 350 ppm chlorine level in a pH range of 6.5 to 7.0. The volume of the disinfection solution should be equivalent to 3 times the standing well volume within the screened zone. This larger volume is utilized to flood the borehole with the disinfection solution in order to increase the effectiveness of treatment as well as the effective treatment area. Utilization of the NW-410 product, an NSF approved chlorine enhancing chemical is strongly encouraged to aid in both effective disinfection as well as to increase the treatment area.

The disinfection solution should be blended above ground and introduced into the well by a tremie pipe. Efforts should be made to evenly disperse the disinfection solution evenly throughout the well and multiple screened zones. Once the solution is placed into the well, it should be lightly agitated with a single disc surge block or similar tool to supply agitation and dispersion throughout the well column and screened zone.

In preparing the chlorine treatment above ground, mix the chemicals in this order: water, chlorine enhancer, check the pH (not below 5.5), add chlorine. Mix lightly. During disinfection, if the chlorine residual has dropped to below 100 ppm, add additional sodium hypochlorite in increments of 2.5 gallons to raise it to that level.

Allow the chlorine solution to remain downhole overnight. Following this period, begin evacuation of the well from the bottom, working upwards, until a minor residual (~ 50 ppm) is present and all debris has been evacuated from the well. At this time, the permanent pump and column pipe can be placed back into the well and utilized to purge the remaining chlorine solution from the well.

Evacuated material should be collected above ground in a storage tank, neutralizing rapidly with sodium bisulfate or sodium thiosulfate, and dispose of according to local and state regulations. Based on the well data and a targeted disinfection volume of 20,000 gallons, the chlorination treatment should incorporate the following chemicals:

Sodium Hypochlorite (12% active)	55 gallons
NW-410 chlorine enhancer	80 gallons
Potable Water	20,000 gallons

Following treatment efforts, the well should be returned to an active operating schedule as soon as possible.

If you have any questions regarding the analysis or these recommendations, please feel free to contact our office.

Michael Schnieders, PG, PH-GW
Hydrogeologist

Water Systems Engineering, Inc.

Date: May 13, 2016

Lab Report No. 20502

Tim Garcia
Best Drilling and Pump, Inc.
1640 Pellisier Rd
Colton, CA 92324

Project Description: San Bernardino Municipal Water Department, EPA well No.111
Samples dated 4/25/16, Complete Well Profile (1), Deposit Analyses (2)
P.O. #JN 20859-GEOPHYSICAL-2-TG

Test Description:

The Complete Well Profile analysis is designed for comparative analysis of two samples, typically one static and one pumping sample. The Complete Well Profile utilizes a series of inorganic chemical and microbiological tests to identify fouling and corrosion issues with potential impacts on the operation of the sampled well. The tests include a number of inorganic chemical parameters such as pH, total dissolved solids/conductivity, hardness, alkalinity, oxidation reduction potential (ORP), bicarbonate, carbonates, silica, sodium, potassium, chloride, iron, manganese, phosphate, nitrate, sulfate, and total organic carbon (TOC). Biological assessment is designed to quantify the total bacterial population, identify two dominant populations of bacteria, assess anaerobic conditions, and identify the presence of iron related bacteria and sulfate reducing organisms. Also included are tests for Adenosine triphosphate (ATP), heterotrophic plate count (HPC), total coliform and E. coli coliform, and a microscopic evaluation.

Testing Procedures:

All laboratory testing procedures are performed according to the guidelines set forth in *Standard Methods for the Examination of Water and Wastewater* as established by the American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF). Corrosion analyses are performed in accordance with the guidelines as set forth by the National Association of Corrosion Engineers (NACE). In general, these methods are approved by both the Environmental Protection Agency (EPA) and AWWA for the reporting of water and/or wastewater data.

Sample collection and shipment is the responsibility of the customer, performed according to protocol and procedures defined by the laboratory in advance of the sampling event with regards to the specific project and nature of the problem.

Disclaimer:

The data and interpretations presented are based on an evaluation of the samples and submitted data. Conclusions reached in this report are based upon the data available at the time of submittal and the accuracy of the report depends upon the validity of information submitted. Any recommendations presented are based on laboratory and field evaluations of similar fouling occurrences within potable water systems. Further investigative efforts, such as efficiency testing, site inspection, video survey, or other evaluation methods may offer additional insight into the system's condition and the degree of fouling present.

Client: Best Drilling and Pump
Date: May 13, 2016
Lab Report No. 20502

Re: San Bernardino Municipal Water Department, EPA well No.111
Samples dated 4/25/16; Complete Well Profile (1), Deposit Analyses (2)

ND - Not Detected NA - Not Applicable * as $CaCO_3$	**EPA well No.111** **350' 10:08 AM** mg/l	**EPA well No.111** **600'** mg/l	**Detection Limits**
pH Value	7.25	7.46	NA
Phenolphthalein Alkalinity*	ND	ND	4 mg/l
Total Alkalinity*	232	228	4 mg/l
Hydroxide Alkalinity	ND	ND	4 mg/l
Carbonate Alkalinity	ND	ND	4 mg/l
Bicarbonate Alkalinity	232	228	4 mg/l
Total Dissolved Solids	456	354	1.0 mg/l
Conductivity (µm or µS/cm)	634	491	NA
ORP (mV)	251.6	248.7	NA
Langelier Saturation Index (at 16°C)	- 0.18	- 0.06	NA
Total Hardness*	268	224	4 mg/l
Carbonate Hardness	232	224	4 mg/l
Non Carbonate Hardness	36	ND	4 mg/l
Calcium*	216	172	4 mg/l
Magnesium*	52	52	4 mg/l
Sodium (as Na)	19.80	17.10	0.02 mg/l
Potassium (as K)	4.10	3.70	0.1 mg/l
Phosphate (as PO_4)	0.13	0.25	0.06 mg/l
Chlorides (as Cl)	24.4	18.4	2 mg/l
Nitrate (Nitrogen)	6.8	3.4	0.3 mg/l
Chlorine (as Cl)	ND	ND	0.02 mg/l
Dissolved Iron (as Fe^{2+})	ND	ND	0.02 mg/l
Suspended Iron (as Fe^{3+})	ND	ND	0.02 mg/l
Iron Total (as Fe)	ND	ND	0.02 mg/l
Iron (resuspended)	0.38	0.16	0.02 mg/l
Copper (as Cu)	ND	ND	0.04 mg/l
Manganese (as Mn)	ND	ND	0.1 mg/l
Sulfate (as SO_4)	60	30	2 mg/l
Silica (as SiO_2)	19.9	21.5	1.0 mg/l
Tannin/Lignin	ND	ND	0.1 mg/l
Total Organic Carbon (C)	1.3	3.1	0.0 mg/l

Biological Analysis:

	EPA well No.111 350' 10:08 AM	EPA well No.111 600'	Detection Limit
Plate Count (colonies/ml)	790	>1,500	NA
Anaerobic Growth (%)	10	10	NA
Sulfate Reducing Bacteria	Negative	Negative	NA
Fe/Mn Oxidizing Bacteria	Positive	Positive	NA
ATP (cells per ml) Initial	82,000	778,000	NA
ATP (cells per ml) 24 Hour	498,000	1.1 Million	NA
Total Coliform	Negative	Negative	NA
E. Coli	Negative	Negative	NA
Bacterial Identification	*Pseudomonas resinovorans*	*Comamonas kerstersii*	NA
Bacterial Identification	*Gallionella*	*Gallionella*	NA

Microscopic Evaluation:

350': Moderate visible bacterial activity, minor amount of crystalline debris, low to moderate iron oxide, heavy iron oxide entrained biomass with large number of Gallionella.

600': Low visible bacterial activity, moderate amount of crystalline debris, trace of protozoa, low to moderate iron oxide, minor iron oxide entrained biomass with trace of Gallionella.

Deposit Starting @ 350' end @ 300':

Figure 1: Deposit as received

Figure 2: Deposit at 30x magnification

Microscopic Evaluation:

Moderate visible bacterial activity, trace of crystalline debris, heavy iron oxide, moderate iron oxide entrained biomass with low number of Gallionella.

Biological Analysis:

	Deposit Sample 350'
Plate Count (colonies/ml)	>1,500
Sulfate Reducing Bacteria	Negative
Anaerobic Growth	<10%
Fe / Mn Oxidizing Bacteria	Positive
ATP (cells per ml)	1.1 Million
Bacterial Identification	*Pseudomonas aeruginosa*
Bacterial Identification	*Cupriavidus necator*
Bacterial Identification	*Gallionella*

Chemical Analysis Deposit @ 350':

Component	Percent of Total Mass
Organic biomass, moisture	12.61
Insoluble material	13.11
Dissolvable mass	74.28
Total	100 %

Component	Percent by Weight of Dissolvable Mass
Iron oxide	99.77
Manganese dioxide	0.23
Total	100.0%

Deposit Starting @ 600' end @ 550':

Figure 3: Deposit as received

Figure 4: Deposit at 30x magnification

Microscopic Evaluation:

Low to moderate visible bacterial activity, trace of crystalline debris, moderate iron oxide, minor iron oxide entrained biomass with low number of Gallionella.

Biological Analysis:

	Deposit Sample 600'
Plate Count (colonies/ml)	290
Sulfate Reducing Bacteria	Negative
Anaerobic Growth	<10%
Fe / Mn Oxidizing Bacteria	Positive
ATP (cells per ml)	527,000
Bacterial Identification	*Pseudomonas aeruginosa*
Bacterial Identification	*Cupriavidus necator*
Bacterial Identification	*Gallionella*

Chemical Analysis Deposit @ 600':

Component	Percent of Total Mass
Organic biomass, moisture	23.93
Insoluble material	11.41
Dissolvable mass	64.66
Total	100 %

Component	Percent by Weight of Dissolvable Mass
Iron oxide	99.75
Manganese dioxide	0.25
Total	100.0%

Observations and Interpretations:

Two sets of water and scale samples were collected from Well No. 111, one from 350-ft depth and the second from 600-ft depth. The samples were collected for analysis in an effort to evaluate current downhole conditions with regards to operation and maintenance of the well. It was reported that the well has seen a significant decrease in production since 2013.

Each of the Well No. 111 samples exhibited neutral pH values with elevated levels of total alkalinity. Total dissolved solids (TDS) and conductivity values fell within the moderate level with higher levels recorded in the 350-ft sample.

Calculation of the Langelier Saturation Index (LSI) yielded a negative value for both samples. Negative LSI values indicate an environment that is undersaturated with respect to calcium carbonate. Negative LSI values generally reflect a reduced potential for the development of carbonate scale and an increased likelihood of chemical corrosion occurring.

Iron, as evaluated in multiple forms, was not present in the dissolved or suspended form, however, resuspended iron was present. Resuspended iron accounts for both chemically and biologically mobilized iron. No manganese was detected in either sample.

Nitrate was present in each of the water samples with a higher value reported in the 350-ft sample. Nitrate within each of the samples fell below the established MCL of the US EPA National Primary Drinking Water Standard.

Silica, as SiO2, was present in each of the samples. Amorphous silica is used as an indication of sediment influence on the well, reflective of formation fines as well as filter pack material. Corresponding to the higher silica value in the 600-ft sample, a moderate amount of crystalline debris was noted during microscopic evaluation.

Total organic carbon (TOC) is the amount of carbon bound in an organic compound and is often used as a non-specific indicator of water quality and the potential for bacterial stimulation and biofouling. TOC was present in each of the water samples with a higher value reported in the 600-ft sample. The higher TOC corresponded with an increased level of microbial activity, as discussed in the following paragraphs.

Biological analysis of the Well No. 111 samples reported heavier occurrence of bacteria within the deeper portion of the casing (600-ft). Heterotrophic plate counts (HPC), a measure of the microbial response to the specific growth media, noted high growth in the 350-ft sample and an excessive level of growth in the 600-ft sample. Observations of visible biological activity were somewhat reversed, as noted in the microscopic evaluation, with a more active level reported in the 350-ft sample.

Adenosine triphosphate (ATP) testing, a means of quantifying the total bacterial population reported a very large value present in the 600-ft sample. As a point of reference, ATP values for an operating well exhibiting no issues typically fall within the range of 10,000 to 70,000 cells per milliliter (cpm). ATP values in excess of 100,000 cpm are of concern for biofouling. When subjected to stable, ideal environmental conditions, each of the samples exhibited strong growth over a 24-hour period.

Anaerobic growth, reported as a function of the total population, was limited in each of the Well No. 111 samples at ten percent. Testing for the presence of sulfate reducing bacteria (SRB)

was negative as well. The iron oxidizing bacteria Gallionella were identified in each of the water and deposit samples.

Testing for total coliform occurrence as well as E.coli specific coliforms was negative in each of the Well No. 111 samples.

Bacterial identification of the dominant species present in the water and scale samples from Well No. 111 reported a very diverse population of bacteria present. Consistent among the ID's was the presence of Gallionella and several species of slime forming bacteria.

Gallionella are naturally occurring, iron-oxidizing chemolithotrophic bacteria that have been identified in a variety of different aquatic habitats, including groundwater. Gallionella are a generally aerobic group of bacteria that utilize iron as an energy source and secrete an iron-oxy-hydroxide byproduct. This secretion is often responsible for accumulations of iron oxide in wells and piping systems.

Pseudomonas resinovorans is a gram-negative, soil bacterium that is commonly found in the lubricating oils of wood mills. *Pseudomonas resinovorans* produces a dense form of biomass allowing it to thrive in a variety of atmospheres. It has shown an affinity for degrading carbazole and as such may be used in bioremediation.

Comamonas kerstersii is an oxidase positive, gram-negative, highly motile soil bacterium, commonly found in the environment. Similar to *Pseudomonas,* these bacteria are known to produce excessive slime or biofilm as a means of nutrient capture.

Pseudomonas aeruginosa is a common bacterium found in soil, water, skin flora, and most man-made environments throughout the world. It thrives not only in normal atmospheres, but also in hypoxic atmospheres, and has thus colonized many natural and artificial environments. *Pseudomonas aeruginosa is considered an opportunistic pathogen,* causing infections, such as septicemia, in immuno-compromised patients who come into contact with large accumulations of the bacteria.

Cupriavidus necator is a gram-negative soil bacterium with a pronounced particularly dense biomass. *C. nectar* It can easily adapt between aerobic respiration or anaerobic respiration by denitrification of nitrate and/or nitrite to nitrogen gas.

Microscopic evaluation of the water samples noted low to moderate visible bacterial activity. Fluctuating amounts of crystalline debris and iron oxide were also reported as well as varying levels of iron oxide entrained biomass.

Dissolution and analysis of the deposit samples was conducted in an effort to identify the fouling mechanisms present. Each of the deposits were comprised of iron oxide, organic biomass, insoluble particulate, and minor amounts of manganese. The organic biomass component is not uncommon, reflective of biofilm that acts as a point of accumulation of precipitating solids and migrating sediment. The insoluble particulate components of each of the deposits reflect a mixture of very hard iron oxide and formation sediment.

Dissolution of each of the deposits was difficult, and very weak effervescence was noted. The deposits appear to reflect accumulations of iron generated from corrosion of the well structure, oxidized and precipitating within the well. Areas of increased oxidation such as active pumping zones, the water level, and the area around the pump could see heavier accumulations of iron.

The analysis shows several areas of concern that could impact well operation and efficiency. Chiefly among the areas of concern is the large microbial population and high level of biodiversity present. Per the sample results, it appears that the lower section of the well has a higher rate of microbial congestion which is often a reflection of biofouling potential. In addition, each of the samples, including the water and deposits, contained iron bacteria. Iron bacteria are problematic in wells, impacting flow and pump operation. Additionally, iron bacteria issues often promulgate beyond the well, causing issues with migration of the bacteria and the mobilization of iron.

Recommendations for cleaning and disinfection of the well are presented under separate cover. If you have any questions regarding the analysis, interpretations, or recommendations, please feel free to contact our office.

Michael Schnieders, PG, PH-GW
Hydrogeologist

CITY OF SAN BERNARDINO
MUNICIPAL WATER DEPARTMENT

BOARD OF WATER COMMISSIONERS
STAFF REPORT

RECEIVED
JUL 11 2016
@ for SKA
GENERAL MANAGER

TO: Stacey R. Aldstadt, General Manager

FROM: Jennifer L. Shepardson, Director of Environmental & Regulatory Compliance

SUBJECT: **PROPERTY INSURANCE RENEWAL - FISCAL YEAR (FY) 2016/2017**

DATE: July 8, 2016

BACKGROUND:

On July 31, 2016, the City of San Bernardino Municipal Water Department will need to renew its property insurance coverage for fiscal year 2016/2017, covering approximately $330,262,542 in Water and Sewer Fund real and personal property. The renewal carries an annual premium of $536,279, which is a decrease of approximately 7.6% from last year's premium.

Due to years of excellent customer service and experience working with the company, Water Department staff continues to work with Marsh Risk & Insurance Services (Marsh) to find the most appropriate insurance coverage for Department assets. Although the coverage plan Marsh has identified and recommended for the Department shows a decrease in premiums from last year's policies, there has not been a reduction in coverage. All coverage limits and deductibles remain the same as those quoted for the Department's FY 2015/2016 property, with one exception, decontamination cost coverage limit decreased from $1,000,000 to $25,000. Additionally, the coverage enhancements provided in the expiring program for equipment breakdowns; crisis management; damage due to mold fungus or mildew; research and development costs; and well re-drilling costs have again been included in the proposed program at no additional costs.

Marsh's commission fee increased by 3% over the expiring program's commission, making the total fee $51,500 for brokerage services associated with property insurance coverage. This is the first increase in property coverage brokerage fees in 3 years.

Funds have been budgeted to cover the cost of the proposed property coverage renewal. These funding accounts are as follows:

100-2510-560-5620	Property-Insurance	$237,500
200-4090-560-5620	Property-Insurance	285,000
300-5025-540-5620	Property Insurance	47,500
Total		$570,000

RECOMMENDATION:

- **Approve the annual property insurance renewal premium of $536,279; and Authorize the General Manager to bind the renewal policies effective August 1, 2016.**

Respectfully submitted,

Jennifer L. Shepardson
Director of Environmental of Environmental & Regulatory Compliance

City of San Bernardino Municipal Water Department
Property & DIC Insurance Proposal
July 31, 2016 - 2017

Coverage Comparison

	Expiring Program 7/31/15 - 7/31/16	Renewal Option 1 7/31/16 - 7/31/17	% Change	Renewal Option 2 7/31/16 - 7/31/17
Property All-Risk				
Insurer	Lexington Ins. Company	Lexington Ins. Company		Lexington Ins. Company
Admitted or Non-Admitted	Non-Admitted	Non-Admitted		Non-Admitted
Carrier Rating	A XV	A XV		A XV
LIMITS				
Policy Limit per Occurrence	$170,000,000	$170,000,000		$170,000,000
Earth Movement (specified locations)	$5,000,000	$5,000,000		$5,000,000
Earth Movement Sprinkler Leakage	Policy Limit	Policy Limit		Policy Limit
Flood	$30,000,000	$30,000,000		$30,000,000
Flood High Hazard Zone	$10,000,000	$10,000,000		$10,000,000
Named Wind/Storm	Policy Limit	Policy Limit		Policy Limit
Business Interruption	Policy Limit	Policy Limit		Policy Limit
Extra Expense	Policy Limit	Policy Limit		Policy Limit
ADDITIONAL PROGRAM SUBLIMITS				
Accounts Receivable	$100,000,000	$100,000,000		$100,000,000
Architects and Engineering Fees	$250,000	$250,000		$250,000
Change in Temperature/Spoilage	$1,000,000	$1,000,000		$1,000,000
Civil or Military Authority	$10,000,000 60 Days	$10,000,000 60 Days		$10,000,000 60 Days
Contingent Business Interruption	$1,000,000	$1,000,000		$1,000,000
Course of Construction	Policy Limit	Policy Limit		Policy Limit
Crisis Management	$250,000	$250,000		$250,000
Debris Removal	25% of the loss or $10,000,000, whichever is less	25% of the loss or $10,000,000, whichever is less		25% of the loss or $10,000,000, whichever is less
Decontamination Cost	$1,000,000	$250,000		$250,000
Demolition & Increased Cost of Construction:				
A: Undamaged Portion	Policy Limit	Policy Limit		Policy Limit
B: Demolition	$10,000,000	$10,000,000		$10,000,000
C: Compliance with the Law	$10,000,000	$10,000,000		$10,000,000
Electronic Data & Media	$1,000,000	$1,000,000		$1,000,000
Equipment Breakdown	$100,000,000	$100,000,000		$100,000,000
Errors & Omissions	$2,500,000	$2,500,000		$2,500,000
Expediting Expense	$2,500,000	$2,500,000		$2,500,000
Extended Period of Indemnity	365 days	365 days		365 days
Fine Arts	$1,000,000	$1,000,000		$1,000,000
Fire Fighting Materials/Expenses	$250,000	$250,000		$250,000
Fungus, Mold or Mildew, resultant damage	$250,000	$250,000		$250,000
Hazardous Substance	$1,000,000	$1,000,000		$1,000,000
Ingress/Egress	$10,000,000 60 Days	$10,000,000 60 Days		$10,000,000 60 Days
Leasehold Interest	Policy Limit	Policy Limit		Policy Limit
Limited Pollution (Annual Aggregate)	$100,000	$100,000		$100,000
Newly Acquired Property	$10,000,000 120 Days	$10,000,000 120 Days		$10,000,000 120 Days
Off-Premises Service Interruption	$5,000,000	$5,000,000		$5,000,000
Operational Testing	$1,000,000	$1,000,000		$1,000,000
Ordinary Payroll	365 Days	365 Days		365 Days
Professional Fees	$250,000	$250,000		$250,000
Research & Development	$250,000	$250,000		$250,000
Soft Costs	$1,000,000	$1,000,000		$1,000,000
Terrorism	Available with additional premium	Available with additional premium $10,839		Available with additional premium $10,839
Transit	$1,000,000	$1,000,000		$1,000,000
Unnamed Locations	$10,000,000	$10,000,000		$10,000,000
Valuable Papers	$5,000,000	$5,000,000		$5,000,000
Well Redrilling	$5,000,000	$5,000,000		$5,000,000

City of San Bernardino Municipal Water Department
Property & DIC Insurance Proposal
July 31, 2016 - 2017

Coverage Comparison

	Expiring Program 7/31/15 - 7/31/16	Renewal Option 1 7/31/16 - 7/31/17	% Change	Renewal Option 2 7/31/16 - 7/31/17
DEDUCTIBLES				
Equipment Breakdown / Boiler and Machinery	$25,000	$25,000		$25,000
Earth Movement	5% PUI / $100,000 min	5% PUI / $100,000 min		5% PUI / $100,000 min
Flood	$100,000	$100,000		$100,000
High Hazard Flood	$500,000 Bldg $500,000 Contents $100,000 Time Element	$500,000 Bldg $500,000 Contents $100,000 Time Element		$500,000 Bldg $500,000 Contents $100,000 Time Element
Windstorm or Hail	$25,000 except 5% / $250,000 min for Named Storm	$25,000 except 5% / $250,000 min for Named Storm		$25,000 except 5% / $250,000 min for Named Storm
Off Premises Service Waiting Period	24 hours; 5 mile radius	24 hours; 5 mile radius		24 hours; 5 mile radius
All Other Losses	$25,000	$25,000		$25,000
AVERAGE RATE				
Total Insurable Values	$328,769,070	$330,262,542	0%	$330,262,542
Average Rate (Including Commission)	0.1122	0.1011	-10%	0.1011
Average Rate (Excluding Commission)	0.0961	0.0865	-10%	0.0865
PROGRAM COST				
Premium (Including Commission) - 25% minimum earned	$354,650	$320,661		$320,661
Terrorism	$0	$0		$0
Surplus Lines Taxes & Fees	$11,349	$10,261		$10,261
Engineering Fee	$3,000	$3,000		$3,000
Total Cost (including Commission)	**$368,999**	**$333,922**		**$333,922**
15% Commission	**$53,198**	**$48,099**		**$48,099**
Total Cost (excluding Commission)	**$315,801**	**$285,823**		**$285,823**
DIC Including Earth Movement				
Earth Movement TIV (specified locations)	$299,900,141	$301,400,140	1%	$301,400,140
Limit	ICW - $5,000,000 xs $5,000,000 - $90,000 Endurance - $10,000,000 xs $10,000,000 - $84,000 ICW - $10,000,000 xs $20,000,000 - $65,000	Aspen - $5,000,000 xs $5,000,000 - $80,000 Vikco/Allied World - $10,000,000 xs $10,000,000 - $80,000 LIU - $10,000,000 xs $20,000,000 - $60,000		Aspen - $5,000,000 xs $5,000,000 - $80,000 Vikco/Allied World - $10,000,000 xs $10,000,000 - $80,000 ICW - $10,000,000 xs $20,000,000 - $65,000
Total Insurable Earth Movement Values	$299,900,141	$301,400,140		$301,400,140
Average Rate (Including Commission)	0.0806	0.0755	-6%	0.0765
Average Rate (Excluding Commission)	0.0686	0.0660	-4%	0.0664
Premium (Including Commission)	$239,000	$220,000		$225,000
Terrorism	Optional	Optional		Optional
Surplus Lines Taxes & Fees	$2,688	$7,056		$5,136
Policy Fees	$0	$500		$500
Total Cost (including Commission)	$241,688	$227,556		$230,636
Commission	$35,850	$28,600		$30,550
Total Cost (excluding Commission)	$205,838	$198,956		$200,086

City of San Bernardino Municipal Water Department
Property & DIC Insurance Proposal
July 31, 2016 - 2017

Coverage Comparison

	Expiring Program 7/31/15 - 7/31/16	Renewal Option 1 7/31/16 - 7/31/17	% Change	Renewal Option 2 7/31/16 - 7/31/17
Total Property & DIC Premium (Excluding Commission)	**$521,639**	**$484,779**		**$485,909**
Marsh Compensation	**$50,000**	**$51,500**		**$51,500**
Combined NET Total Cost	**$571,639**	**$536,279**		**$537,409**
Average Rate (Total Combined Cost)	0.1739	0.1624		0.1627
Rate Change Renewal vs Expiring		-6.6%		-6.4%

NOTES: Quote from Evanston for an additional DIC layer $10m xs $30m at $40,000 premium plus $1,280 Surplus Lines Taxes & Fees.

City of San Bernardino Municipal Water Department
Property & DIC Insurance Proposal
July 31, 2016 - 2017

Marketing Summary

INSURANCE COMPANY	UNDERWRITER / WHLS BROKER	PHONE #	STATUS	COVERAGE	COMMENTS	ISSUING PAPER
Lexington	Bryan Angley	213-689-2723	QUOTED	ALL RISK	Quoted $170M (up from $150M) for $320,661 + $10,839 TRIA =	NON ADMITTED
Arrowhead	Randy Gehres		DECLINED	DIC	Needing additional information.	NON ADMITTED
Beazley	Sylvia Hammond	213-228-7725	QUOTED	DIC	Quoted Earth Movement 10 x 30 for$50K annual. Various Lloyd's syndicates. Waiting for formalized	NON ADMITTED
Catalytic Risk	Melissa Forbes	424-236-4305 Cell 818-414-4409	INDICATION	DIC	DIC incl EM/Ord Law; 5% PUI w/ $25K MPO / TIV #301,400,139 Option 1) 10m x 20m for $110k -	NON ADMITTED
Endurance Incumbent 10 x 10	Tamar Tavitian	213-270-7048	INDICATION	DIC	Can offer 50% of 10M xs 10M for $84,420 layer	NON ADMITTED
Insurance Company of the West Incumbent 5 x 5 and 10 x 20	Dan Froistad	858-350-2728	QUOTED	DIC	5 x 5 for $95k annual premium; and 10 x 20 for $65K annual premium.	ADMITTED
WHOLESALE MARKETS						
Arch Specialty	Cyndi Marty @ RT-Specialty	415-445-5021	DECLINED	DIC	Cannot come close to target premiums.	NON ADMITTED
Aspen			QUOTED	DIC	Quoted 5m x 5m @ $80K plus surplus lines taxes and fees.	NON ADMITTED
Colony			DECLINED	DIC	Due to ages of some of the structures.	NON ADMITTED
Hiscox			DECLINED	DIC	No civil works at this time.	NON ADMITTED
Landmark American			DECLINED	DIC	Ages of the structures	NON ADMITTED
Liberty International Und.			QUOTED	DIC	Quoted 10m xs 20M @ $60K plus surplus lines taxes and fees.	NON ADMITTED
Markel / Evanston			DECLINED	DIC	Cannot come close to target premiums.	NON ADMITTED
Scottsdale Insurance Company			DECLINED	DIC	Ages of the structures	NON ADMITTED
Vikco Insurance Services / Allied World National Assurance Co.			QUOTED	DIC	Quoted 10m xs 10M at $80,920 plus surplus lines taxes and fees	NON ADMITTED

City of San Bernardino Municipal Water Dept.
Statement of Values - Water Utility & Administration Facilities
2016-2017

	Loc	Facility Name	Address	City	State	Zip Code	Occupancy	Site Information/Construction	Year Built	Occupancy	Protection	Exposure	Properties Covered for Earthquake	Flood Zone	Stories	ISO	Appr Year	Building	Machinery & Equipment	EDP	Business Interuption / Extra Expense	Total	Total Covered for Earthquake
1		Old South S.B. Complex	882 S. Tippecanoe Ave	San	CA	92408	Water Tank	3,000 gal water tank		Rental	Hydrant	0.5 to businesses, homes	No				2011	$0	$64,400		Included	$64,400	
2	208.00	Perris Hill Rsvr	100 Perris Hill Rd	San Bernardino	CA	92404	Perris Hill Reservoir	1 0M gal reservoir (classified as a dam)	1962	Reservoir w/equip	Hydrant	1/4mi school;1/2mi homes	Yes	X			2011	$0	$6,304,721		Included	$6,304,721	$6,304,721
3		40th & Harrison	1001 E. 40th St	San Bernardino	CA	92404	Clorine Storage & Bldg	300 gal		Operations equip	Hydrant	1/4 mi homes	No				2011	$0	$56,989		Included	$56,989	
4		MW 15	1001 N. Waterman Ave.	San Bernardino	CA	92410	Well Pump			Operations equip		Next to homes	No				2011	$0	$57,250		Included	$57,250	
5		10th & "J" St. Well	1004 W. 10th St	San Bernardino	CA	92411	Well Pump & Bldg	450 gal chorine tank		Operations equip	Hydrant	0.3 mi homes	No				2011	$19,469	$115,591		Included	$135,060	
6	213.00	Olive & Garner St. Well	1048 N. Garner Ave	San Bernardino	CA	92411	Olive & Garner Street	1 well w/bldg		Operations equip	Hydrant	next to homes/1/4mi school	No	X			2011	$19,469	$115,591		Included	$135,060	
7		MW 136	1064 W. 11th St.	San Bernardino	CA	92411	Well Pump			Operations equip		Next to homes	No				2011	$0	$57,250		Included	$57,250	
8	282.00	EPA Well 4	107 W. 11th St	San Bernardino	CA	92410	EPA Well 4			Operations equip	Hydrant	next to homes	No	X			2011	$0	$57,250		Included	$57,250	
9	279.00	EPA Well 1	1094 N Stoddard Ave	San Bernardino	CA	92410	EPA Well 1			Operations equip	Hydrant	next to homes	No	X			2011	$0	$57,250		Included	$57,250	
10	212.00	10th & "J" St. Well	10th & J Street Well 1013 W 10th St.	San Bernardino	CA	92404	10th	1 well w/bldg					No	X			2011	$19,469	$57,250		Included	$76,719	
11		MW 139	1156 N. Wilson St.	San Bernardino	CA	92411	Well Pump			Operations equip		Next to homes	No				2011	$0	$57,250		Included	$57,250	
12		MW 137	1187 N. Herrington Ave.	San Bernardino	CA	92411	Well Pump			Operations equip		Next to homes	No				2011	$0	$57,250		Included	$57,250	
13		MW 138	1191 N. Western Ave.	San Bernardino	CA	92411	Well Pump			Operations equip		Next to homes	No				2011	$0	$57,250		Included	$57,250	
14	313.00	Encanto Bstr Sta Sta	1200 W. 9th St.	San Bernardino	CA	92411	Encanto Booster Station - Operations Equip			Operations equip	Hydrant	next to homes	No	X			2011	$0	$85,631		Included	$85,631	
15		MW 11	1221 N. Genevieve St.	San Bernardino	CA	92405	Well Pump			Operations equip		Next to homes	No				2011	$0	$57,250		Included	$57,250	
16	299.00	Newmark Plant	1265 W. Reservoir Dr	San Bernardino	CA	92407	Newmarket Plant	7.5M gal water reservior, pumps,	1968	Reservoir w/equip	Hydrant/extinquisher	1/4 mi homes	Yes	X			2011	$60,309	$9,005,039		Included	$9,065,348	$9,065,348
17	299.00	Newmark Plant	1265 W. Reservoir Dr	San Bernardino	CA	92407	Newmarket Plant	5.5M gal water reservior, pump and generator					Yes				2011	$0	$4,072,793		Included	$4,072,793	$4,072,793
18	299.00	Newmark Plant	1265 W. Reservoir Dr	San Bernardino	CA	92407	Newmarket Plant	8.9M gal water reservior & booster pump					Yes				2011	$0	$5,858,247		Included	$5,858,247	$5,858,247
19		Dillson	1274 Sonora Ca	San Bernardino	CA	92404	Well Pump & Bldg						No				2011	$0	$96,156		Included	$96,156	
20	307.00	EPA Well 7	1295 W. 48th St	San Bernardino	CA	92407	EPA Well 7 - Operations Equip			Operations equip	Hydrant	1/4mi homes/0.1mi church	No	X			2011	$0	$57,250		Included	$57,250	
21	308.00	EPA 108 Playground equipmt, tables, benches	1306 N. G St	San Bernardino	CA	92405	EPA Well 108 - Operations Equip			Pocket park	Hydrant	next to homes;0.1mi school	No	X			2011	$0	$0		Included	$0	
22		EPA Well 108	1306 N. G St	San Bernardino	CA	92405	Well Pump			Operations equip	Hydrant	next to homes	No				2011	$0	$57,250		Included	$57,250	
23	310.00	EPA Well 110	1335 N. Garner Ave	San Bernardino	CA	92411	EPA Well 110 - Operations Equip			Operations equip	Hydrant	next to homes	No	X			2011	$19,469	$57,250		Included	$76,719	
24		MW 14	137 E. 10th St.	San Bernardino	CA	92410	Well Pump			Operations equip		Next to homes	No				2011	$0	$57,250		Included	$57,250	
25	311.00	EPA Well 111	1396 N. Pico St	San Bernardino	CA	92411	EPA Well 111 - Operations Equip			Operations equip	Hydrant	next to homes	No	X			2011	$19,469	$57,250		Included	$76,719	
26		MW 07	1500 W. 48th St	San Bernardino	CA	92407	Well Pump			Operations equip		Next to homes	No				2011	$0	$57,250		Included	$57,250	
27	312.00	EPA Well 112	1580 W. Virginia St	San Bernardino	CA	92411	EPA Well 112 - Operations Equip			Operations equip	Hydrant	next to homes	No	X			2011	$19,469	$57,250		Included	$76,719	
28		MW 08	1635 Windsor St	San Bernardino	CA	92407	Well Pump			Operations equip		Next to homes	No				2011	$0	$57,250		Included	$57,250	
29		MW 129	1638 W. 16th St.	San Bernardino	CA	92411	Well Pump			Operations equip		Next to homes	No				2011	$0	$57,250		Included	$57,250	
30	206.00	17th St. Plant	1680 N. Sierra Way	San Bernardino	CA	92405	17th Street Plant	108,000 gal booster reservoir, 1 well w/bldg;2 wells w/o bldgs;2 boosters w/ bldgs	1948	Reservoir w/equip	Hydrant	0.1mi homes,church,preschool	Yes	X			2011	$77,875	$1,791,964		Included	$1,869,839	$1,869,839
31	162.00	Cajon Canyon Well	17228 Cajon Blvd	San Bernardino	CA	92407	Cajon Canyon Well	1 well w/ bldg.		Operations equip	Hydrant	1.3mi few homes	No	D			2011	$35,043	$96,156		Included	$131,199	
32	163.00	Vincent Well	17230 Cajon Blvd	San Bernardino	CA	92407	Vincent Well	1 well w/ bldg.		Operations equip	Hydrant	1.0mi few homes	No	D			2011	$19,469	$96,156		Included	$115,625	
33	164.00	Kenwood Well #2	17234 Cajon Blvd	San Bernardino	CA	92407	Kenwood Well #2	Operations Equipment		Operations equip	Hydrant	1.0mi few homes	No	D			2011	$19,469	$96,156		Included	$115,625	
34	164.00	Kenwood Well #1	17236 Cajon Blvd	San Bernardino	CA	92407	Kenwood Well	1 well w/ bldg.		Operations equip	Hydrant	1.0mi few homes	No	D			2011	$19,469	$76,685		Included	$96,154	
35	203.00	19th St. Plant	1820 W. 19th St	San Bernardino	CA	92411	19th Street Plant	258,000 gal booster reservoir; 2 wells w/bldg 4 boosters w/bldg	1952	Reservoir w/equip	Hydrant/extinquisher	next to homes;1/2mi school	Yes	X			2011	$127,473	$5,087,504		Included	$5,214,978	$5,214,978
36	165.00	Devore Plant	18367 Cajon Blvd S.	San Bernardino	CA	92407	Devore Reservoir	2M gal steel reservior, well & well pump with building	1982	Reservoir w/equip	Hydrant/extinquisher	1.0mi few homes	Yes	X			2011	$19,469	$2,044,951		Included	$2,064,420	$2,064,420
37		Sycamore Plant	1870 W. Sycamore St	San Bernardino	CA	92407	Sycamore Plant	448,000 gal steel reservior, well & well pump, 300 gal clorine with building	1965	Reservoir w/equip	Hydrant	0.1 mi homes	Yes				2011	$0	$731,309		Included	$731,309	$731,309
38		Sycamore Plant	1870 W. Sycamore St	San Bernardino	CA	92407	Sycamore Plant	6M gal steel reservior, booster pump & building					Yes				2011	$0	$3,237,764		Included	$3,237,764	$3,237,764
39		Devil Canyon #1 Plant	1895 W. Northpark Blvd	San Bernardino	CA	92407	Well Pump & Bldg			Operations equip	Hydrant	0.1mi homes;0.3mi univrsty	No				2011	$19,469	$170,381		Included	$189,850	

City of San Bernardino Municipal Water Dept.
Statement of Values - Water Utility & Administration Facilities
2016-2017

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40	181.00	Cajon Plant	19151 Cajon Blvd	San Bernardino	CA	92407	Cajon Plant	1 5M gal steel reservoir 1 well w/bldg, 2 Well w/o bldg & 1 hyrdro; steel aboveground	1982	Reservoir w/equip	Hydrant/extinquisher	0.5mi to few homes	Yes	X			2011	$19,469	$3,325,617		Included	$3,345,086	$3,345,086
41		MW 130	1924 N. Garner Ave.	San Bernardino	CA	92411	Well Pump			Operations equip		Next to homes	No				2011	$0	$57,250		Included	$57,250	
42	268.00	Water Utility Yards (Offices, Warehouse, Garage & Shops	195 North "D" Street	San Bernardino	CA	92401	Water Utility Yards Storage Building	Weight room included	1970				Yes	X	1.00	3.00	2011		$276,260		Included	$276,260	$276,260
43	268.00	Water Utility Yards (Offices, Warehouse, Garage & Shops	195 North "D" Street	San Bernardino	CA	92401	Water Utility Yards Garage	Approx. 25% of bldg is ISO class non-combustible framing, masonry, wood roof	1945				Yes	X	1.00	2.00	2011		$668,400		Included	$668,400	$668,400
44	268.00	Water Utility Yards (Offices, Warehouse, Garage & Shops	195 North "D" Street	San Bernardino	CA	92401	Water Utility Yards Storage Building		1985				Yes	X	1.00	3.00	2011		$164,900		Included	$164,900	$164,900
45	268.00	Water Utility Yards (Offices, Warehouse, Garage & Shops	195 North "D" Street	San Bernardino	CA	92401	Water Utility Yards Shop Bldg	2004 Restroom addition, Masony Wood Roof	1945				Yes	X	1.00	2.00	2011		$185,800		Included	$185,800	$185,800
46	268.00	Water Utility Yards (Offices, Warehouse, Garage & Shops	195 North "D" Street	San Bernardino	CA	92401	Water Utility Yards Storage Building	Approx 6% joisted masonry framing; parts storage, Wood Frame	1970				Yes	X	1.00	1.00	2011		$224,300		Included	$224,300	$224,300
47	268.00	Water Utility Yards (Offices, Warehouse, Garage & Shops	195 North "D" Street	San Bernardino	CA	92401	Water Utility Yards Portable Office	Offices contain local smoke detectors, Wood Frame	1998				Yes	X	1.00	2.00	2011		$399,070		Included	$399,070	$399,070
48	268.00	Water Utility Yards (Offices, Warehouse, Garage & Shops	195 North "D" Street	San Bernardino	CA	92401	Water Utility Yards Shop Bldg	Steel	1995				Yes	X	1.00	3.00	2011		$111,200		Included	$111,200	$111,200
49	268.00	Water Utility Yards (Offices, Warehouse, Garage & Shops	195 North "D" Street	San Bernardino	CA	92401	Water Utility Yards Office/Warehouse	Meeting rooms, meter shop, Locker room, offices, warehouse, Masonry Wood Roof	1945	Public	Hydrant/extinquisher	0.1 to businesses	Yes	X	1&2	2.00	2011		$4,132,100		Included	$4,132,100	$4,132,100
50		Water Utility (SCADA, PLC, Security)											Yes							$1,364,300	Included	$1,364,300	$1,364,300
51	202.00	Mt. Vernon Well	1955 W. Highland Ave	San Bernardino	CA	92407	Mt. Vernon Well	1 well w/bldg		Operations equip	Hydrant	1/4 mi homes	No	X			2011	$19,469	$96,156		Included	$115,625	
52	204.00	Baseline & Calif Plant	1964 W. Baseline St	San Bernardino	CA	92411	Baseline & California	1 well w/o bldg and 1 booster w/o bldg		Operations equip	Hydrant	0.1 mi to homes/1/4mi schl	No	X			2011	$19,469	$159,554		Included	$179,023	
67	176.00	Del Rosa #3 Rsvr	2000 E. Foothill Dr	San Bernardino	CA	92404	Del Rosa #3 Reservoir	3M gal Steel aboveground	1982	Reservoir w/equip	Hydrant	next to homes	Yes				2011	$0	$2,039,751		Included	$2,039,751	$2,039,751
68	187.00	Irvington	2000 Irvington Ave	San Bernardino	CA	92407	Devil Canyon #2 Well	1 well w/bldg					No				2011	$19,469	$96,156		Included	$115,625	
69	284.00	Foothill Bsts	2001 W. Foothill Blvd	San Bernardino	CA	92410	Foothill Booster Stn	Well Pump		Operations equip	Hydrant	1/4 mi homes	No				2011	$0	$70,056		Included	$70,056	
70	315.00	Ogden Plant	2045 W Odgen St	San Bernardino	CA	92407	Ogden Plant	Site Improvements: **12 MG Reservoir, 16,000 GPM Pum Station**		Operations equip	Hydrant	next to homes	Yes				2011	$0	$1,479,472		Included	$1,479,472	$1,479,472
71	275.00	Hill Bstr Sta	209 E. Hill Dr	San Bernardino	CA	92404	Hill Bstr	Well Pump		Operations equip	Hydrant	next to homes	No	X			2011	$0	$50,235		Included	$50,235	
72		Devil Canyon #2 Well	2100 W. Irvington Ave	San Bernardino	CA	92407	Well Pump & Bldg	Well Pump		Operations equip	Hydrant	0.3 mi homes	No				2011	$19,469	$143,091		Included	$162,560	
73	283.00	EPA Well 5	217 E. 11th St	San Bernardino	CA	92410	EPA Well 5	Well Pump		Operations equip	Hydrant	next to homes	No	X			2011	$0	$57,250		Included	$57,250	
74	300.00	Perris Hill Plant	2185 N. Crestview Ave	San Bernardino	CA	92404	Perris Hill Well #4 Perris Hill Plant OPS Equip + Chlorine			Operations equip	Hydrant	0.1 mi homes;0.3mi hosp/school	No	X			2011	$0	$171,489		Included	$171,489	
75	281.00	EPA Well 3	226 W. 11th St	San Bernardino	CA	92410	EPA Well 3	Well Pump		Operations equip	Hydrant	next to homes	No	X			2011	$0	$57,250		Included	$57,250	
76	205.00	Mallory Plant	2299 W. Mallory St	San Bernardino	CA		Mallory Well	1 booster reservoir; 1 well w/o bldg and 2 boosters w/o bldg	1959	Reservoir w/equip	Hydrant	0.1 mi to homes/1/4mi schl	No	X			2011	$0	$439,123		Included	$439,123	
77		7th Street Plant	230 E. 7th St	San Bernardino	CA	92410	Well Pump & Bldg	101,000 gal concrete reservior	1965	Reservoir w/equip	Hydrant	1/4 mi homes & business	No				2011	$19,469	$597,749		Included	$617,218	
78	199.00	23rd St. Well	2348 N. E St	San Bernardino	CA	92405	23rd Street Well	1 well w/bldg		Operations equip	Hydrant	1/4 mi homes&school	No	X			2011	$19,469	$96,156		Included	$115,625	
79		MW 128	2379 N. Western Ave.	San Bernardino	CA	92411	Well Pump			Operations equip		Next to homes	No				2011	$0	$57,250		Included	$57,250	
80	214.00	Lytle Creek Plant	2500 W. Baseline St	San Bernardino	CA	92410	Lytle Creek Plant	3M gal concrete reservoir underground, well pump with bldg	1957	Reservoir w/equip	Hydrant	0.1 mi homes	Yes				2011	$20,380	$2,783,977		Included	$2,804,357	$2,804,357
81	215.00	Lytle Creek Plant	2500 W. Baseline St	San Bernardino	CA	92410	Terrace & Terrace Elevated	7.5M gal reservoir steel above ground					Yes				2011	$0	$4,930,449		Included	$4,930,449	$4,930,449
82	301.00	Terrace Elevated Plant	2500 W. Baseline St	San Bernardino	CA	92410	Terrace Plant	100,000 gal reservior steel above ground, well pump with building	1956	Reservoir w/equip	Hydrant	0.1 mi homes	Yes				2011	$0	$332,688		Included	$332,688	$332,688
83		Terrace Plant	2500 W. Baseline St	San Bernardino	CA	92410	Terrace Plant	1.160M gal reservior steel, well pump	1958	Reservoir w/equip	Hydrant	0.1 mi homes	Yes				2011	$0	$1,002,848		Included	$1,002,848	$1,002,848
84	217.00	7th Street Plant	260 E. 7th St	San Bernardino	CA	92410	7th Street Plant	1 booster reservoir; 1 well w/o bldg; 1 booster w/o bldg					No	X			2011	$0	$385,870		Included	$385,870	
85		MW 13	262 W. 10th St.	San Bernardino	CA	92410	Well Pump			Operations equip		Next to homes	No				2011	$0	$57,250		Included	$57,250	
86	200.00	North E Plant	2641 1/2 N. E St	San Bernardino	CA	92405	North East Plant	233,000 gal reservoir concrete, 3 boosters, 1 well, 1 pump bldg.	1950	Reservoir w/equip	Hydrant	next to homes&fire station	No	X			2011	$19,469	$788,532		Included	$808,001	

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2016-2017

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87	303.00	Medical Center Plant	2700 Cajon Blvd	San Bernardino	CA		Medical Center Plant Now Cocke Reservoir	12M gal concrete reservior, well pump	2005	Reservoir w/equip	Hydrant	1/2 mi homes/businesses	Yes				2011	$0	$7,189,485		Included	$7,189,485	$7,189,485
88	207.00	27th & Acacia Plant	2762 N. Acacia Ave	San Bernardino	CA	92405	27th & Acacia Plant	247,000 gal reservior concrete, 1 well w/bldg and 1 booster w/bldg	1956	Reservoir w/equip	Hydrant	0.1mi homes;0.2mi conv hosp;0.2 mi school	No	X			2011	$38,938	$795,671		Included	$834,608	
89		IVDA Well 11 (Norton 2)	2830 Y Street	San Bernardino	CA	92408	Clorine Storage & Bldg						No				2011	$0	$18,082		Included	$18,082	
90		MW 10	289 W. Magnolia Ave.	San Bernardino	CA	92405	Well Pump			Operations equip		Next to homes	No				2011	$0	$57,250		Included	$57,250	
91	209.00	30th & Mt. View Plant	3009 N. Mt. View Ave	San Bernardino	CA	92405	30th & Mt View Plant	1122,000 gal booster reservoir concrete; 2 wells w/bldg 2 boosters w/bldg 1 booster w/o bldg.	1937	Reservoir w/equip	Hydrant	next to homes	No	X			2011	$58,406	$685,278		Included	$743,685	
92		IVDA Area 2 Elevated Reserv	3030 Y Street	San Bernardino	CA	92408							No				2011	$0	$0		Included	$0	
93	182.00	Palm & Kendall Plant	3100 North Industrial Pkwy	San Bernardino	CA	92407	Palm & Kendall Plant	325,000 gal reservoir steel, 1 booster, 1 pump bldg, 1 hydro gen	1982/2010	Reservoir w/equip	Hydrant	1/2mi industrial/business	Yes	X			2011	$19,469	$749,194		Included	$768,663	$768,663
94	316.00	Palm & Kendall Plant	3100 North Industrial Pkwy	San Bernardino	CA	92407	Palm Reservoir #3	5M gal reservior steel					Yes				2011	$0	$2,825,163		Included	$2,825,163	$2,825,163
95	316.00	Palm & Kendall Plant	3100 North Industrial Pkwy	San Bernardino	CA	92407	Palm Booster Station	booster pump with building					Yes				2011	$0	$27,500		Included	$27,500	$27,500
96	210.00	Waterman Plant	3150 N. Waterman Ave	San Bernardino	CA	92404	Waterman Plant	10M gal reservior concrete, 1 well w/bldg; 1 well w/o bldg; 5 boosters w/bldg; underground concrete, 2,000 GPM IX Treatment Plant Added	1948	Reservoir w/equip	Hydrant/extinquisher	next to homes	Yes	X			2011	$226,310	$11,234,502		$2,500,000	$13,960,812	$13,960,812
97	211.00	Gilbert St. Plant	320 E. Gilbert St	San Bernardino	CA	92404	Gilbert Street Plant	108,000 gal booster reservoir; 1 well w/bldg; 2 boosters w/bldg	1953	Reservoir w/equip	Hydrant	0.1 mi homes	Yes	X			2011	$38,938	$1,445,395		Included	$1,484,333	$1,484,333
98	280.00	EPA Well 2	334 W. 11th St	San Bernardino	CA	92410	Well Pump			Operations equip	Hydrant	next to homes	No	X			2011	$0	$96,156		Included	$96,156	
99	276.00	Shandin Hills Bstr Stas	3480 N. Circle Rd	San Bernardino	CA	92405	Shandin Hills Booster Stn	2 boosters w/building		Operations equip	Hydrant	next to homes	No	X			2011	$19,469	$50,235		Included	$69,704	
100	192.00	Ridgeline Plant	3514 N. Ridgeline Dr	San Bernardino	CA	92407	Ridgeline Plamt	1 00,000 gal reservoir, steel 2 boosters w/o bldg; steel above ground	1990	Reservoir w/equip	Hydrant	1/4 mi homes	No	X			2011	$0	$303,663		Included	$303,663	
101	193.00	Ridgeline Bstr Sta	3796 N. Ridgeline Dr	San Bernardino	CA	92407	Ridgeline Booster Stn	2 boosters w/o bldg		Operations equip	Hydrant	1/2 mi homes	No	X			2011	$0	$45,906		Included	$45,906	
102	170.00	Shandin Hills Rsvr	3800 N. Hillhurst Drive	San Bernardino	CA	92405	Shandin Hills Reservoir	219,000 gal reservior Underground concrete	1933	Reservoir w/equip	Hydrant	0.1mi homes	Yes	X			2011	$0	$634,496		Included	$634,496	$634,496
163		Sonora tot lot	3990 Sonora 92404	San Bernardino	CA	92404							No				2011	$0	$0		Included	$0	
164		MW 09	4099 N. 4th Ave.	San Bernardino	CA	92407	Well Pump			Operations equip		Next to homes	No				2011	$0	$57,250		Included	$57,250	
165	174.00	Del Rosa #1 Plant	4100 N. La Hacienda Dr	San Bernardino	CA	92404	Del Rosa #1 Plant	460,000 gal reservoir, 2 boosters w/o bldg; steel above ground	1956	Reservoir w/equip	Hydrant	1/2 mi homes	No	X			2011	$0	$624,998		Included	$624,998	
166	219.00	D	428 S. D Street	San Bernardino	CA	92401	Mill & D Geo Thermal	1 well w/bldg					No	X			2011	$38,938	$57,250		Included	$96,188	
167	191.00	Daley Canyon Rsvr	4345 N. Sand Canyon Rd	San Bernardino	CA	92404	Daley Canyon Reservoir	1.5M gal reservior Underground concrete	1972	Reservoir w/equip	Hydrant	1 mi to homes	No				2011	$0	$1,551,777		Included	$1,551,777	
168	306.00	EPA Well 6	4401 N. Western Ave	San Bernardino	CA	92407	Well Pump & Bldg			Operations equip	Hydrant	next to homes	No				2011	$0	$96,156		Included	$96,156	
169	314.00	Rialto	444 W. Rialto Aenue	San Bernardino	CA	92401	Office & Warehousing	Leased Property with Escorted entry and fire extinguishers	2008				Yes	X		4.00	2011	$0	$55,000		Included	$55,000	$55,000
170	195.00	Ridgeview Rsvr	4500 David Way	San Bernardino	CA	92404	Ridgeview Booster Stn	Well & booster pump with bldg					No	X			2011	$0	$70,056		Included	$70,056	
171	190.00	Quail Canyon Plant	4500 N. Del Rosa Ave	San Bernardino	CA	92404	Quail Canyon Plant	400,000 gal reservoirs Steel above ground	1957	Reservoir w/equip	Hydrant	1/2 mi homes	No	X			2011	$0	$571,676		Included	$571,676	
172	175.00	Ridgeview Bstr Sta	4510 N. Radkins Ln	San Bernardino	CA	92404	Del Rosa #2 Plant	80,000 gal reservoir, 2 boosters, Steel above ground		Operations equip	Hydrant	1/4 mi homes	Yes	X			2011	$0	$461,762		Included	$461,762	$461,762
173		Del Rosa #2 Plant	4510 N. Rankins Ln	San Bernardino	CA	92404	Del Rosa #2 Plant	190,000 gal reservior steel, booster pump	1957	Reservoir w/equip	Hydrant	next to homes	Yes				2011	$0	$393,888		Included	$393,888	$393,888
174	218.00	Mill & "D" GeoThrm	470 S. D St	San Bernardino	CA	92401	Mill & D Street Plant	437,000 gal booster reservoir; 1 well w/bldg; 2 boosters w/bldg		Operations equip	Hydrant	0.3mi homes & school	No	X			2011	$38,938	$907,578		Included	$946,515	
175		Mill & "D" St. Plant	470 S. D St	San Bernardino	CA	92401		437,000 gal booster reservoir; 1 well w/bldg; 2 boosters w/bldg	1934	Reservoir w/equip	Hydrant	0.3mi homes & school	No				2011	$0	$871,178		Included	$871,178	
176	194.00	Ridgeview Rsvr	4999 N. David Way	San Bernardino	CA	92404	Ridgeview Reservoir	330,000 gal resevior Steel aboveground, booster pump	1963	Reservoir w/equip	Hydrant	1/4 mi homes	No	X			2011	$0	$484,691		Included	$484,691	
177	177.00	Del Rosa Bstr Sta	510 E. 40th St	San Bernardino	CA	92404	Del Rosa Booster Stn	3 boosters w/bldg		Operations equip	Hydrant	next to homes	No				2011	$19,469	$75,205		Included	$94,674	
178	188.00	Northpark	5150 Northpark Blvd	San Bernardino	CA	92407	Devil Canyon #1 Well	1 well w/bldg and 3 boosters w/o bldg					No				2011	$19,469	$170,381		Included	$189,850	
179	172.00	Northpark	5200 Northpark Blvd	San Bernardino	CA	92407	Sycamore Plant	448,000 gal resevior steel, well pump					Yes	X			2011	$0	$607,968		Included	$607,968	$607,968
180			5200 Northpark Blvd	San Bernardino	CA	92407	Sycamore Plant	6M gal resevior steel,					Yes				2011	$0	$3,190,675		Included	$3,190,675	$3,190,675

City of San Bernardino Municipal Water Dept.
Statement of Values - Water Utility & Administration Facilities
2016-2017

	Loc	Facility Name	Address	City	State	Zip Code	Occupancy	Site Information/Construction	Year Built	Occupancy	Protection	Exposure	Properties Covered for Earthquake	Flood Zone	Stories	ISO	Appr Year	Building	Machinery & Equipment	EDP	Business Interuption / Extra Expense	Total	Total Covered for Earthquake
181		IVDA Plant - Boosters 1 & 2	524 Perimeter Rd	San Bernardino	CA	92408		Clorine storage					No				2011	$0	$18,082		Included	$18,082	
182	178.00	Electric Dr. Plant	5290 N. Electric Ave	San Bernardino	CA	92407	Electric Dr Reservoir	8M gal resevior concrete 3 boosters w/ bldg.	1937	Reservoir w/equip	Hydrant	next to homes	Yes	A			2011	$19,469	$5,566,274		Included	$5,585,743	$5,585,743
183	270.00	Cultural Center Building	536 W. 11th St	San Bernardino	CA	92410	VACANT	Facility is vacant, Historic Building, Masonry Wood Roof	1935	Rental	Hydrant	50ft offices/classrooms	No	X	1.00	2.00	2011	$340,000	$0		Included	$340,000	
184		MW 12	570 W. 10th St.	San Bernardino	CA	92410	Well Pump			Operations equip		Next to homes	No				2011	$0	$57,250		Included	$57,250	
185	168.00	Mountain Plant	5735 N. Sepulveda Ave	San Bernardino	CA	92404	MTN #1 Booster Reservoir	233,000 gal resevior Steel above ground	1964	Reservoir w/equip	Hydrant	1/4mi homes	No				2011	$0	$669,156		Included	$669,156	
186	169.00	Mountain Plant	5735 North Sepulveda Ave	San Bernardino	CA	92404	MTN #2 Booster Reservoir	2.2M gal resevior Above ground steel	1952				No				2011	$0	$2,116,869		Included	$2,116,869	
187	171.00	Sycamore #1 Rsvr	5879 N. H St	San Bernardino	CA	92407	Sycamore #1 Reservoir	2.5M gal resevior Steel above ground	1959	Reservoir w/equip	Hydrant	0.5mi homes	No	X			2011	$0	$1,815,056		Included	$1,815,056	
188	167.00	College Rsvr	6300 N. Devil Canyon Rd	San Bernardino	CA	92407	College Cyn Reservoir	2.5M gal resevior Steel above ground	1964	Reservoir w/equip	Hydrant	1/4mi college;01mi homes	No				2011	$0	$1,857,422		Included	$1,857,422	
189	317.00	Magnolia Booster Station	6653 N. Magnolia Ave	San Bernardino	CA	92407	Magnolia Booster Station	Meyers Boosters 3, 4, 5 and 6	2008	Operations equip	Hydrant	0.1 mi homes	Yes				2011	$19,469	$2,082,444		Included	$2,101,913	$2,101,913
190	184.00	Devil Canyon Plant	6700 N. Devils Canyon Rd	San Bernardino	CA	92407	Devil Canyon Reservoir	220,000 resevior, boosters w/bldg; underground concrete	1932	Reservoir w/equip	Hydrant	0.3mi homes	No				2011	$38,938	$812,901		Included	$851,839	
191	183.00	Little League Bstr Sta	6701N. Little League Dr	San Bernardino	CA	92407	Little League Booster	2 boosters w/bldg		Operations equip	Hydrant	1/2 mi to homes	No				2011	$19,469	$70,056		Included	$89,525	
192	304.00	Melvin Bstr Sta Station	6801 N. Melvin St	San Bernardino	CA	92410	Melvin Booster Station - Operations Equip	Well Pump with building		Operations equip	Hydrant	0.1 mi homes	No				2011	$19,469	$85,631		Included	$105,100	
193	196.00	40th & Valencia Well	694 E. 40th St.	San Bernardino	CA	92404	40th & Valencia Well	1 well w/bldg		Operations equip	Hydrant	1/4 mi homes	No	A			2011	$38,938	$114,239		Included	$153,176	
194	277.00	Sycamore #1 Bstr Sta	710 W. 48th St	San Bernardino	CA	92407	Sycamore #1 BSTR	Well Pump with building		Operations equip	Hydrant	next to homes	No	X			2011	$0	$58,496		Included	$58,496	
195	166.00	Meyers Canyon Rsvr	7301 N. Little League Dr.	San Bernardino	CA	92407	Meyers Cyn Reservoir	2M gal Underground concrete reservoir with equipment	1992	Reservoir w/equip	Hydrant	1/2mi school/homes	Yes				2011	$0	$2,043,277		Included	$2,043,277	$2,043,277
196	180.00	Devil Canyon Domestic Plant	7500 Devils Canyon Rd	San Bernardino	CA	92407	Devil Canyon #7 Well	1 well w/bldg					No				2011	$19,469	$57,250		Included	$76,719	
197	278.00	Devil Canyon Domestic Plant	7500 Devils Canyon Rd	San Bernardino	CA	92407	Devils Canyon Domestic	Well Pump with building					No				2011	$19,469	$57,250		Included	$76,719	
198	179.00	Devil Canyon Domestic Plant	7500 N. Devils Canyon Rd	San Bernardino	CA	92407	Devil Canyon #6 Well	1 well w/o bldg	1932	Reservoir w/equip	Hydrant	1/2 mi to few homes	No				2011	$19,469	$211,692		Included	$231,161	
199	216.00	Antil Plant	780 E. 6th St	San Bernardino	CA	92410	Antil Plant	258,000 gal booster reservoir; 2 wells w/bldg; 1 well w/o bldg; 4 boosters w/bldg;3 boosters w/o bldg	1953	Reservoir w/equip	Hydrant	0.3 mi homes/schools	No	X			2011	$97,344	$985,592		Included	$1,082,936	
200	220.00	Arwhd.& Cntrl.GeoThrm	800 S. Arrowhead Av	San Bernardino	CA	92408	Arrowhead & Central	1 well Geo thermal Operations Equipment		Operations equip	Hydrant	1/2mi businesses	No	X			2011	$0	$96,156		Included	$96,156	
201		MW 135	831 W. Orange St.	San Bernardino	CA	92410	Well Pump & Bldg			Operations equip		Next to homes	No				2011	$0	$57,250		Included	$57,250	
202	201.00	Lynwood Plant	865 E. Lynwood Dr	San Bernardino	CA	92404	Lynwood Plant	223,000 gal booster reservoir; 1 well w/bldg 2 boosters w/bldg	1955	Reservoir w/equip	Hydrant	next to homes&fire station	No	X			2011	$30,072	$737,274		Included	$767,346	
203	269.00	Tippecanoe	882 South Tippecanoe Ave	San Bernardino	CA	92408	Old South S.B Complex Office Bldg	1.285M gal resevior steel, Masonry Wood Roof	1980				No	X	1.00	2.00	2011	$198,752	$1,091,965		Included	$1,290,716	
204	309.00	EPA Well 109	980 W. Home Ave	San Bernardino	CA	92411	EPA Well 109 - Operations Equip	Well Pump with building		Operations equip	Hydrant	next to homes	No	X			2011	$19,469	$57,250		Included	$76,719	
205	185.00	Devil Canyon	Devil Canyon Domstic Plant	San Bernardino	CA	92407	Devil Canyon Domestic						No				2011	$0	$0		Included	$0	
206	264.00		Various Locations	San Bernardino	CA	92402	Office Equipment						No				2011		$306,000		Included	$306,000	
207	265.00		Various Locations	San Bernardino	CA	92402	Computer Equipment	Equipment consists of PC's, printers, servers, SCADA, fiber optic network					No				2011		$0	$1,000,000	Included	$1,000,000	
208		Admin./Ops. - 397 Chandler	397 Chandler Ave	San Bernardino	CA	92408	Operations Building	Offices, garage bays, storage (future WU Division Buidling)		Offices	Hydrant	Next to Businesses	Yes				2012	$700,000	$232,656		Included	$932,656	$932,656
209	266.00		Various Locations	San Bernardino	CA	92402	Radios & Communications - Radio & Phone System	Radios and Phone System					No				2011		$306,000		Included	$306,000	
210			Various Locations	San Bernardino	CA		IT Equipment - PCs, Laptops, Tablets, Printers)						No							$1,087,600	Included	$1,087,600	
211			Various Locations	San Bernardino	CA		Mobile Equipment						No						$610,743		Included	$610,743	
		Golf Course Green	APN: 0141-421-01,02 & 07	San Bernardino	CA	92408	Land that is adjacent to WRP	Land adjacent to WRP					No								Included	$0	
		Cashiering Building	1350 South E. St	San Bernardino	CA	92408	Cashiering	Currently under TI improvements	1970	Offices and customer service			Yes		1.00			$1,500,000			Included	$1,500,000	
	Totals																	$4,309,123	$124,251,640	$3,451,900	$2,500,000	$134,512,663	$104,143,733
	Water Department - 2014																						

City of San Bernardino Municipal Water Dept.
Statement of Values - Water Reclamation Plant & RIX Facilities
Effective: 2016-2017

	Loc	Facility Name	Process	Sub-Process	Occupancy	Site Information/Construction	Features	Year Built	Size	Occupancy	Protection	Services	Exposure	Properties Covered for Earthquake	Flood Zone	Stories	ISO	Appr Year	Building	Machinery & Equipment	EDP	Business Interruption / Extra Expense	Total
157		WRP - Chandler	Facility Wide		Land Improvements (Includes Biosolids Storage Beds)					Water Reclamation Plant	Hydrant, Security		None	Yes	X	NA		2011	961,248	0		Included	961,248
162		WRP - Chandler (SCADA, PLC, Instruments, Mag Meters, Security)	Facility Wide							Water Reclamation Plant	Hydrant, Security		None	Yes		NA					2,146,879	Included	2,146,879
103	221.00	WRP - Administration Building	Admin		Water Reclamation; Waste Admin Bldg. - Administrative Offices, Operation Center, Small Lab, Lobby, Break-Room W/Kitchen, Plant Master Control Room, Conference Room, Library, Classroom/Training Room & Copy Room, & Emergency Generator	Remodeled in 1992, Wood Siding &Stucco on Studs; Brick on Masonry/Glass; Masonry Wood Roof; Clay tile roof (new 2010); Floor: Asphalt Tile, Vinyl Carpeting & Ceramic Tile; Ceiling: Acoustic drywall; Partitions: Brick/Drywall/Plaster, Ceramic Tile on Drywall, Concrete Foundation Walls and Slab	Walk-in cooler, Built-ins (Cabinets, Bookcases, counters, Covered Entry Way, Covered Walkway, Window Treatments, Railings, Access Hatch, Vault, Surveillance System, Water Fountain (3' Diameter, not on), 40' Flagpole on Roof, External Staircase, Motion Detectors, Smoke Detectors, Heat Detectors, (2) Fume Hoods, & Attached Shelter (13.5' X 61').	1958	18,506 sq. ft.	Water Reclamation Plant	Hydrant, Fire Alarm - Automatic & Manual; Sprinkler System (installed 1992) Intrusion Security System (With Underground Perimeter Sensors)	Electrical, Plumbing, Heating (roof units), and Air Conditioning (roof units)	None	Yes	X	1 & 2	4.00	2011	$3,643,351	1,795,764		Included	5,439,115
115	225.00	WRP - Chandler - Office Equipment	Admin		Computer Equipment, Office Furniture and Equip, Lab EQ					Water Reclamation Plant	Hydrant, Security		None	Yes	X	NA			$0	1,853,561	2,750,000	Included	4,603,561
		WRP Chandler - Process Piping, Lining & Electrical Lines Throughout Plant	All		Process Piping, Lining & Electrical Lines		Water, Process, Sludge, Fuel, Air, Chlorine, Drain, Foul Air, Duct Banks, Abandoned & Electrical Lines.			Water Reclamation Plant				Yes		NA				18,588,490		2,500,000	21,088,490
122	232.00	WRP - Chandler - E Street Pump Station	Influent Pumping		"E" Street Lift Station Pump, Emergency Back-Up Generator and Foul Air Scrubber (Not in Use)	Concrete Construction, Built-Up Roof & Slab on Grade Foundation, Wet Well & @ Level Basement		1990	480 sq. ft.	Water Reclamation Plant	Hydrant, Security		None	Yes	X			2011	$1,587,617	3,406,000		Included	4,993,617
143		WRP - Chandler - East Flow Line Lift Station	Influent Pumping		East Flow Lift Station					Water Reclamation Plant	Hydrant, Security		None	Yes	X			2011	$478,240	1,051,349		Included	1,529,589
104	222.00	WRP - Chandler - Arrowhead Pump Station (CAT Building)	Influent Pumping		Arrowhead Pump Station (Includes Caterpillar Engines 1-4)	Concrete Construction, Built-Up Roof , Slab & 1/2 Base; and Multi-Level Wet Well	Engines, Shafts, Wet Well & Pumps	1969	6,880 sq. ft.	Water Reclamation Plant	Hydrant, Security		None	Yes	X	1.00		2011	$875,000	5,404,430		Included	6,279,430
		WRP - Chandler - Headworks Screw Pump Station	Influent Pumping		Headworks Screw Pump Station					Water Reclamation Plant	Hydrant, Security		None	Yes	X			2011		312,500		Included	312,500
		WRP - Chandler - Headworks/Unit 3 Tunnel System			Headworks/Unit 3 Tunnel System					Water Reclamation Plant				Yes	X					1,500,000		Included	1,500,000
112	223.00	WRP - Chandler - Septage Receiving Station	Preliminary		Septage Receiving Including Grinder	Above ground block, below concrete				Water Reclamation Plant	Hydrant, Security		None	Yes	X			2011	$125,000	0		Included	125,000
		WRP - Chandler - Stormwater Junction Box	Preliminary											Yes	X					30,000		Included	30,000
		WRP - Chandler - Headworks Splitter Box	Preliminary	Flow Split Area										Yes						500,000		Included	500,000
107	223.00	WRP - Chandler - Headworks Blower Building	Preliminary	Aeration Supply	Headworks - Blower Bldg	Concrete Structure, Built-Up Roof, slab on-Grade Foundation		1991	1,231 sq. ft.	Water Reclamation Plant	Hydrant, Security		None	Yes	X			2011	$852,556	2,795,456		Included	3,648,012
		WRP Chandler - Headworks Generator Building	Preliminary		Headworks - Generator Building									Yes					$5,115,780			Included	5,115,780
		WRP - Chandler - PIPL Flow Metering Structure	Preliminary		PIPL Flow Metering Structure					Water Reclamation Plant				Yes	X					75,000		Included	75,000
		WRP - Chandler - Ferric Chloride Building Tank & Pump System	Preliminary		Ferric Chloride Station					Water Reclamation Plant				Yes	X					75,000		Included	75,000
144		WRP Chandler - Grit Chambers (1-4)	Preliminary		Grit Chambers (4)					Water Reclamation Plant	Hydrant, Security		None	Yes				2011	$0	3,679,068		Included	3,679,068
106	223.00	WRP Chandler - Headworks Grit Washing Building	Preliminary		Headworks -Grit Washing Bldg.	Concrete Structure, Built-Up Roof, slab on-Grade Foundation; Ground Floor has Mezzanine), Basement	Bin Loading, Mezzanine & Tunnel	1991	1870 sq. ft.	Water Reclamation Plant	Hydrant, Security		None	Yes	X			2011	$375,000	4,546,039		Included	4,921,039

City of San Bernardino Municipal Water Dept.
Statement of Values - Water Reclamation Plant & RIX Facilities
Effective: 2016-2017

	Loc	Facility Name	Process	Sub-Process	Occupancy	Site Information/Construction	Features	Year Built	Size	Occupancy	Protection	Services	Exposure	Properties Covered for Earthquake	Flood Zone	Stories	ISO	Appr Year	Building	Machinery & Equipment	EDP	Business Interruption / Extra Expense	Total
		WRP - Chandler - Headworks Recycling Meter Structure	Preliminary		Headworks Recycling Metering Structure					Water Reclamation Plant			None	Yes	X				$500,000			Included	500,000
105	223.00	WRP Chandler - Bar Screen Building	Preliminary		Headworks -Barscreen Bldg. - (3) Bar Screens; (2) Conveyors; (Ferric Chloride Pump; Ferric Chloride Storage Tank (1)	Lift stations; (3) barscreens; above & below ground concrete and steel				Water Reclamation Plant	Hydrant, Security		None	Yes	X			2011	$1,809,000	1,238,071		Included	3,047,071
108	223.00	WRP - Chandler - Headworks Electrical Bldg.	Preliminary		Headworks-Electrical Bldg.	Block & concrete				Water Reclamation Plant	Hydrant, Security		None	Yes	X			2011	$137,500	527,071		Included	664,571
110	223.00	WRP - Chandler - Headworks Sampling Bldg.	Preliminary		Headworks -Sample Bldg.	Above ground steel and concrete				Water Reclamation Plant	Hydrant, Security		None	Yes	X			2011	$100,000	0		Included	100,000
123	233.00	WRP - Chandler - Foul, Air Scrubbers	Preliminary & Solids Handling	Foul Air Control	Foul Air Scrubbers: Headworks, Thickener & Belt Press	Fiberglass & steel				Water Reclamation Plant	Hydrant, Security		None	Yes	X			2011	$0	443,104		Included	443,104
		WRP Chandler - Tertiary Clarifier (Not in Use/Abandoned)			Tertiary Clarifier					Water Reclamation Plant			None	Yes	X			2011				Included	0
145		WRP Chandler Tertiary (Water) Reservoir (Utility Water)			Water Reservoirs					Water Reclamation Plant			None	Yes	X			2011	$0	1,583,993		Included	1,583,993
		WRP - Chandler - Facilities Maintenance Shop			Facilities Maintenance Shop					Water Reclamation Plant				Yes	X				$40,000			Included	40,000
132	242.00	WRP - Chandler - Unit I Pump House	Primary		Unit I Primary Pump House	Above ground and below concrete		1958	1,620 sq. ft.	Water Reclamation Plant	No Fire Suppression	Water Heater	None	Yes	X			2011	$312,500	0		Included	312,500
133	243.00	WRP - Chandler - Unit I Primary Clarifier	Primary		Unit I - Primary Clarifier and Aeration Bays	1,500,000 gal.; concrete underground, Basement, Grade & Top of Dome		1958	58,505 sq. ft.	Water Reclamation Plant	Hydrant, Security		None	Yes	X			2011		10,000,000		Included	10,000,000
		WRP - Chandler - East Hydraulic Structure	Primary		East Hydraulic Structure					Water Reclamation Plant				Yes	X					50,000		Included	50,000
137	247.00	WRP - Chandler - Unit 2 North Primary	Primary		Unit 2 North Primary Clarifier and Aeration Bays	1,500,000 gal.; concrete underground, Basement, Grade & Top of Dome		1969	35,614 sq. ft.	Water Reclamation Plant	Hydrant, Security		None	Yes	X			2011		10,000,000		Included	10,000,000
138	248.00	WRP - Chandler - Unit 2 South Primary	Primary		Unit 2 South Primary Clarifier and Aeration Bays	1,500,000 gal.; concrete underground, Basement, Grade & Top of Dome		1969	35,614 sq. ft.	Water Reclamation Plant	Hydrant, Security		None	Yes	X			2011		10,000,000		Included	10,000,000
		WRP - Chandler - Unit 2 Pump Station	Primary		Unit 2 Pump Station					Water Reclamation Plant				Yes						450,000		Included	450,000
		WRP - Chandler - Unit 2 Flow Distribution Box	Primary		Unit 2 Flow Distribution Box					Water Reclamation Plant				Yes	X					50,000		Included	50,000
147		WRP - Chandler - Unit 3 Primary (3A - 3D)	Primary		Unit 3 Primary Clarifiers (1-4)					Water Reclamation Plant	Hydrant, Security		None	Yes	X					4,000,000		Included	4,000,000
134	244.00	WRP - Chandler - Unit 1 Secondary Clarifier (East)	Secondary		Unit 1 - Secondary Clarifier East	1,300,000; concrete, underground				Water Reclamation Plant	Hydrant, Security		None	Yes	X			2011	$1,343,043	1,276,742		Included	2,619,785
135	245.00	WRP Chandler - Unit 1 Secondary Clarifier (West)	Secondary		Unit 1 - Secondary Clarifier West	Above & below ground concrete & steel				Water Reclamation Plant	Hydrant, Security		None	Yes	X			2011	$1,343,043	1,276,742		Included	2,619,785
140	250.00	WRP - Chandler - Unit 2 North Secondary Clarifier	Secondary		Unit 2 North Secondary Clarifier	1,200,000 gal.; concrete underground				Water Reclamation Plant	Hydrant, Security		None	Yes	X			2011	$1,343,043	1,276,742		Included	2,619,785
141	251.00	WRP - Chandler - Unit 2 South Secondary Clarifier	Secondary		Unit 2 South Secondary Clarifier	1,200,000 gal.; concrete underground				Water Reclamation Plant	Hydrant, Security		None	Yes	X			2011	$1,343,043	1,276,742		Included	2,619,785
		WRP - Chandler - Chlorine Building	Secondary	Disinfection	Chlorine Building	Concrete Construction, Built-Up Roof & Slab on Grade Foundation		1969	1,600 sq. ft.	Water Reclamation Plant	No Fire Suppression			Yes					$1,276,743			Included	1,276,743
139	249.00	WRP - Chandler - Unit 2 Chlorine Contact Tank	Secondary	Disinfection	Unit 2 Chlorine Contact Basin Tank	5,000 gal.; concrete underground, Basement, Mid-Level & Ground		1991	19,747 sq. ft.	Water Reclamation Plant	Hydrant, Security		None	Yes	X			2011		249,903		Included	249,903
		WRP - Chandler - Secondary Effluent Vault	Secondary	Secondary Effluent Discharge	Secondary Effluent Vault									Yes	X				$20,000			Included	20,000
		WRP - Chandler - Plant Effluent/Chlorine Contact Lagoon Influent Flow Control/Metering Structure	Secondary	Secondary Effluent Discharge	Metering Structure									Yes	X				$75,000			Included	75,000
		WRP - Chandler - Plant Effluent Sampling/Chlorine Contact Lagoon Effluent Flow Metering Structure	Secondary	Secondary Effluent Discharge	Metering Structure									Yes	X				$40,000			Included	40,000
149		WRP - Chandler - Chlorine Contact Lagoon	Secondary	Secondary Effluent Discharge	Chlorine Contact Lagoon including (2) bleach pumps and bleach storage units					Water Reclamation Plant	Hydrant, Security		None	Yes	X				$150,000			Included	150,000

City of San Bernardino Municipal Water Dept.
Statement of Values - Water Reclamation Plant & RIX Facilities
Effective: 2016-2017

	Loc	Facility Name	Process	Sub-Process	Occupancy	Site Information/Construction	Features	Year Built	Size	Occupancy	Protection	Services	Exposure	Properties Covered for Earthquake	Flood Zone	Stories	ISO	Appr Year	Building	Machinery & Equipment	EDP	Business Interruption / Extra Expense	Total
		WRP - Chandler - Outfall Structure	Secondary	Effluent Discharge										Yes	X				$25,000			Included	25,000
		WRP - Chandler - Outfall Sample Station	Secondary	Effluent Discharge										Yes	X				$25,000			Included	25,000
142	252.00	WRP - Chandler - NRC Building , Nitrogen Removal Carrousel, & Secondary Clarifier	Secondary	NRC	Nitrogen Removal NRC Anoxic: 3.5 MGD Treatment, Nitrogen Removal Carrousel: Screw Lifts (3), RAS Pumps (3);WAS Pumps (2); Aerators (2)	Concrete Construction, Built-Up Roof & Basement	Bldg. houses Emergency Generator	1986	4,200 sq. ft.	Water Reclamation Plant	Hydrant, Security		None	Yes	X			2011	$1,737,080	908,547		Included	2,645,627
		WRP - Chandler - Boiler Building	Solids Handling	Digestion	Boiler Bldg. ((2) Boilers	Concrete Construction, Built-Up Roof & Slab on Grade Foundation	Boiler Room	1985	883 sq. ft.	Water Reclamation Plant				Yes	X				$200,000			Included	200,000
		WRP - Chandler - Roots Blower Building	Secondary	Digestion	Blower Engines (2) Electric Blowers (3)	Concrete Construction, Built-Up Roof & Slab on Grade Foundation	(2)Waukesha 750 HP Engines	1991	6,684 sq. ft.	Water Reclamation Plant				Yes	X				$5,407,200			Included	5,407,200
159		WRP - Chandler - Worthington (Cogeneration Building)	Secondary	Digestion	Cogeneration Bldg. Two 999HP Engines with 704kW Generators	Concrete Construction, Built-Up Roof & Slab on Grade Foundation	Engine Room, One Level Wet Well, Natural Gas Mixer (outside)	1961	5,090 sq. ft.	Water Reclamation Plant	Hydrant, Security		None	Yes	X			2011	$5,115,780			Included	5,115,780
		WRP - Chandler - SST Scrubber System (Abandoned)	Secondary	Digestion	SST Scrubbing System (Hyperion) (Not in Use)	Immediately N/O North Digested Sludge Storage Tank								Yes	X							Included	0
		WRP-CHANDLER - Digester Gas Scrubbing System (Abandoned) Hyperion	Solids Handling		Digester Gas Scrubbing System									Yes						125,000		Included	125,000
		WRP - Chandler - MCC-CO			MCC-CO					Water Reclamation Plant				Yes	X					100,000		Included	100,000
118	228.00	WRP Chandler - Digester A	Solids Handling	Digestion	Digester (A)	1,500,000 gal; above ground concrete & steel				Water Reclamation Plant	Hydrant, Security		None	Yes	X			2011	$0	2,870,649		Included	2,870,649
119	229.00	WRP Chandler - Digester B	Solids Handling	Digestion	Digester (B)	1,500,000 gal; above ground concrete & steel				Water Reclamation Plant	Hydrant, Security		None	Yes	X			2011	$0	2,870,649		Included	2,870,649
120	230.00	WRP Chandler - Digester C	Solids Handling	Digestion	Digester (C)	2,500,000 gal; above ground concrete & steel				Water Reclamation Plant	Hydrant, Security		None	Yes	X			2011	$0	2,870,649		Included	2,870,649
121	231.00	WRP - Chandler - Digester D	Solids Handling	Digestion	Digester (D)	2,500,000 gal; above ground concrete & steel				Water Reclamation Plant	Hydrant, Security		None	Yes	X			2011	$0	2,870,649		Included	2,870,649
		WRP - Chandler - Digester Control Building	Solids Handling	Digestion	Digestion & Sludge Heating (4) Heat Exchangers	Concrete Construction, Built-Up Roof & Basement		1985	5,535 sq. ft.	Water Reclamation Plant				Yes	X				$1,147,250			Included	1,147,250
		WRP - Chandler - NRC Building	Secondary	NRC	NRC Building including Emergency Generator									Yes	X							Included	0
		WRP Chandler - Brine Ponds	Secondary	NRC	Emergency Overflow Basins for NRC									Yes	X				$50,000			Included	50,000
148		WRP - Chandler - Unit 1 Chlorine Contact Tank	Secondary	Disinfection	Unit 1 Chlorine Contact Basin Tank					Water Reclamation Plant	Hydrant, Security		None	Yes	X				$0	125,803		Included	125,803
		WRP - Chandler - Generator Building (Old Blue)			Old Blue - Natural Gas Generator	Concrete Construction, Metal Roof &Slab on Grade Foundation		1969	675 sq. ft.	Water Reclamation Plant	No Fire Suppression			Yes	X				$382,312			Included	382,312
		WRP - Chandler - RS-1 Sludge Pump Building			Pump & Generator	Concrete Construction, Built-Up Roof & Base Foundation		1988	2,765 sq. ft.	Water Reclamation Plant	No Fire Suppression		None	Yes	X			2011	$235,200	915,000		Included	1,150,200
117	227.00	WRP - Chandler - DAFTs	Solids Handling	Thickening	DAFT Sludge Thickener (4) Units	1,500,000 gal; concrete underground				Water Reclamation Plant	Hydrant, Security		None	Yes	X			2011	$103,410	3,253,187		Included	3,356,597
		WRP - Chandler - Thickener Building	Solids Handling	Thickening	Thickener Bldg. North & South Thickener	Concrete Construction, Built-Up Roof , Slab on Grade Foundation & Second Floor		1969	1,120 sq. ft.	Water Reclamation Plant				Yes	X				$500,000			Included	500,000
154		WRP - Chandler - Digested Sludge Storage Tanks	Solids Handling		North & South Digested Sludge Storage Tanks (2)					Water Reclamation Plant	Hydrant, Security		None	Yes	X				$0	1,385,855		Included	1,385,855
153		WRP - Chandler - Belt Presses & Centrifuges (Dewatering Bldg.)	Solids Handling	Dewatering	Dewatering Bldg.	Ground Floor has Mezzanine, Basement; Above and Below Ground Concrete & Steel	Houses (3) Belt Presses and (2) Centrifuges	1985	9,276 sq. ft.	Water Reclamation Plant	Hydrant, Security		None	Yes	X			2011	$267,237	10,056,505		Included	10,323,742
131	241.00	WRP - Chandler - Sludge Storage Bin & Silo	Solids Handling	Cake	Sludge Storage Silo, Bin, Conveying	Concrete Construction, Silo: Above Ground Steel, Conveyor Structure: Steel, Built Up Roof & Basement		1980	6,528 sq. ft.	Water Reclamation Plant	Hydrant, Security		None	Yes	X			2011	$0	1,494,763		Included	1,494,763
161		WRP - Chandler - Digester Gas Compression	Digester Gas		Houses Gas Compressors (2)	Post/Beam Construction, Metal Roof, Open on two sides & Slab On Grade Foundation		1985	756 sq. ft.	Water Reclamation Plant	Hydrant, Security		None	Yes	X					350,000		Included	350,000
		WRP - Chandler - LPHT	Digester Gas		Low Pressure Holding Tank					Water Reclamation Plant				Yes	X					100,000		Included	100,000
		WRP - Chandler - HPHT	Digester Gas		High Pressure Holding Tank					Water Reclamation Plant				Yes	X					40,000		Included	40,000

City of San Bernardino Municipal Water Dept.
Statement of Values - Water Reclamation Plant & RIX Facilities
Effective: 2016-2017

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155		WRP - Chandler - Flare	Digester Gas		Flare					Water Reclamation Plant	Hydrant, Security		None	Yes	X			2011	$0	150,000		Included	150,000
124	234.00	WRP - Chandler - Hoffman Building	Admin		Hoffman Bldg. Storage (Facility Maintenance and Electric, Instrumentation and SCADA Storage)	Concrete Construction, Built-Up Roof & Slab on Grade Foundation	Storage for Maintenance and EI&S	1979	1,173 sq. ft.	Water Reclamation Plant	Hydrant, Security		None	Yes	X			2011	$312,500	0		Included	312,500
		WRP Burner Building	Admin		Storage & Old Burner (Not In Use)					Water Reclamation Plant				Yes	X				$119,780			Included	119,780
		WRP - Chandler - (EI&S Office/Shops) Climax	Admin		Maintenance Storage						Hydrant, Security	Air Conditioning (Swamp Cooler in Storage Area) Air Conditioning Unit (Roof) for Office Portion of Bldg		Yes	X				$2,146,879			Included	2,146,879
158		WRP - Chandler - Personnel Building (and EI&S Parts Storage)	Admin		Personnel Bldg.	Concrete Construction, Built-Up Roof & Slab on Grade Foundation	Office Space	1969	1,404 sq. ft.	Water Reclamation Plant	Hydrant, Security	Air Conditioning	None	Yes	X			2011	$1,013,220	0		Included	1,013,220
		WRP - Chandler - Electrical, Instrumentation & SCADA Office	Admin		EI&S Shop and Office	Concrete Structure, Built-Up Roof, slab on-Grade Foundation	Office Space	1958	3,467 sq. ft.		No Fire Suppression	Two Heaters		Yes	X	1.00			$537,610			Included	537,610
		WRP - Chandler - Electrician Work Space	Admin		Electrician Work Space	Concrete Structure, Built-Up Roof, slab on-Grade Foundation		1958	880 sq. ft.	Water Reclamation Plant	No Fire Suppression	NA		Yes	X	1.00						Included	0
		WRP - Chandler - Small Parts Storage	Admin		Small Parts (Electrical) Storage	Concrete Structure, Built-Up Roof, slab on-Grade Foundation	Storage	1969	960 sq. ft.	Water Reclamation Plant	No Fire Suppression			Yes	X	1.00						Included	0
		WRP - Chandler - SCADA Trailer	Admin		Portable Office	Portable Trailer, Compo Roof, Raised .	Office Space	1958	1,276 sq. ft.	Water Reclamation Plant	No Fire Suppression			Yes	X				$75,000			Included	75,000
		WRP - Chandler - Tertiary Valve Pit (Abandoned but may be used in future)								Water Reclamation Plant				Yes	X							Included	0
		WRP - Chandler Water Supply/Back Flow Control Structure			Water Supply/Backflow Control					Water Reclamation Plant				Yes	X					10,000		Included	10,000
		WRP- Chandler - Hydropneumatic Tanks (2) (abandoned, but may be used in future)			Hydropneumatic Tanks (2)					Water Reclamation Plant				Yes	X							Included	0
		WRP - Chandler - Irrigation Building (Abandoned, but may be used in the future)			Irrigation Building					Water Reclamation Plant				Yes	X							Included	0
		Valve Vault (Abandoned)			Valve Vault					Water Reclamation Plant				Yes	X							Included	0
		WRP - Chandler - Old Chlorine Room & Lab	Admin			Concrete Construction, Built-Up Roof & Slab on Grade Foundation		1958	780 sq. ft.	Water Reclamation Plant	No Fire Suppression	One Heater		Yes	X							Included	0
		WRP - Chandler - Tertiary Building (to be reclassified as Secondary Effluent Pump Station)	Admin		Tertiary Bldg.	Concrete Construction, Built-Up Roof & Slab & 1/2 Base		1969	1,809 sq. ft.	Water Reclamation Plant	No Fire Suppression			Yes	X				$200,000			Included	200,000
		WRP - Chandler - Irrigation Building	Admin		Irrigation Bldg.	Concrete Construction, Built-Up Roof , Slab & 1/2 Base; and1/2 Open. Wet Well		1969	165 sq. ft.	Water Reclamation Plant	No Fire Suppression			Yes	X							Included	0
125	235.00	WRP - Chandler - Maintenance Shop	Admin		Water Reclamation Maintenance Shop - Storage and Shop	Attached to Arrowhead Pumping station, Metal siding, Concrete Block, Metal Roof, Concrete Foundation Walls and Concrete Slab on Ground. Sealed Floor and Concrete Partitions.	Built-Ins: Cabinets & Tool Sheds, Chain Hoist, Drainage System, Skylight, Motion Detectors & (3) Roll-Up Doors.	1968	2,509 sq. ft.	Water Reclamation Plant	Hydrant, Security	Electrical, Plumbing, Unit Heaters and Evaporative Cooler	None	Yes	X	1.00	3.00	2011	$126,115	29,876		Included	155,991
126	236.00	WRP - Chandler - Locker Room (PART OF PERSONNEL BLDG)	Admin		Water Reclamation Dressing/Shower/Stg	New Roof in 2005 (Built-Up Smooth), Wood Siding on Studs, Poured Concrete Exterior Walls, Concrete Foundation Walls, Concrete Slab on Ground, Floor: Sealer & Terrazzo, Acoustical and Metal Ceiling & Concrete Drywall partitions.	Lockers, Skylights, Emergency Lights, Showers, Storage Room, Electrical Supply Room.	1985	2,376 sq. ft.	Water Reclamation Plant	Hydrant, Security.	Electrical, Plumbing, Roof Top Heating & Air Conditioning	None	Yes	X	1.00	6.00	2011				Included	0

City of San Bernardino Municipal Water Dept.
Statement of Values - Water Reclamation Plant & RIX Facilities
Effective: 2016-2017

	Loc	Facility Name	Process	Sub-Process	Occupancy	Site Information/Construction	Features	Year Built	Size	Occupancy	Protection	Services	Exposure	Properties Covered for Earthquake	Flood Zone	Stories	ISO	Appr Year	Building	Machinery & Equipment	EDP	Business Interruption / Extra Expense	Total
127	237.00	WRP - Chandler - Records Storage Building	Admin		Water Reclamation Office Bldg. (Records Storage) - Converted to Storage in 1985	Interior remodel in 1992; records storage (2nd floor), offices and safety, Stucco on Studs, Roofing: Built-Up Smooth, Concrete Slab Foundation, Asphalt Tile Flooring with Sealant, Drywall Ceiling and Partitions	Built-Ins: Cabinets, Counter & Bookcases; Inactive Exterior Conveyor Belt (2' X 18")	1968	3,600 sq. ft.	Water Reclamation Plant	Fire Alarm, Sprinkler System and Intrusion Security System	Electrical, Plumbing, Heating - Forced Warm Air, Air Conditioning - Forced Air.	None	Yes	X	2.00	1.00	2011	$461,865	75,744		Included	537,609
		WRP - Chandler Mechanical Shop	Admin			Post/Beam Construction, Metal Roof, & Slab On Grade Foundation		1990	2,351 sq. ft.	Water Reclamation Plant	No Fire Suppression			Yes	X							Included	0
		WRP - Chandler - Headworks Underground Storage Tank	Fuel/Chemical Storage		Headworks Underground Storage Tank (Diesel Fuel)	SteelP3 (UST)		1995	10,000 Gals.	Water Reclamation Plant		Interstitial Leak Detection		Yes	X					45,000		Included	45,000
		WRP - Chandler - RS-1 Underground Storage Tank	Fuel/Chemical Storage		RS-1 Underground Storage Tank (Diesel Fuel)	SteelPD (UST)		1988	4,000 Gals.	Water Reclamation Plant		Interstitial Leak Detection		Yes	X					25,000		Included	25,000
		WRP - Chandler - NRC Underground Storage Tank	Fuel/Chemical Storage		NRC Underground Storage Tank (Diesel Fuel)	SteelPD (UST)		1988	4,000 Gals.	Water Reclamation Plant		Interstitial Leak Detection		Yes	X					25,000		Included	25,000
		WRP - Chandler - Arrowhead Pump Station Underground Storage Tank	Fuel/Chemical Storage		Arrowhead Pump Station Underground Storage Tank (Waste Oil)	PTD Steel (UST)		1995	1,000 Gals.	Water Reclamation Plant		Tightness Leak Detection		Yes	X					40,000		Included	40,000
		WRP - Chandler - Cogeneration Underground Storage Tank	Fuel/Chemical Storage		Cogeneration Underground Storage Tank (Waste Oil)	PTD Steel (UST)		2005	1,000 Gals.	Water Reclamation Plant		Tightness Leak Detection		Yes	X					40,000		Included	40,000
		WRP - Chandler - Ferric Chloride Above Ground Storage Tank	Fuel/Chemical Storage		Ferric Chloride Above Ground Storage Tank (Ferric Chloride)	Fiber-Reinforced Plastic (FRP)		1996	6,000 Gals.	Water Reclamation Plant		Visual Leak Detection and Concrete Containment		Yes	X					30,000		Included	30,000
		WRP - Chandler - 12.5% Bleach Above Ground Storage Tank	Fuel/Chemical Storage		Above Ground Storage Tank (12.5% Bleach)	Fiber-Reinforced Plastic (FRP)		1997	13,000 Gals.	Water Reclamation Plant		Visual Leak Detection and Concrete Containment		Yes	X					50,000		Included	50,000
		WRP - Chandler - Bleach Contact Tank	Fuel/Chemical Storage		Above Ground Storage Tank (12.5% Bleach)	Fiber-Reinforced Plastic (FRP)		1992	13,000 Gals.	Water Reclamation Plant		Visual Leak Detection and Concrete Containment		Yes	X					50,000		Included	50,000
		WRP - Chandler - Thickeners Bleach Storage Tank	Fuel/Chemical Storage		Above Ground Storage Tank (12.5% Bleach)	Fiber-Reinforced Plastic (FRP)		1990	13,000 Gals.	Water Reclamation Plant		Visual Leak Detection and Concrete Containment		Yes	X					50,000		Included	50,000
		E Street - WRP Underground Storage Tank	Fuel/Chemical Storage		E Street Pump Station Underground Storage Tank (Diesel)	SteelP3 (UST)		1992	4,000 Gals.	Water Reclamation Plant		Interstitial Leak Detection		Yes	X					25,000		Included	25,000
		WRP - Chandler - Orange Show Well	Water Supply		Orange Show Well					Water Reclamation Plant				Yes	X					40,000		Included	40,000
		WRP- Chandler - Chandler Well	Water Supply		Chandler Well					Water Reclamation Plant				Yes	X					40,000		Included	40,000
		WRP - Chandler - Century Well	Water Supply		Century Well					Water Reclamation Plant				Yes	X					40,000		Included	40,000
TOTAL WRP:																			**$44,035,145**	**$120,414,643**	**$4,896,879**	**$2,500,000**	**171,846,667**

City of San Bernardino Municipal Water Dept.
Statement of Values - Water Reclamation Plant & RIX Facilities
Effective: 2016-2017

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66		RIX	Facility-Wide		SCADA, PLC, Instruments, Security, Flow Meters									Yes							1,664,488	Included	1,664,488
53	253.00	RIX	Admin		RIX Facility Waste Admin Bldg.	Includes small lab, break room, restroom/locker rooms shop area, offices, control area, Masonry Wood Roof	Built-Ins: Cabinets & Bookcases; Covered Entrance Way; Covered Walkway; Mainframe (Operations/Control), Surveillance System, (1) Roll-Up Garage Door, Office e, Break Room, Lockers, Showers, Electrical Room, Storage Room, Small Laboratory and Shop	1995	4,534 sq. ft.		Fire Alarm: Automatic & Manual; Sprinkler System & Intrusion System (with Underground Perimeter Sensors)	Electrical, Plumbing, Heating - Roof Top, Unit Heaters, Air Conditioning - Roof Top & Unit.		Yes	X Shaded	1.00	4.00	2011	854,900	418,200		Included	1,273,100
54	254.00	RIX	Tertiary		US Disinfection	64' x 535' x 8'; concrete underground								Yes	X Shaded			2011	1,144,330			Included	1,144,330
55	255.00	RIX	Tertiary		UV Disinfection									Yes	X Shaded			2011	1,716,495	0		Included	1,716,495
56	256.00	RIX	Tertiary		Electrical Equipment	Transformers: 1-300KVA; 2-500KVA; 2-1,000KVA;Switchboards:1-800 AMP;1-1,600 AMP; Motor Control Centers: 5-600AMP								Yes	X Shaded			2011	6,865,980	0		Included	6,865,980
57	257.00	RIX	Tertiary		Instrumentation System									Yes	X Shaded			2011	260,075	0		Included	260,075
58	258.00	RIX	Tertiary		Sand Washing Plant									Yes	X Shaded			2011	454,105	0		Included	454,105
59	259.00	RIX	Tertiary		Concrete Structures									Yes	X Shaded			2011	572,165	0		Included	572,165
60	260.00	RIX	Tertiary		Concrete	66 inch diameter; concrete, underground								Yes	X Shaded			2011	91,546	0		Included	91,546
61	261.00	RIX	Tertiary		Concrete	36"								Yes	X Shaded			2011	114,433	0		Included	114,433
62	262.00	RIX	Tertiary		Sand Filter	Above ground concrete & steel								Yes	X Shaded			2011	2,028,798	0		Included	2,028,798
63		RIX	Tertiary		Aqua Disk System									Yes	X Shaded					1,095,098		Included	1,095,098
64	263.00	RIX	Tertiary		Rix Pipeline (5 miles)	57" diameter; concrete, underground								Yes	X Shaded			2011	1,945,361	0		Included	1,945,361
65	285.00	RIX	Tertiary		Rix Facility - Lab Bldg. Non-Continuous Office Use.	Exterior Walls: Concrete Block & Decorative Concrete Block; Roofing: Metal Single Membrane; Concrete Slab on Ground Foundation; Flooring: Ceramic Tile with Sealer; Ceiling: Metal; and Concrete Block Partitions.	Built-In Cabinets and Counters	1999			Fire Alarm, Fire Extinguisher & Intrusion Security System	Electrical, Plumbing, Unit Heaters and Air Conditioning Unit.		Yes	X Shaded	1.00	4.00	2011	33,600	16,400		Included	50,000

City of San Bernardino Municipal Water Dept.
Statement of Values - Water Reclamation Plant & RIX Facilities
Effective: 2016-2017

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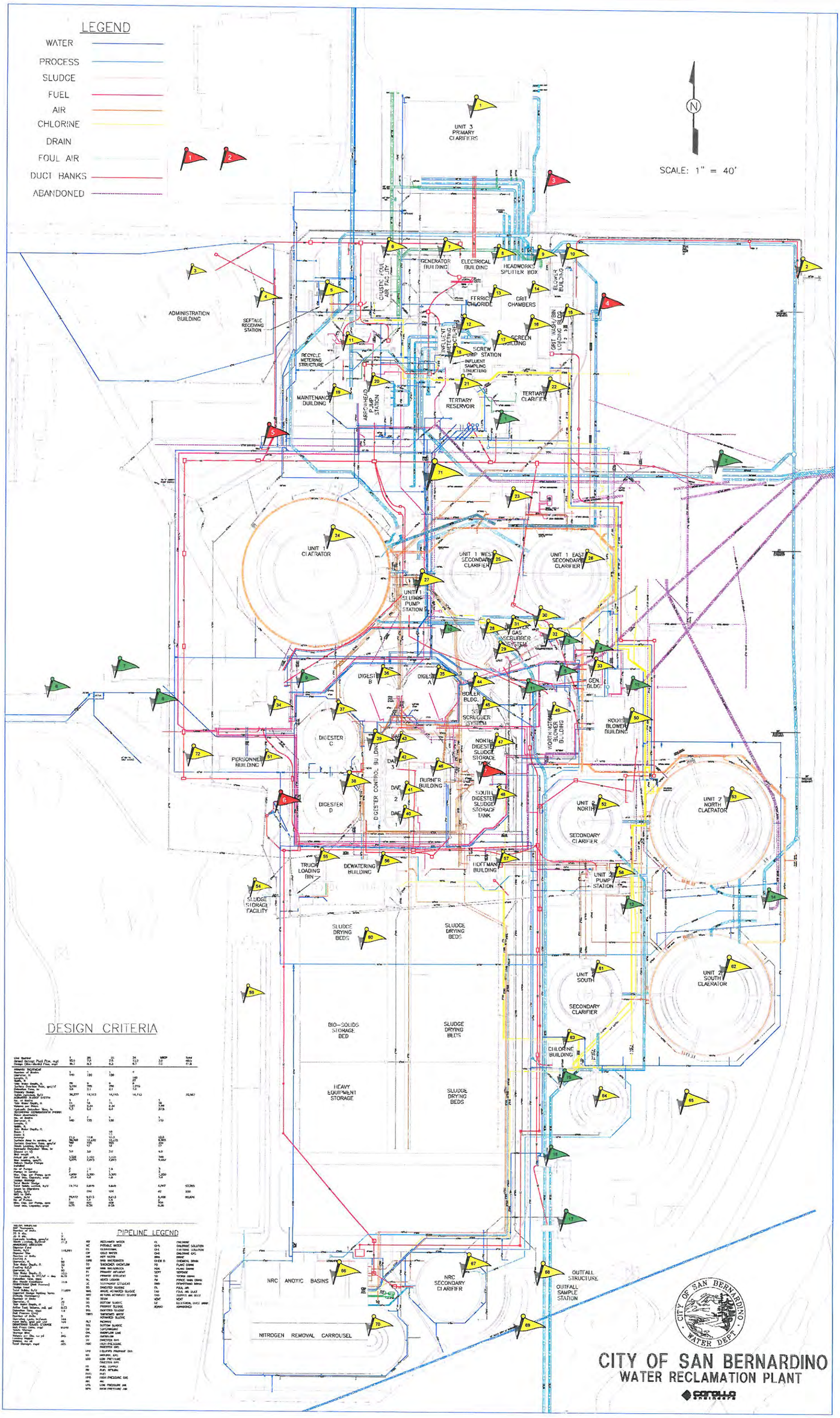
		RIX - Sodium Bisulfite Above Ground Storage Tank	Fuel/Chemical Storage		Above Ground Storage Tank (Sodium Bisulfite)	Fiber-Reinforced Plastic (FRP)		1995	1,300 Gals.	Water Reclamation Plant		Visual Leak Detection with Concrete Containment		Yes	X Shaded							Included	0
		RIX - Sodium Hypochlorite Above Ground Storage Tank	Fuel/Chemical Storage		Above Ground Storage Tank (Sodium Hypochlorite)	Fiber-Reinforced Plastic (FRP)		1994	4,000 Gals.	Water Reclamation Plant		Visual Leak Detection with Concrete Containment		Yes	X Shaded							Included	0
		RIX - Alum Above Ground Storage Tank	Fuel/Chemical Storage		Above Ground Storage Tank (Alum)	Fiber-Reinforced Plastic (FRP)		2001	3,800 Gals.	Water Reclamation Plant		Visual Leak Detection with Concrete Containment		Yes	X Shaded							Included	0
		RIX - Polymer Above Ground Storage Tank	Fuel/Chemical Storage		Above Ground Storage Tank (Polymer)	Fiber-Reinforced Plastic (FRP)		2000	4,000 Gals.	Water Reclamation Plant		Visual Leak Detection with Concrete Containment		Yes	X Shaded							Included	0
		RIX -Building Waste Above Ground Storage (Holding) Tank	Fuel/Chemical Storage		Above Ground Storage (Holding) Tank (Building Waste)	HDPE		1995	2,600 Gals.	Water Reclamation Plant		Visual Leak Detection with Concrete Containment		Yes	X Shaded							Included	0
		RIX -Spent Acid Storage Tank	Fuel/Chemical Storage		Above Ground Storage Tank (Spent Acid)	Fiber-Reinforced Plastic (FRP)		1994	2,600 Gals.	Water Reclamation Plant		Visual Leak Detection with Concrete Containment		Yes	X Shaded							Included	0
		RIX - Hydro Pneumatic (Reclaimed Water) Storage Tank	Reclaimed Water Storage		Above Ground Storage Tank (Reclaimed Water)	Steel		1994	6,000 Gals.	Water Reclamation Plant		Visual Leak Detection		Yes	X Shaded							Included	0
TOTAL RIX:																			**18,081,788**	**1,529,698**	**1,664,488**	**0**	**19,275,974**
	TOTAL WRP + RIX :																		**60,116,933**	**121,944,341**	**6,561,367**	**2,500,000**	**191,122,641**


LEGEND
WATER
PROCESS
SLUDGE
FUEL
AIR
CHLORINE
DRAIN
FOUL AIR
DUCT BANKS
ABANDONED
SCALE: 1" = 40'
UNIT 3 PRIMARY CLARIFIERS
ADMINISTRATION BUILDING
SEPTAGE RECEIVING STATION
GENERATOR BUILDING
ELECTRICAL BUILDING
HEADWORKS SPLITTER BOX
BLOWER BUILDING
FERRIC CHLORIDE
GRIT CHAMBERS
SCREW PUMP STATION
INFLUENT SAMPLING STRUCTURE
RECYCLE METERING STRUCTURE
MAINTENANCE BUILDING
TERTIARY RESERVOIR
TERTIARY CLARIFIER
UNIT 1 CLARIFIER
UNIT 1 WEST SECONDARY CLARIFIER
UNIT 1 EAST SECONDARY CLARIFIER
UNIT 1 SLUDGE PUMP STATION
DIGESTER B
DIGESTER A
DIGESTER C
DIGESTER D
DIGESTER CONTROL BUILDING
BOILER BLDG.
GAS SCRUBBER
GEN. BLDG.
NORTH DIGESTER SLUDGE STORAGE TANK
SOUTH DIGESTER SLUDGE STORAGE TANK
BURNER BUILDING
NORTH BLOWER BUILDING
ROOTS BLOWER BUILDING
PERSONNEL BUILDING
UNIT 2 NORTH SECONDARY CLARIFIER
UNIT 2 NORTH CLARIFIER
UNIT 2 SOUTH SECONDARY CLARIFIER
UNIT 2 SOUTH CLARIFIER
TRUCK LOADING BIN
DEWATERING BUILDING
HOFFMAN BUILDING
UNIT 2 PUMP STATION
SLUDGE STORAGE FACILITY
SLUDGE DRYING BEDS
BIO-SOLIDS STORAGE BED
HEAVY EQUIPMENT STORAGE
CHLORINE BUILDING
NRC ANOXIC BASINS
NRC SECONDARY CLARIFIER
OUTFALL STRUCTURE
OUTFALL SAMPLE STATION
NITROGEN REMOVAL CARROUSEL
DESIGN CRITERIA
PIPELINE LEGEND
CITY OF SAN BERNARDINO
WATER DEPT.
CITY OF SAN BERNARDINO
WATER RECLAMATION PLANT
CORONA ENGINEERING

Legend For San Bernardino Water Reclamation Facility Diagram

6/10/2015

Flag #	Structure	Value	Total	Notes
1	Unit 3 Primary Clarifiers (3A - 3D)	Not Given	4,000,000	*Estimate*
2	Stormwater Junction Box	Not Given	30,000	*Estimate*
3	Administration Building	$5,439,115; $4,603,561; $2,146,879	12,189,555	*Item Nos. 103, 115, & 156*
4	Records Storage/Office Building	537,610	537,609	
5	Septage Receiving Station	125,000	125,000	
6	Caustic Foul Air Facility	443,105	443,104	
7	Headworks Generator Building	5,115,780	5,160,780	*includes $45,000 for diesel storage tank*
8	Headworks Electrical Building	664,572	664,571	
9	Headworks Splitter Box	Not Given	500,000	*Estimate*
10	Headworks Blower Building	Not Given	3,648,012	*Estimate*
11	Recycle Metering Structure	Not Given	500,000	*Estimate*
12	Influent Metering Structure	1,529,590	1,529,589	
13	Ferric Chloride Tank & Pump System	75,000	105,000	*EstimateIncludes $30,000 for ferric chloride storage*
14	Grit Chambers (4)	3,679,069	3,679,068	
15	Grit Washing/Bin Loading Building	4,921,040	4,921,039	
16	Bar Screen Building	3,047,072	3,047,071	
17	Screw Pump Station (East Influent)	312,500	312,500	
18	Influent Sampling Structure	100,000	100,000	
19	Maintenance Building	155,992	155,991	
20	Arrowhead Pump Station	6,279,430	6,319,430	*Includes $40,000 for underground tank*
21	Tertiary Reservoir (Utility Water)	1,583,994	1,583,993	
22	Tertiary Clarifier (Abandoned)	Not Given	0	
23	RS-1 Building	1,150,200	1,175,200	*Includes $25,000 for Underground storage tank*
24	Unit 1 Claerator	10,000,000	10,000,000	
25	Unit 1 West Secondary Clarifier	2,619,786	2,619,785	
26	Unit 1 East Secondary Clarifier	2,619,786	2,619,785	
27	Unit 1 Sludge Pump Station	312,500	312,500	
28	Chlorine Contact Tank (Unit 1)	Not Given	125,803	*Estimate*
29	Low Pressure Holding Tank (Digester Gas)	Not Given	100,000	*Estimate*
30	High Pressure Holding Tank (Digester Gas)	Not Given	40,000	*Estimate*
31	Digester Gas Scrubbing System (Abandoned) Hyperion	Not Given	125,000	
32	Gas Compression Building (Digester Gas)	350,000	350,000	
33	Generator Building (Old Blue, Natural Gas)	382,312	382,312	
34	EI&S Offices/Shops (Climax Building)	$537,610; $2,146,879	2,684,489	
35	Digester A	2,870,650	2,870,649	
36	Digester B	2,870,650	2,870,649	
37	Digester C	2,870,650	2,870,649	
38	Digester D	2,870,650	2,870,649	
39	Digester Control Building	1,147,250	1,147,250	
40	DAF 1	3,356,598	3,356,597	*Includes DAFs (1-4)*
41	DAF 2	See Note for DAF1		
42	DAF 3	See Note for DAF1		
43	DAF 4	See Note for DAF1		
44	Boiler Building	Not Given	200,000	*Estimate*
45	SST Scrubber System	Not Given	0	*Estimate*
46	Burner Building	119,780	119,780	
47	North Digested Sludge Storage Tank	1,385,856	1,385,855	*Includes North and South Digested Sludge Tanks*
48	South Digested Sludge Storage Tank	See Note for North Digested Sludge Tank		
49	Worthington (Cogeneration Engine) Building	5,115,780	5,115,780	
50	Roots Blower Motor Building	5,407,200	5,407,200	
51	Personnel Building (and EI&S Parts Storage)	$477,627; $535,593	1,013,220	
52	Unit 2 North Secondary Clarifier	2,619,786	2,619,785	
53	Unit 2 North Claerator	10,000,000	10,000,000	
54	Sludge Storage Facility	1,494,763	1,494,763	*Includes Loading Bin (Item No. 131)*
55	Truck Loading Bin	See Note for Sludge Storage Facility		*Item No. 132*
56	Dewatering Building	$8,556,505; $1,500,000; $267,237	10,323,742	

Flag #	Structure	Value	Total	Notes
57	Hoffman Building	312,500	312,500	
58	Unit 2 Pump Station	Not Given	450,000	Estimate
59	Brine Ponds (North and South)	Not Given	50,000	Estimate
60	Drying Beds and Heavy Equipment Storage	961,248	961,248	Under Land Improvements
61	Unit 2 South Secondary Clarifier	2,619,786	2,619,785	
62	Unit 2 South Claerator	10,000,000	10,000,000	
63	Chlorine Building	1,276,743	1,326,743	Includes $50,000 for bleach storage
64	Unit 2 Chlorine Contact Tank	$125,803; $124,100; $50,000	299,903	Includes $50,000 for bleach storage
65	Chlorine Contact Lagoon	Not Given	150,000	Estimate
66	NRC Anoxic Basins	See Note For NRC Secondary Clarifier		
67	NRC Secondary Clarifier	2,645,628	2,670,628	Includes NRC Anoxic Basins, and Nitrogen Removal Carrousel and $25,000 for Diesel storage tank)
68	Outfall Sampling Station	Not Given	25,000	Estimate
69	Outfall Structure	Not Given	25,000	Estimate
70	Nitrogen Removal Carrousel	See Note For NRC Secondary Clarifier		
71	Process Piping, Lining and Electrical	18,588,490	21,088,490	
72	EI&S Trailer		75,000	Estimate
	Unidentified Structures (Identified on Field Review)			
1	Tertiary Building (to be reclassified as **Secondary Effluent Pump Station**).		200,000	Estimate
2	East Hydraulic Structure		50,000	Estimate
3	MCC-CO		100,000	Estimate
4	Waste Gas Burner		150,000	Estimate
5	Tertiary Valve Pit (abandoned, but may be used in future)		0	
6	Water Supply/Back Flow Control		10,000	Estimate
7	Hydropneumatic Tanks (2) (abandoned, but may be used in future)			
8	Irrigation Building (abandoned, but may be used in future)			
9	Valve Vault (abandoned)			
10	Facilities Maintenance Shop		40,000	Estimate
11	Planter			
12	Waste Oil Storage (below grade)		40,000	Estimate
13	Non-Departmental High Voltage Tower			
14	Unit 2 Flow Distribution Box		50,000	Estimate
15	Secondary Effluent Vault		20,000	Estimate
16	Plant Effluent/Chlorine Contact Lagoon Influent Flow Control/Metering Structure		75,000	Estimate
17	Plant Effluent Sampling/Chlorine Contact Lagoon Effluent Flow Metering Structure		40,000	Estimate
	Added Structures			
1	Orange Show Well		40,000	Estimate
2	Verizon Cell Tower (non-department)			
3	Headworks/Unit 3 Tunnel System		1,500,000	Estimate
4	PIPL Flow Metering Structure		75,000	Estimate
5	Chandler Well		40,000	Estimate
6	Century Well		40,000	Estimate
7	Thickener Building		550,000	Estimate includes $50,000 for bleach storage
	TOTAL:		**166,828,051**	

YEAR	VEH	ASSET	DEPT	MAKE MODEL	EQUIP CATEGORY	ASSIGNED TO	VIN-EIN	SERIAL NO	LICENSE NO	CDL	FUEL TYPE	TANK SIZE	DPF INST	ARB-AQMD Reg No-Exp	PURCHASED	PURCHASE COST	NOTES
CITY OF SAN BERNARDINO MUNICIPAL WATER DEPARTMENT MOBILE EQUIPMENT 2015-16																	
2014	1003		2040	Caterpillar D4K2	Dozer	Pool	EIN - KN4B86	CAT0D4K2TKMM00420	N/A	N/A	D	50	Factory	DOORS	03/31/14	$ 122,328.00	
2013	1039	6828.	2040	New Holland U80C	4WD Skip Loader	Pool	EIN - FU7N95	JJGNV80CVDC594014	N/A	N/A	D		Factory	DOORS	09/18/13	$ 70,384.15	
2003	1040	4294.	2040	Stanley breaker - Mod 656	attachment	Pool - 1043-1044		52881112--580M	N/A	N/A	N/A	N/A			06/16/03	$ 4,219.41	
2013	1051	6829.	2040	New Holland L225	Skid Steer Loader	Pool	EIN - CB9Y54	NDM473260	N/A	N/A	D	30		DOORS	09/19/13	$ 43,078.09	
2013	1052	6830.	2040	New Holland X1975 - Auger - 9i. & 12in bits	Attachment	Pool	Attchment - 1051	C113027	N/A	N/A	N/A	N/A			09/19/13	$ 4,546.50	
2013	1053	6831.	2040	Bradco 625 - Trencher	Attachment	Pool	Attachment - 1051	340697	N/A	N/A	N/A	N/A			09/19/13	$ 3,215.03	
2014	1060		2040	Advance SW8000	77D Sweeper	Pool	EIN - EK3H63	1000052782	N/A	N/A	D	10	DOORS		04/10/14	$ 41,421.46	
2010	1062	6415.	2040	Yale - model ERP050VLE80TE083 - 4750 cap.	Forklift truck	Stockroom		A976B01529H	N/A	N/A	Elect.	Elect.			04/22/10	$ 42,701.84	
2009	1063	6334.	2040	Yale - Model F912207 - 5300 lb. cap.	Forklift truck	WU Yards Pool		B875V02787G	N/A	N/A	Propne	Propane			07/17/09	$ 30,188.75	
2002	1077	3569.	2040	Ingersol Rand Model-P185R	Air Compressor	Fleet spare	4FVCABAAX2U328327	328327UCM231	SE518857	N/A	D	40			04/12/02	$ 11,742.60	
2013	1196	6779.	2040	Rotary Lift U100	Equipment Lift	Fleet		HBD13C0011	N/A	N/A	E	N/A			03/28/13	$10,919.07	
2013	1197	6780.	2040	Rotary Lift U100	Equipment Lift	Fleet		HBD13C0013	N/A	N/A	E	N/A			03/28/13	$10,919.07	
2013	1198	6781.	2040	Rotary Lift U100	Equipment Lift	Fleet		HBD13C0015	N/A	N/A	E	N/A			03/28/13	$10,919.07	
2013	1199	6782.	2040	Rotary Lift U100	Equipment Lift	Fleet		HBD13C0016	N/A	N/A	E	N/A			03/28/13	$10,919.07	
	1210		2040	FS HTA100	Air compressor	Garage	Installed at Garage	E19278	N/A	N/A	E	N/A			N/A	N/A	
1991	181	940	2045	Int'l 4900	Flat Bed Crane Truck	Pool truck-Crane	1HTSDZ7N7MH314130		290579	B	D	50	9/23/2009	DPF ser. MK00781	07/31/90	$ 91,625.98	
1999	186	4769	2045	Volvo VE	Flat Bed Crane Truck	Pool truck-Crane	4V5JCBGF2XN865177		1149083	A	D	50	1/16/2008	DPF ser. 1352	05/16/04	$ 64,964.38	
2001	220	3008	2045	Ford F150	Pickup	Fleet spare	1FTRF17L31NA87876		1087901	C	G	25			01/23/01	$ 19,507.55	
2006	242	4943	2045	Ford F-550 4x4	Lube Truck	Garage - Fuel Trk	1FDAF57P76EC86410		1202965	C	D	35	12/3/2010		03/16/06	$ 35,194.78	
1991	357	978	2045	Ford F800	Dump Truck - 5 yd.	Pool truck - dump	1FDXK84A7MVA34094		355277	C	D	35	11/23/2011		08/21/91	$ 41,907.50	
2009	358	6227	2045	Ford F-550	Dump Truck - 5 yd.	Pool	1FDAF56Y79EA00912		1327548	C	G	35			10/16/08	$ 27,868.02	
1995	359	980	2045	Ford F800	Dump Truck - 5 yd.	Pool truck - dump	1FDWF80C8SVA52317		10465	C	D	35	9/21/2009		06/01/95	$ 38,872.58	
2000	360	6451	2045	Freightliner - FLD120	Dump Truck - 10 yd.	Pool truck - dump	1FUYDSEB5YPF55716		1356932	B	D	100	2/4/2011		09/16/10	$ 19,634.81	
1984	382	982	2045	Ford F700 ***With trailer #1162	CRANE TRUCK W/ HYDRALIFT	Pool truck (no crane)	1FDXF70K3EVA25245		460302	A	G	50			05/29/84	$ 35,204.31	
2012	402	6816	2045	Ford F650	Water Truck - 2000 gal	Pool Truck - Water	3FRNF6HD1CV313569		1409633	C	G	60			07/01/13	$ 77,946.17	
1998	503	481	2045	Ford E250	Van	Fleet spare	1FTNE24L0WHA31072		377977	C	G	30			11/07/97	$ 22,302.10	
2001	516	2924	2045	Ford F150	Pickup	Fleet spare	1FTRF17W51NA37054		1081867	C	G	20			12/12/00	$ 18,495.29	
2001	580	2932	2045	Ford F150	Pickup	Fleet Spare	1FTRF17W01KF49094		1081943	C	G	25			11/16/00	$ 18,306.73	
2011	591	6588	2045	Ford F-750	Personnel lift	WRP/WU - Pool	3FRNF7FB9BV565737	0711CV11057-lift	1368857	C	D/DEF	45/5	Factory		09/13/11	$ 130,576.02	
1983	244	495	2045	Nordskog cart model 280A	Electric cart	Garage		204547	N/A	N/A	N/A	N/A			05/10/83	$ 4,412.40	
1986	246	507	2045	Nordskog electric cart model 280a	Electric cart	WRP			N/A	N/A	N/A	N/A			06/30/89	$ 4,378.86	
1993	551	185	2045	Clark GPS 12	Forklift	WU Yards - pool		GP12701539240	N/A	N/A	G	10			06/03/93	$ 15,268.18	
	1088		2045	Mikasa - Model MVC77	Compactor plate	Fleet spare		PG13230412	N/A	N/A	G	1			N/A	N/A	
	1146		2045	Multi-Quip - 6000W - GA-6HZR	Portable gen.	Fleet spare			N/A	N/A	G	5			N/A	N/A	

YEAR	VEH	ASSET	DEPT	MAKE MODEL	EQUIP CATEGORY	ASSIGNED TO	VIN-EIN	SERIAL NO	LICENSE NO	CDL	FUEL TYPE	TANK SIZE	DPF INST	ARB-AQMD Reg No-Exp	PURCHASED	PURCHASE COST	NOTES
CITY OF SAN BERNARDINO MUNICIPAL WATER DEPARTMENT MOBILE EQUIPMENT 2015-16																	
2013	1164		2045	Pace - Enclosed trailer	Trailer	Pool	53BPTEA24EF006960	High line	1415808	N/A	N/A	N/A			09/19/13	$ 4,997.74	
2013	1167		2045	Zieman	Equipment trailer	Pool	1ZCE39E29DZ340931	1ZCE39E29DZ340931	1413448	A	N/A	N/A			08/01/13	$ 17,352.48	
2013	1169		2045	Zieman	Equipment trailer	Pool	1ZCE39E20DZ340932	1ZCE39E20DZ340932	1413442	A	N/A	N/A			08/01/13	$ 17,352.48	
2013	1174		2045	Big Tex Flat Trailer - 60CH	Equipment trailer	Pool	16VCX162XD2D80747	Shoring	1418507	N/A	N/A	N/A			08/22/13	$ 2,780.94	
2013	1176		2045	Big Tex Flat Trailer - 60CH	Equipment trailer	Pool	16VCX1629D2D62885	Shoring	1418506	N/A	N/A	N/A			08/22/13	$ 2,780.94	
1991	401	985	2045	Intern'l Mod 4900	Water Truck - 4000 ga.	Pool truck - tank	1HTSHNHT6MH308989		290578	B	D	50	9/16/2009	DPF ser. MK00778	06/19/90	$ 63,051.07	
2004	533	4702	2090	Gem E-825	Electric cart	Meter Shop	5ASAK27454F034022		1149063	C	N/A	N/A			11/26/03	$ 10,125.91	
2005	1020	4903.	3021	Caterpillar 420D turbo 4X4	Med backhoe	Tim Barta	EIN - PA6K69	CAT0420DLFDP24704	N/A	N/A	D	40	9/23/2009	DPF ser. MK00780;	08/18/05	$ 68,058.13	
2009	1041	6442.	3021	New Holland U80B	Skip Loader	Pool	EIN - VT9G63	N8C511213	N/A	N/A	D	30		DOORS	06/16/10	$ 49,153.55	
2010	1044	6450.	3021	New Holland B110B	Backhoe	Joe Chavez	EIN - DM9B97	NAGH00557	N/A	N/A	D	30		DOORS	09/09/10	$ 79,297.50	
2010	1045	6515.	3021	New Holland B95B	Backhoe	Jason Berg	EIN - VJ8A45	NAHH00365	N/A	N/A	D	30		DOORS	12/07/10	$ 67,465.55	
2010	1046	6516.	3021	New Holland B95B - LR	Backhoe		EIN - BN3K96	NAHH00386	N/A	N/A	D	30		DOORS	12/07/10	$ 67,465.55	
2010	1047	6517.	3021	New Holland B95B	Backhoe	John Horner	EIN - PR5L53	NAHH00366	N/A	N/A	D	30		DOORS	12/07/10	$ 67,465.55	
2010	1048	6518.	3021	New Holland B95B - LR	Backhoe	Dave Hernandez	EIN - EU5G46	NAHH00539	N/A	N/A	D	30		DOORS	01/13/11	$ 67,465.55	
2003	1069	3108.	3021	Mikasa - Model MTX70 on cwd built trailer	Vactor Vacuum-trailer	Pool	CA1008150,	EQ. # 1041503	SE545575	N/A	G	2			06/13/01	$ 11,610.00	
2010	1070	6359.	3021	Ingersol Rand Model-P185R	Air Compressor	Tim Barta	4FVCABAA5AU410710	410710UKTD11	SE561898	N/A	D	40			12/11/09	$ 16,878.65	
2008	1071	6231.	3021	Ingersol Rand Model-P185R	Air Compressor	Dave Hernandez	4FVGABAA29U404116	404116UH5011	SE561863	N/A	D	30			10/13/08	$ 16,524.00	
2010	1073	6360.	3021	Ingersol Rand Model-P185R	Air Compressor		4FVCABAA9AU410712	410712UKTD11	SE561897	N/A	D	40			12/11/09	$ 16,878.65	
2010	1075	6361.	3021	Ingersol Rand Model-P185R	Air Compressor	Joe Chavez	4FVCABAA7AU410711	410711UKTD11	SE561896	N/A	D	40			12/11/09	$ 16,878.65	
2013	1076		3021	Chicago Pneumatic Model CPS185JD	Air Compressor		4500A1010DR044123	8972426055	SE562212	N/A	D	30			10/21/13		
2008	1079	6232.	3021	Ingersol Rand Model-P185R	Air Compressor	John Horner	4FVCABAA09U404115	40411UHSD11	SE561864	N/A	D	30			10/14/08	$ 16,524.00	
2006	1080		3021	Wacker, Model BS50-4, Tamping Rammer	Compactor	Pool		5663573	N/A	N/A	G	1			N/A	N/A	
2009	1081		3021	Mikasa - Model MTX70	Compactor	Tim Barta		T-2891	N/A	N/A	G	1			09/09/08	N/A	
2009	1082		3021	Mikasa - Model MTX70	Compactor	Tim Potter		T-3091	N/A	N/A	G	1			09/09/08	N/A	
2008	1084		3021	Mikasa - Model MTX70	Compactor	Joe Chavez		S-8593	N/A	N/A	G	1			06/25/08	N/A	
2008	1085		3021	Mikasa - Model MTX70	Compactor	Dave Hernandez		R-7800	N/A	N/A	G	1			07/16/08	N/A	
2008	1086		3021	Mikasa - Model MTX70	Compactor	John Horner		R-7785	N/A	N/A	G	1			07/16/08	N/A	
2009	1089		3021	Mikasa - Model MTX70	Compactor	Pool		T-3102	N/A	N/A	G	1			09/09/09	N/A	
2003	1090	4580	3021	Wacker LT4	Floodlight trailer	Pool	5AJLS1612YB000577		SE519088	N/A	D	20			07/23/03	$ 6,896.00	
2003	1091	4581.	3021	Wacker LT4	Floodlight trailer	Pool	5AJLS1614YB000578		SE519087	N/A	D	20			07/23/03	$ 6,896.00	
2014	1093		3021	Mikasa - Model MTX80	Compactor		Purchased 7-30-14	z-2180							07/30/14		
1993	1103	140.	3021	Stone - model 95CMED	Concrete Mixer	Pool		1031172	SE449570	N/A	G	1			04/05/93	$ 3,750.78	
	1105	2948.	3021	Stone - model 45CM	Concrete Mixer	Pool		33002491		N/A	G	1			08/11/00	$ 1,615.17	
	1106	3346.	3021	Stone - model 45CM	Concrete Mixer	Pool		282001238		N/A	G	1			07/03/01	$ 1,716.78	

YEAR	VEH	ASSET	DEPT	MAKE MODEL	EQUIP CATEGORY	ASSIGNED TO	VIN-EIN	SERIAL NO	LICENSE NO	CDL	FUEL TYPE	TANK SIZE	DPF INST	ARB-AQMD Reg No-Exp	PURCHASED	PURCHASE COST	NOTES
CITY OF SAN BERNARDINO MUNICIPAL WATER DEPARTMENT MOBILE EQUIPMENT 2015-16																	
2009	1110		3021	Husqvarna - Model FS400LV	Concrete Saw	Pool		8175	N/A	N/A	G	2			08/09/10	N/A	
2009	1111		3021	Husqvarna - Model FS400LV	Concrete Saw			8422	N/A	N/A		2			08/09/10	N/A	
1990	1112	143.	3021	Target - model MCS85	Concrete Saw	Pool		41232	N/A	N/A	G	1			04/24/90	$ 1,052.24	
1988	1113	145.	3021	M.K. DIAMOND, MOEL MK2001, BLOCK/BRICK	Concrete Saw	Pool		1558,	N/A	N/A	N/A	N/A			09/06/88	$ 1,072.72	
1992	1114	819.	3021	Target - model MCS11-11H	Concrete Saw	Pool		107177	N/A	N/A	G	1			01/24/92	$ 1,591.47	
2007	1118	6054.	3021	Vactor trailer -JV30PH-8	Trailer-w/attc	Pool	1J9BU08157L319062		1181396	N/A		1			02/01/07	$ 19,847.55	
2008	1119	6233.	3021	MK Diamond Mod. 2020HSP	Concrete Saw	Pool		582545	N/A	N/A	G	1			10/30/08	$ 5,046.84	
2012	1120	6819.	3021	Vactor Trailer - Big Tex	Trailer - W/Att	Pool	16AXD815D2A59138	vactor-1041503	1400256	N/A	N/A				N/A	N/A	
2013	1121	6820.	3021	Highway Safety	Traffic cont. message board	Pool	1M9BM091XDC570369		645563	N/A	E				08/22/13	$ 15,696.25	
2013	1122	6821.	3021	Highway Safety	Traffic cont. message board	Pool	1M9BM0916DC570370		645564	N/A	E				08/22/13	$ 15,696.25	
2013	1125	6822.	3021	Highway Safety	Traffic cont. sign board	Pool	1M9BA0915DC570367		645561	N/A	E				08/22/13	$ 3,951.13	
2013	1126		3021	Highway Safety	Traffic cont. sign board	Pool	1M9BA0917DC570368		645562	N/A	E				08/22/13	$ 3,951.13	
2000	1127	2946.	3021	Arrowboard, National Signal	Traffic cont. sign board	Pool	1S9A71012YL358099		SE495947	N/A	N/A	N/A			08/06/00	$ 4,794.88	
2002	1128	3550.	3021	Hiway Solar Guide Arrowboard	Traffic cont. sign board	Pool	1M9BA09141C570132		SE518854	N/A	N/A	N/A			03/08/02	$ 4,412.36	
2002	1129	3919.	3021	Hiway Model FD221 Arrowboard	Traffic cont. sign board	Pool	1M9BA09163C570327	Model F221	SE519085	N/A	N/A	N/A			08/22/02	$ 4,412.36	
2006	1130		3021	Hiway Model FD221 Arrowboard	Traffic cont. sign board	Pool	1M9BA09166C570669	Model F221	SE561887	N/A	N/A	N/A			N/A	N/A	
2009	1131		3021	Multi-Quip - Model - QP-3TH	Trash Pump	Pool		3TH-15703	N/A	N/A	G	2			N/A	N/A	
2003	1134	4636.	3021	CH&E, Model 2860 4"	Trash Pump	Pool	CA940342	CA940342 -	SE519089	N/A	D	40			09/11/03	$ 13,139.47	
2014	1135		3021	Godwin - CD103M	Trash Pump	Pool	16MPF0519ED070037	14622757/01 pump	SE562207	N/A	D	40			08/28/14	$ 32,900.00	
1986	1136	153.	3021	Multiquip - model 6P-40TA, 4"	Trash Pump	Pool		40TA1372	SE449568	N/A	G	20			06/30/86	$ 1,539.12	
2002	1137	3844.	3021	CH&E model 2860T, 4"	Trash Pump	Pool		TO20659	SE561908	N/A	D	40					
2014	1140		3021	Godwin - CD103M	Trash Pump	Pool	16MPF0514ED070382	14621968/02 pump	SE562208	N/A	D	40			08/28/14	$ 32,900.00	
1973	1160	394.	3021	Birmingham - model815TTLR	Equipment trailer	On #382		CL067,	309605.	N/A	N/A	N/A			06/19/73	$ 7,833.28	
2009	1163		3021	2 axle flat - stake bed	Equipment trailer	Pool	CA1080562		1202947	N/A	N/A	N/A			N/A	N/A	
1983	1172	420.	3021	Scottsman 8' X 16' office	Equipment trailer	Pool		CA8319F00009723	914062	N/A	N/A	N/A			10/23/90	$ 3,960.33	
1995	1175	424.	3021	E-Z dump - model EZ-508-D	Equipment trailer	Pool		1V9DS0810SW061373	947041	N/A	N/A	N/A			10/30/95	$ 2,688.36	
	1208		3021	Graco - model 530,	paint sprayer	Pool		1057531	N/A	N/A	G	1			N/A	N/A	
2010	1043	6449.	3023	New Holland B110B	Backhoe	Pool	EIN - EU4W69	NAGH00554	N/A	N/A	D	30		DOORS	09/09/10	$ 79,297.50	
2008	1087		3023	Mikasa - Model MTX70	Compactor			R-7784	N/A	N/A	G	1			07/16/08	N/A	
2013	1072		3023	Chicago Pneumatic Model CPS185JD	Air Compressor		4500A1018DR044122	A1A1832979	SE562213	N/A	D	30			10/21/13		
1998	1177	428.	3023	Caterpillar - model 3406 400 KW	Genset	WU Yards stationary	4AG4U22D4WC027514	S/N 4ZR94456	SE561891	N/A	D	250		R-F20271 - AQMD	12/07/98	$ 62,638.31	
	1211		3040	Champion BRA15-12	air compressor	Weld Shop	Installed at weld shop	9562-02	N/A	N/A	E	N/A			06/19/95	$ 3,959.81	
2011	1132	6580.	3041	Thompson 4045TF280B	Booster Pump	Pool	1T9PT1312BP634042	4JA-259	623048	N/A	D	20			08/01/11	$ 25,840.03	
2011	1133	6581.	3041	Thompson 4045TF280B	Booster Pump	Pool	1T9PT1312BP634043	4JA-260	628542	N/A	D	20			08/01/11	$ 25,840.03	

YEAR	VEH	ASSET	DEPT	MAKE MODEL	EQUIP CATEGORY	ASSIGNED TO	VIN-EIN	SERIAL NO	LICENSE NO	CDL	FUEL TYPE	TANK SIZE	DPF INST	ARB-AQMD Reg No-Exp	PURCHASED	PURCHASE COST	NOTES
CITY OF SAN BERNARDINO MUNICIPAL WATER DEPARTMENT MOBILE EQUIPMENT 2015-16																	
1971	1138	158.	3041	Berkeley - model B3JRBM	Booster pump	Pool		28392-519KR	90178	N/A	G	80			05/18/71	$ 4,057.90	
1971	1139	159.	3041	Berekley - model B3JRBM	Booster pump	Pool		26748-R-11-HM	90177	N/A	G	80			05/18/71	$ 3,952.80	
2005	1141	4907.	3041	Thompson 8JSCE-DJDST-68T-MC	Booster pump	Pool	1T9PH15225P634235		SE562165	N/A	D	50		130243 - 03-31-11	09/08/05	$ 49,968.00	
2005	1142	4921.	3041	Thompson 8JSCE-DJDST-68T-MC, 2700 GPM	Booster pump	Pool	1T9PH14275P634382		SE562162	N/A	D	50		130244 - 03-31-11	12/01/05	$ 49,967.54	
	1144	2122.	3041	Caterpillar 6 RT/angle drive G342	Well Pump	NEWMARK-IN #4	(With installed air comp)	71B788	N/A	N/A	NAT-G	N/A			09/30/76	$ 14,446.31	
	1145	1541.	3041	Climax 8 RT/Angel A8V103B	Well Pump	CAJON-IN	(With installed air comp)	A8V3CJ268	N/A	N/A	NAT-G	N/A			06/22/84	$ 39,284.00	
2008	1148	6312.	3041	Generator Services MD400 - 400KW	Genset	Operations	4AG5U28319C042446 -	2101039	SE562163	N/A	D	400		147532 - 05-31-12	06/30/09	$ 110,206.51	
2008	1149	6313.	3041	Generator Services MD400 - 400KW	Genset	Operations	4AG5U28339C042447	2101040	SE562160	N/A	D	400		147531 - 05-31-12	06/30/09	$ 110,206.51	
2008	1150	6314.	3041	Generator Services MD400 - 400KW	Genset	Operations	4AG5U28359C042448 -	2101041	SE562161	N/A	D	400		147530 - 05-31-12	06/30/09	$ 110,206.51	
2000	1153	1128.	3041	Olympian - Model D150P4, 150 KW	Genset	Operations	4AG3U1926XC030572	E6122A/001	SE562159	N/A	D	200		129578 - 02-28-11	03/24/00	$ 42,030.00	
2001	1154	3010.	3041	Caterpillar - model 3306 DITA 250 KW	Genset	Operations	4AG3U19241C034109	9NR05195	SE562157	N/A	D	250		129577 - 02-28-11	06/11/01	$ 38,132.40	
2001	1155	3011.	3041	Caterpillar - model3306 DITA,250 KW	Genset	Operations	4AG3U19201C034110	9NR05196	SE652158	N/A	D	250		129579 - 02-28-11	06/11/01	$ 38,132.40	
2006	1156	6070.	3041	Caterpillar - Molel C15 500KW	Genset	Operations	4AG6U30386C040095	CAT00000CC5E00260	SE562155	N/A	D	300		142485 - 02-28-11	04/30/07	$ 132,736.66	
2006	1157	6071.	3041	Caterpillar - Model C15 500KW	Genset	Operations	4AG6U30366C040094	CAT00000TC5E00261	SE562164	N/A	D	300		142487 - 02-28-11	04/30/07	$ 132,736.67	
2006	1158	6072.	3041	Caterpillar - Model C15 500KW	Genset	Operations	4AG6U30346C040093	CAT00000PC5E00262	SE562156	N/A	D	300		142486 - 02-28-11	04/30/07	$ 132,736.67	
1990	1173	422.	3041	Western chlorination model 202C5	Equipment trailer	Pool			950111	N/A	G	N/A			06/25/91	$ 14,377.50	
2005	1178		3041	Cummins - model DSHAC-5742375	Genset	MELVIN stationary		K0508-48670	N/A	N/A	D	250		G-4860 - AQMD	N/A	N/A	
	1179		3041	Ford Indistrial LSG-4231-6006-F	Generator 30KW	19TH ST.		03078-3-25-RL	N/A	N/A	NAT-G	N/A			N/A	N/A	
2014	1180		3041	Cummins - C200D6R - 200KW	Genset		5632G1921DM010510	H140723316		1180		250					
2012	1057	6611.	3042	John Deere	Ag Tractor	Shawn Cross		1PY5045DJBB004347	N/A	N/A	D	25		DOORS	04/26/12	$ 14,644.94	
2012	1058	6758.	3042	Gearmore/Seppi-M flail GCF69T	Attach #1057	unit 1057		GCF69T-35111-0037	N/A	N/A	N/A	N/A			07/30/12	$ 6,632.72	
1987	1205	442.	3042	Speed flo Commander 441-321	paint sprayer	Pool		11414	N/A	N/A	G	1			03/10/87	$ 2,538.70	
	1216	456.	3042	SDI200 - model 200-11H5M	weed sprayer	Shawn Cross		50179	SE465422	N/A	G	1			05/22/96	$ 6,837.82	
	1217	550.	3042	Dosco branch chipper - model 510SD	Misc. Equipment	Shawn Cross		5109807		N/A	G	1			10/30/97	$ 10,176.99	
2005	1030	4917.	3043	Caterpillar 420D turbo 4X4	Med backhoe	Bob Chilcote	EIN - RW7H74	CAT0420DKFDP24727	N/A	N/A	D	25	9/23/2009	DOORS	11/03/05	$ 70,780.98	
	1107	4574.	3043	Stone 55CM Electric	Concrete Mixer	Pool		232002068		N/A	N/A	N/A			07/17/03	$ 2,044.02	
1978	1200	434.	3043	RIGID threader model 444	Misc. Equipment	Pool		040165,	90192	N/A	N/A	N/A			02/07/78	$2,579.67	
	1201	435.	3043	Rigid threader model 535	Misc. Equipment	Pool		CZ51758,	314472	N/A	N/A	N/A			10/04/77	$ 1,201.69	
1988	1214	454.	3043	SAW, THOR, STEWART WARNER PNEUMATIC, MODEL 805668	Misc. Equipment	Pool		688	N/A	N/A	N/A	N/A			03/15/88	$ 1,254.09	
1991	1215	455.	3043	Drilling Machine, Mueller, Model M63740,H-600 AIR MOTOR	Misc. Equipment	Pool	W/ATTACHMENTS	C1-36-99002C	N/A	N/A	N/A	N/A			11/12/91	$ 17,378.90	
2014	620	6913	4020	Club Car	Electric cart	WRP Operations	5J5LC22BXEA466713		1419081	N/A	N/A	N/A			01/14/14	$ 18,746.98	
	555	518	4020	Diahatsu Pick-up	Utility - off road		JDA000S8000309651		N/A	N/A	.	10			03/04/94	$ 11,487.23	
2011	600	6524	4020	Ingersol-Rand ClubCar	Electric cart	WRP - Ops		JR1119-192965	N/A	N/A	N/A	N/A			04/25/11	$ 13,497.13	
2011	601	6525	4020	Ingersol-Rand ClubCar	Electric cart	WRP - Ops		JR1136-225471	N/A	N/A	N/A	N/A			04/25/11	$ 13,497.13	

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CITY OF SAN BERNARDINO MUNICIPAL WATER DEPARTMENT MOBILE EQUIPMENT 2015-16																	
2012	602	6587	4020	Ingersol-Rand ClubCar	Electric cart	WRP - Ops		JR1203-257182	N/A	N/A	N/A	N/A			09/01/11	$ 13,583.69	
2012	603	6589	4020	Ingersol-Rand ClubCar	Electric cart	WRP - Ops		JR1203-257184	N/A	N/A	N/A	N/A			09/01/11	$ 13,583.69	
2012	604	6590	4020	Ingersol-Rand ClubCar	Electric cart	WRP - Ops		JR1203-257212	N/A	N/A	N/A	N/A			09/01/11	$ 13,583.70	
2004	535	4814	4025	Kawasaki,	Utility cart	R.I.X.	JK1AFCE154B532533		71L93X	N/A	G	5			12/02/04	$ 7,454.71	
	546		4025	Lube trailer	Lube trailer	RIX		1S9FS1415P1144491		N/A	N/A	N/A			N/A	N/A	
2003	582	6783	4025	JGL 400S	Man Lift	RIX		300070763	N/A			40			05/09/13	$ 9,482.32	
2006	1074	6038.	4025	Ingersol Rand Model-P185R	Air Compressor	R. Ramos	4FVCABAA66U374503	374503UGQB73	SE561865	N/A	D	40			11/16/06	$ 13,738.13	
2003	1078	4610.	4025	Ingersol Rand Model-P185R	Air Compressor	Jason Berg	4FVCABAA73U337844	337844UFN231	SE519086	N/A	D	40			07/29/03	$ 12,363.15	
1996	5002	323	4025	Weed Sprayer 200-11K6M JPA002	Weed sprayer	R.I.X. - WRP		32791		N/A	G	2			08/24/95	$ 5,373.07	
4004	5004	4004	4025	Stone 65CM JPA004	Concrete mixer	R.I.X.		92003203		N/A	G	2			03/10/03	$ 2,059.32	
2013	5011		4025	New Holland B95C	Backhoe	R.I.X.	EIN - KY8M87	FNH0B95CNDHH01627	N/A	N/A	D	30		DOORS	09/19/13	$ 88,223.75	
2013	5012		4025	Caterpillar 950K	Wheel Loader	R.I.X		CAT0950KJFER00317	N/A	N/A	D	50	Factory	DOORS	10/17/13	$ 269,002.08	
2013	5014		4025	Caterpillar Ag Ripper	Crawler	R.I.X.	EIN - NM4H53	AGCC0765HDNCC1720	N/A	N/A	D	50	Factory	DOORS	11/13/13	$ 261,251.63	
1991	383	983	4040	Ford F800 ***With trailer #1161	CRANE TRUCK W/ NATIONAL	WRP - Crane Trk.	1FDXK84A3MVA32245		355269	A	D	45	9/4/2009	DPF ser. MK00775	08/08/91	$ 44,134.53	
	514		4040	Hydra-Tech Hyd. pump - (Kohler eng.)	non-road trailer	WRP		2613620046	N/A	N/A	G	5			08/18/81	$ 1,682.63	
	515		4040	Hydra-Tech Hyd. pump (Kohler eng.)	non-road trailer	WRP		3734002051	N/A	N/A	G	5			08/18/81	$ 1,682.63	
1998	520	155	4040	Ingersol-Rand ClubCar	Electric cart	WRP		J9830-678452	N/A	N/A	N/A	N/A			02/27/98	$ 7,195.63	
	523		4040	Hydra-Tech Hyd. pump - (Kawasaki eng.)	non-road trailer	WRP		317428-B	N/A	N/A	G	5			08/18/81	$ 1,682.63	
	524	371	4040	Lincoln welder - Ranger 8	Trailer	WRP		SS72-U1940306204	SE90185	N/A		2			03/13/95	$ 2,943.73	
1998	537	156	4040	Ingersol-Rand ClubCar	Club Car	WRP		J830-678451	N/A	N/A	N/A	N/A			02/27/98	$ 7,195.63	
	538	266	4040	The pressure washer co. (Honda eng.)	Portable pressure washer	WRP		Ser. 62067	N/A	N/A	G	1			06/24/93	$ 3,043.94	
	541		4040	Carson 20 foot	Utility Trailer	WRP	4HXSU20259C149073		1327780	N/A	N/A	N/A			N/A	N/A	
1989	547		4040	Lube trailer		WRP	(VIN missing)	2.81403E+11	N/A	N/A	G	1			N/A	N/A	
1991	548		4040	Guilles Cusson hyd. pump (port.)	Pump			U-CPL6.2 - UGC616	N/A	N/A	G	1			N/A	N/A	
2003	549	4619	4040	Landa press. Wash. - mod.MVP4-3000	Pressure washer	WRP		P0803-63169	N/A	N/A	G	1			08/18/03	$ 5,015.27	
1999	550	730	4040	Clark CGP 25	Forklift	WRP		P365L0669485	N/A	N/A	Propne	10			08/19/99	$ 23,126.39	
	553		4040	Marquis Hyd. turner - mod. 130204	portable hyd. turner	WRP		51986		N/A	G	1			N/A	N/A	
1997	568	525	4040	John Deere 4x2 Gator	Utility cart	WRP - Plant Maint		W004X2X022430	N/A	N/A	G	10			12/02/97	$ 8,146.98	
1997	569	528	4040	John Deere 4x2 Gator	Utility cart	WRP - Plant Maint		W004X2X022466	N/A	N/A	G	10			12/02/97	$ 7,534.96	
2005	584	6526	4040	Snorkel TB85J	Man lift	WRP	EIN-EV4V68	SP05040	N/A		D	30	6/13/2011	DOORS	05/12/11	$ 47,139.61	
2006	588	4950	4040	Ingersol-Rand ClubCar	Electric cart	WRP - Plant Maint		JR0632-660184	N/A	N/A	N/A	N/A			04/13/06	$ 11,837.17	
2006	589	4949	4040	Ingersol-Rand ClubCar	Electric cart	WRP - Plant Maint		JR0632-660183	N/A	N/A	N/A	N/A			04/13/06	$ 11,837.16	
	592	3614	4040	Gandy Seed Spreader Model 1012T	Trailer	WRP		105709	N/A	N/A	N/A	N/A			07/31/02	$ 4,408.05	
2013	593		4040	Godwin 6in. Pump	Trash pump	WRP	16MPF0519DD067752	13618501-2 pump	SE561978	N/A	D	50		T4it -	01/14/14	$ 39,914.61	

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CITY OF SAN BERNARDINO MUNICIPAL WATER DEPARTMENT MOBILE EQUIPMENT 2015-16																	
2013	594	6912	4040	Godwin 6in. Pump	Trash pump	WRP	16MPF0511DD067759	13618590-5 pump	SE561979	N/A	D	50		T4it -	01/14/14	$ 39,914.61	
	595		4040	Propane Tank	Trailer	WRP	AACHU18G4PC19336			N/A	N/A	1			N/A	N/A	
	596		4040	Dayton trash pump	Trash pump	WRP		243198	N/A	N/A	N/A	N/A			N/A	N/A	
2013	611	6790	4040	Ingersol-Rand ClubCar	Electric cart	WRP Plant maint	stake bed	JR1345-419078	N/A	N/A	N/A	N/A			06/26/13	$ 13,291.65	
2013	612	6791	4040	Ingersol-Rand ClubCar	Electric cart	WRP Plant maint	stake bed	JR1345-419105	N/A	N/A	N/A	N/A			06/26/13	$ 13,291.65	
2013	613	6792	4040	Ingersol-Rand ClubCar	Electric cart	WRP Plant maint	1/2 stake bed	JR1345-419080	N/A	N/A	N/A	N/A			06/26/13	$ 13,291.65	
2013	614	6793	4040	Ingersol-Rand ClubCar	Electric cart	WRP Plant maint	1/2 stake bed	JR1345-419087	N/A	N/A	N/A	N/A			06/26/13	$ 13,291.65	
2014	615	6884	4040	Ingersol-Rand ClubCar	Electric cart	WRP Plant maint	Flat bed - box - rack	JR1418-458902	N/A	N/A	N/A	N/A			12/12/13	$ 17,301.60	
2014	616	6885	4040	Ingersol-Rand ClubCar	Electric cart	WRP Plant maint	Flat bed - box - rack	JR1418-458903	N/A	N/A	N/A	N/A			12/12/13	$ 17,301.60	
2014	617	6886	4040	Ingersol-Rand ClubCar	Electric cart	WRP Plant maint	Flat bed - box - rack	JR1418-458904	N/A	N/A	N/A	N/A			12/12/13	$ 17,301.60	
2010	1049	6519.	4040	New Holland B95B (Enclsd cab)	Backhoe	WRP	EIN - AN5P46	N8GH18032	N/A	N/A	D	30		DOORS	01/24/11	$ 81,090.55	
1980	1162	402.	4040	Wisconsin, Model 2500-18, Tilt Bed	Equipment trailer	WRP-On #383 WRP		6989,	316995	N/A	N/A	N/A			06/26/80	$ 14,565.46	
1991	1165	406.	4040	Zieman - model 1110 tilt	Equipment trailer	WRP		1ZCT165131AP14956	1202946	N/A	N/A	N/A			06/30/90	$ 2,535.31	
1995	556	6365	4040	Ford L8000	Vactor truck	WRP - Plant Maint	1FDZW82E9SVA83362		370224	A	D	50	9/30/2009	DPF ser. MK00776	03/22/10	$ 1.00	
	598		4040	Hustler Super-Z Model 927020	Mower	WRP		3102372	N/A	N/A	G	5			07/16/04	$ 10,937.43	
	545		4040		Weed sprayer	R.I.X./WRP				N/A	G	2			N/A	N/A	
2005	509	4912	40	Kubota RTV 900	Utility Vehicle	WRP - maint		KRTV900A51043031	N/A	N/A	D	10			09/22/05	$ 14,454.53	
2013	605	6787	4042	Ingersol-Rand ClubCar	Electric cart	WRP Electrical	van body	JR1345-418047	N/A	N/A	N/A	N/A			06/26/13	$ 16,555.05	
2013	606	6788	4042	Ingersol-Rand ClubCar	Electric cart	WRP Electrical	side boxes	JR1345-419084	N/A	N/A	N/A	N/A			06/26/13	$ 14,201.55	
2013	607	6789	4042	Ingersol-Rand ClubCar	Electric cart	WRP Electrical	side boxes	JR1345-419101	N/A	N/A	N/A	N/A			06/26/13	$ 14,201.55	
2015	1171			Zieman - Equipment Trailer	Trailer		1ZCE39E26FZ344969								03/30/15		
															TOTAL	**$ 4,627,237**	

CITY OF SAN BERNARDINO
MUNICIPAL WATER DEPARTMENT

BOARD OF WATER COMMISSIONERS
STAFF REPORT

RECEIVED
JUL 11 2016
e for SRA
GENERAL MANAGER

TO: Stacey R. Aldstadt, General Manager

FROM: Jennifer Shepardson, Director of Environmental & Regulatory Compliance

SUBJECT: **CLAIMS SETTLEMENTS -- QUARTERLY REPORT**

DATE: July 11, 2016

BACKGROUND:

In Policy 20.090 -- Claims Handling, it is required that the Environmental and Regulatory Compliance division provide the Board a quarterly written report detailing all claims processed within the authority granted in the policy. Attached is the quarterly report for the period of April through June 2016.

RECOMMENDATION:

Receive and file, as this report is provided for information only.

Respectfully submitted,

Jennifer L. Shepardson

Jennifer Shepardson
Director of Environmental & Regulatory Compliance

Agenda Item 11

QUARTERLY CLAIMS HANDLING REVIEW (04/01/2016 to 06/30/2016)

Date Closed/ Payment Received	Incident Number	Date of Incident	Event	Amount of Claim	Name	Resolution	$ Received	$ Paid Out
04/21/16	16-034	02/12/16	Vehicle Traffic Collision	$3,471.56	Katie Ah Fook	Paid		$ 3,471.56
05/06/16	16-029	02/04/16	Hit Fire Hydrant	$3,982.66	AAA Insurance	Paid	$ 3,982.66	
05/24/16	16-022	02/02/16	Hit Fire Hydrant	$405.79	Alliance United Insurance	Paid	$ 405.79	
06/09/16	14-150	11/06/13	Hit Fire Hydrant	$2,807.06	Vincente Ponce	Paid	$ 112.50	
06/14/16	15-071	06/20/15	Main Leak	$2,934.63	Gallagher Bassett Services	Paid		$ 2,934.63
						TOTAL:	$ 4,500.95	$ 6,406.19

CITY OF SAN BERNARDINO
MUNICIPAL WATER DEPARTMENT

BOARD OF WATER COMMISSIONERS
STAFF REPORT

RECEIVED
JUL 11 2016
GENERAL MANAGER

TO: Stacey R. Aldstadt, General Manager

FROM: Miguel J. Guerrero, P.E., Director of Water Utility

SUBJECT: **JUNE 2016 DROUGHT MONITORING REPORT INFORMATIONAL ITEM ONLY**

DATE: July 11, 2016

COPIES: Robin Ohama (w/o attach), Mike Garland (w/o attach), Con Arrieta (w/o attach), Greg Gage (w/o attach), Sally Duran (w/attach)

BACKGROUND:

In May 2015, the State Water Resources Control Board (SWRCB) adopted an emergency drought regulation requiring a 25% reduction in potable water use across the state. SWRCB's emergency regulation outlined percentage reduction tiers (conservation standards) in gross water production for each urban water supplier to achieve the 25% reduction. Initially, the Department's conservation standard was set at 28%, but as SWRCB continued to refine the emergency regulation, the Department's standard was reduced multiple times and is currently set at 15%. The latest amendment of the emergency regulation allowed water suppliers to self-certify their own conservation standard based on supply and demand from previous years, and it also extended the emergency regulation through February 2017.

In May 2015, in response to SWRCB's emergency regulation, the Board of Water Commissioners (Board) adopted a resolution to amend Department Rule and Regulation No. 21 to include Stage IIA extreme mandatory restrictions, and at the same time, the Board implemented Stage IIA restrictions. Stage IIA requires a reduction in potable water use by all Department customers. Stage IIA also includes several other restrictions such as limiting outdoor watering to three days per week, prohibiting public medians with turf irrigation to be irrigated, and prohibiting outdoor irrigation 48 hours after a significant rainfall event.

Staff continues to monitor and track the effects of the ongoing drought by monitoring groundwater levels in select wells located in the Department's service area. The purpose of this monitoring is to track groundwater level trends as pumping continues during extreme drought conditions. This monthly report to the Board of Water Commissioners (Board) will provide valuable data needed to contemplate important policy decisions related to Water Supply Shortage Stages outlined in Rule and Regulation No. 21 (Rule).

SUBJECT: JUNE 2016 DROUGHT MONITORING REPORT INFORMATIONAL ITEM ONLY

STAFF ANALYSIS – BASIN CONDITIONS/HYDROGRAPHS:

In order for staff to effectively monitor the basin conditions, index wells within defined sub-regions were selected and are shown on the attached overall and regional figures, along with each well's hydrograph in **Exhibit A**. A well hydrograph graphically depicts a well's water level over time.

Although not as drastic as previous years, water levels in the northwest portion (Cajon 3 and Mallory) of the Department's service area west and northwest of California State University San Bernardino (Cal State SB) region continue to drop. For the past couple of months, DC-1 water level has increased as a result of recharge activity upstream of the well in the Sweetwater Basins.

Wells located just south of Cal State SB, including index wells Newmark 3, EPA 006 and EPA 007, have been steadily decreasing water levels over the past few months.

With the exception of 40th Street, wells situated near the I-210 corridor are now experiencing decreasing water levels. Some of these wells are seasonably operated (only operated during hot summer months), and with the hot weather experienced in the last month, use of some of these wells has been necessary. 40th Street water level increased more than 37 feet in the last couple of months as a result of recharge activity upstream of the well in Waterman Basins. As recharge at the Waterman Basins continues, an upward trend in water levels is expected in wells located downstream of the basins.

EPA 001, 002, 003, and 004 wells are operational and are showing decreasing water levels over the past months. Water levels are still 20 to 40 feet higher in these wells than the recent low levels experienced during the 2008 and 2009 timeframe.

EPA wells along the western edge of the Muscoy OU (EPA Wells 109 through 112) are showing slight decrease in water levels. The extreme decline in the shallow and intermediate aquifer levels over the last two years has slowed due to decreased consumption.

Wells in the Cajon Creek and Lytle Creek areas are experiencing the most severe declines in the service area. This is in large part due to the fact that the Department has no means by which to artificially recharge this part of the basin. Staff is looking into long-term solutions to this recharge deficiency and will be briefing the Board in the future on a plan to recharge this part of the basin.

Exhibit B contains a report generated from the Department's database for all of the production well water levels. This report contains calculations to determine the depth of water over pump equipment in each well. The depth of water over pumping equipment is critical to ensure adequate positive suction head for each pumping unit. If the water levels in a well decline to the same elevation as the pumping equipment, the pump will begin to pull air into the pump bowls, inducing equipment damage. If water levels in wells decline to these levels, it prompts the need to rehabilitate the well by pulling the old pump equipment and replacing with new pumping equipment and placing the pump deeper in the well. Staff monitors these water level depths closely to ensure no failures

occur and to estimate if and when pump equipment needs to be pulled and replaced to effectively "chase" the declining water levels.

Exhibit C contains a report of total cumulative rainfall at the five (5) rain gauges operated and maintained by the Department. These five (5) gauges are located at the Water Utility Yards, Mill and D Plant, Newmark Plant, Lytle Creek Plant, and Devil Canyon Plant. The report shows that there was no measurable rain across the city in June 2016.

COMPLETED AND PENDING WELL REHABILITATIONS:

EPA 111 and EPA 006 failed (mechanical) recently and will be rehabilitated within the next couple of months. Other wells slated for rehabilitation in the near future are EPA 001, EPA 108S, and EPA 112.

SERVICE AREA WATER DEMAND REDUCTIONS:

The Department has been reporting monthly production data to the SWRCB as required by the drought emergency regulation. SWRCB also required all urban water suppliers to track gallons per capita per day (GPCD) beginning in October 2014 for the September 2014 reporting period. The response by the Department's customers to the Board's Stage II and Stage IIA declarations and the mandatory water use restrictions has been remarkable. GPCD values and percent water reduction as compared to 2013 values are shown below.

Month/Year	GPCD	% Change in Gross Production vs. 2013
June 2015	101.00	-28.11%
July 2015	121.57	-29.83%
August 2015	125.59	-33.56%
September 2015	115.22	-30.88%
October 2015	100.63	-23.44%
November 2015	92.50	-16.60%
December 2015	82.45	-17.08%
January 2016	75.81	-16.28%
February 2016	81.71	-10.19%
March 2016	85.45	-17.56%
April 2016	97.32	-24.78%
May 2016	102.58	-30.76%
June 2016	131.36	-23.11%
Cumulative Compliance*	**-**	**-23.11%**

*Based on revised Emergency Regulation, compliance period begins June 2016 and extends through February 2017.

SUBJECT: JUNE 2016 DROUGHT MONITORING REPORT INFORMATIONAL ITEM ONLY

The Department experienced a decrease in gross water production of approximately 23.1% in June 2016 compared to June 2013 production. SWRCB tracks compliance on a cumulative basis beginning with June 2016. Cumulative tracking means that the conservation savings will be added together from one month to the next and compared to the amount of water used during the same months in 2013. With a cumulative reduction through June 2016 of approximately 23.1%, the Department is currently in compliance (conservation standard currently set at 15%).

The Department's local and regional outreach efforts regarding the drought continue to have an effect on customer water usage. Internally, Water Staff have been directed to make operational changes to minimize water loss from the system, including curtailing certain hydrant flushing programs temporarily. A graph depicting the Department's monthly gross water production versus the same production in 2013 along with the reduction target is attached for reference.

In response to the recent State Water Project (SWP) allocation increase to 60%, the Department began recharging SWP water at the Waterman Basins, Badger Basins, and the Sweetwater Basins. Recharge activity will continue throughout the year to maximize the use of Department allocated/ purchased SWP water.

STAFF'S RECOMMENDATION:

No action is recommended at this time. Staff will continue to monitor the State's continued response to the drought and monitor water level trends of all production wells and provide monthly updates to the Board.

Respectfully submitted,

Miguel J. Guerrero, P.E.
Director, Water Utility

MJG:swd
Attach.

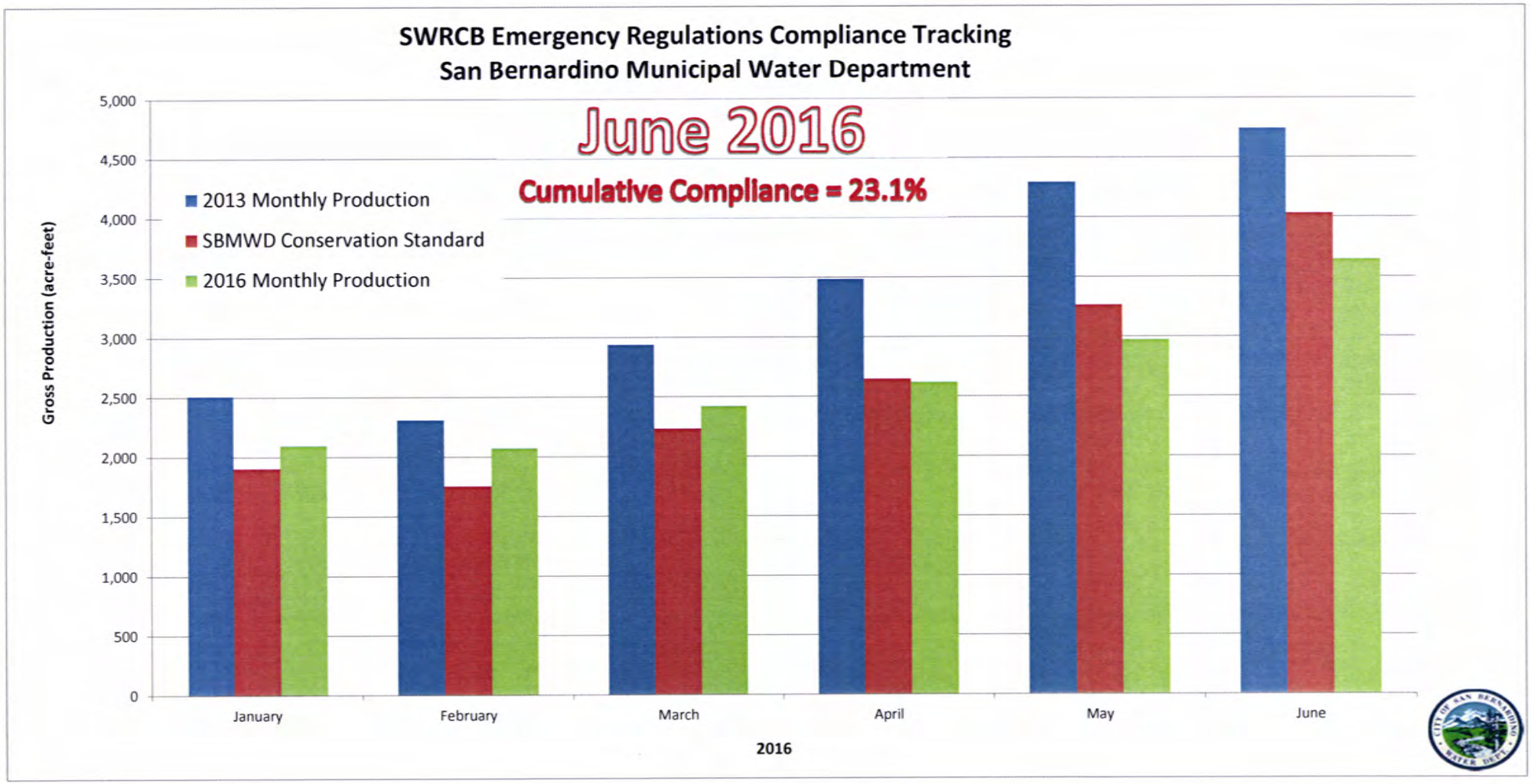
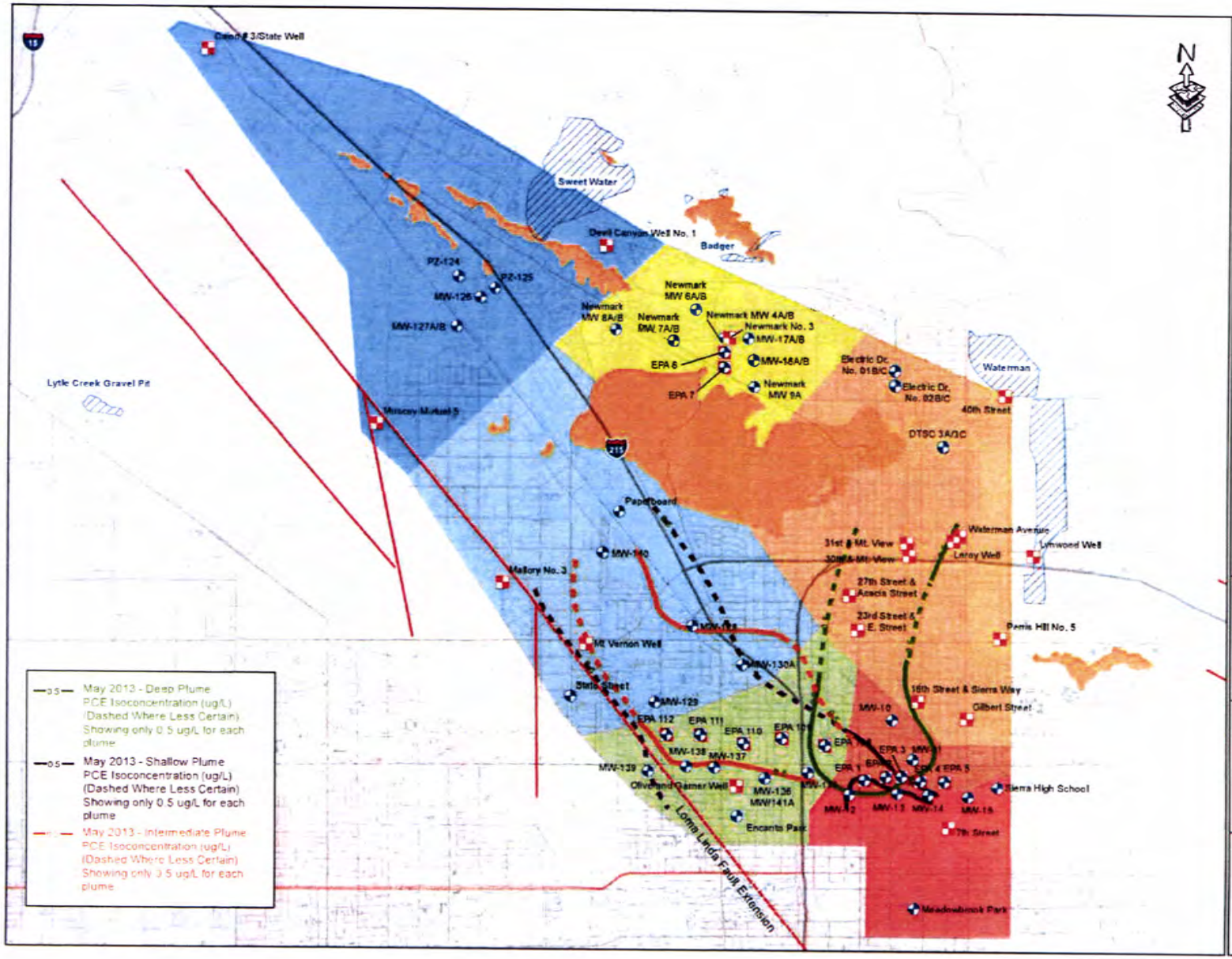

SWRCB Emergency Regulations Compliance Tracking
San Bernardino Municipal Water Department
June 2016
Cumulative Compliance = 23.1%
2013 Monthly Production
SBMWD Conservation Standard
2016 Monthly Production
Gross Production (acre-feet)
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
January
February
March
April
May
June
2016

EXHIBIT A



Legend

Hydrograph Wells

- Extraction/Production Well
- Monitoring Well
- Recharge Basins

Hydrograph Areas

- Upgradient
- Muscoy Mid-Plume
- Muscoy Plume
- Newmark North
- Newmark Mid-Plume
- Newmark Plume Front
- Newmark Downgradient

Faults/Hydraulic Barriers

0 2,250 4,500 9,000
Feet

Datum: NAD 1983 State Plane CA V

Job Number: 185802557

PREPARED BY:

Stantec

Stantec Consulting Inc.
290 Conejo Ridge Ave. Suite 200
Thousand Oaks, Ca 91361
(805) 230-1266/230-1277 (fax)

Data Generated by: M Bartosek

For: City of San Bernardino Municipal Water Department

Approved By: M Eisen

Hydrograph Areas
San Bernardino, California

Date: 3/24/14

Figure: 1-1

Hydrographs

<u>Region:</u> Cajon Creek

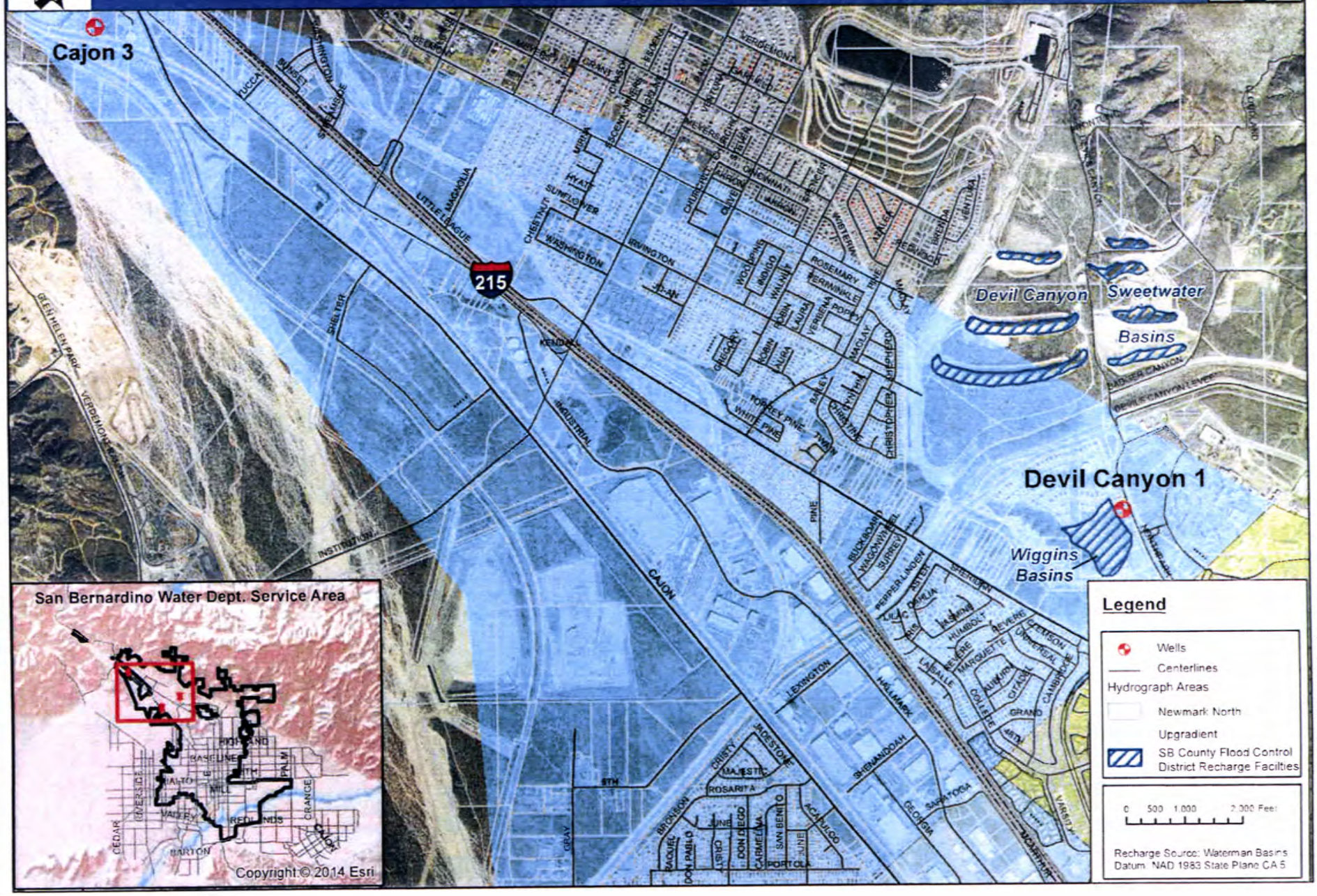
Upgradient Production and Monitoring Wells

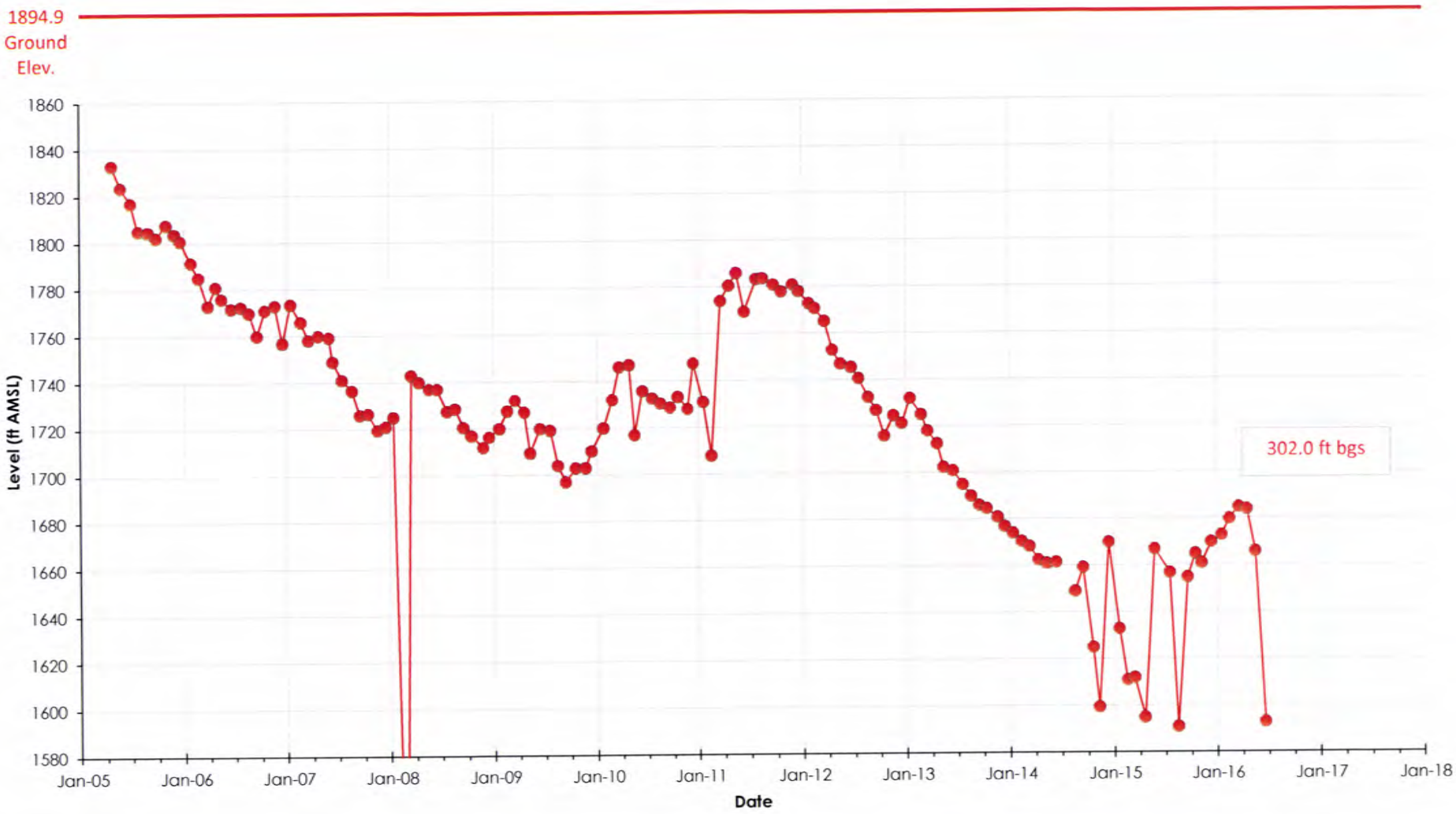
<u>Recharge Source:</u>

Cajon Creek (No Artificial Recharge)

CAJON CREEK REGION

Upgradient Production and Monitoring Wells





Client/Project

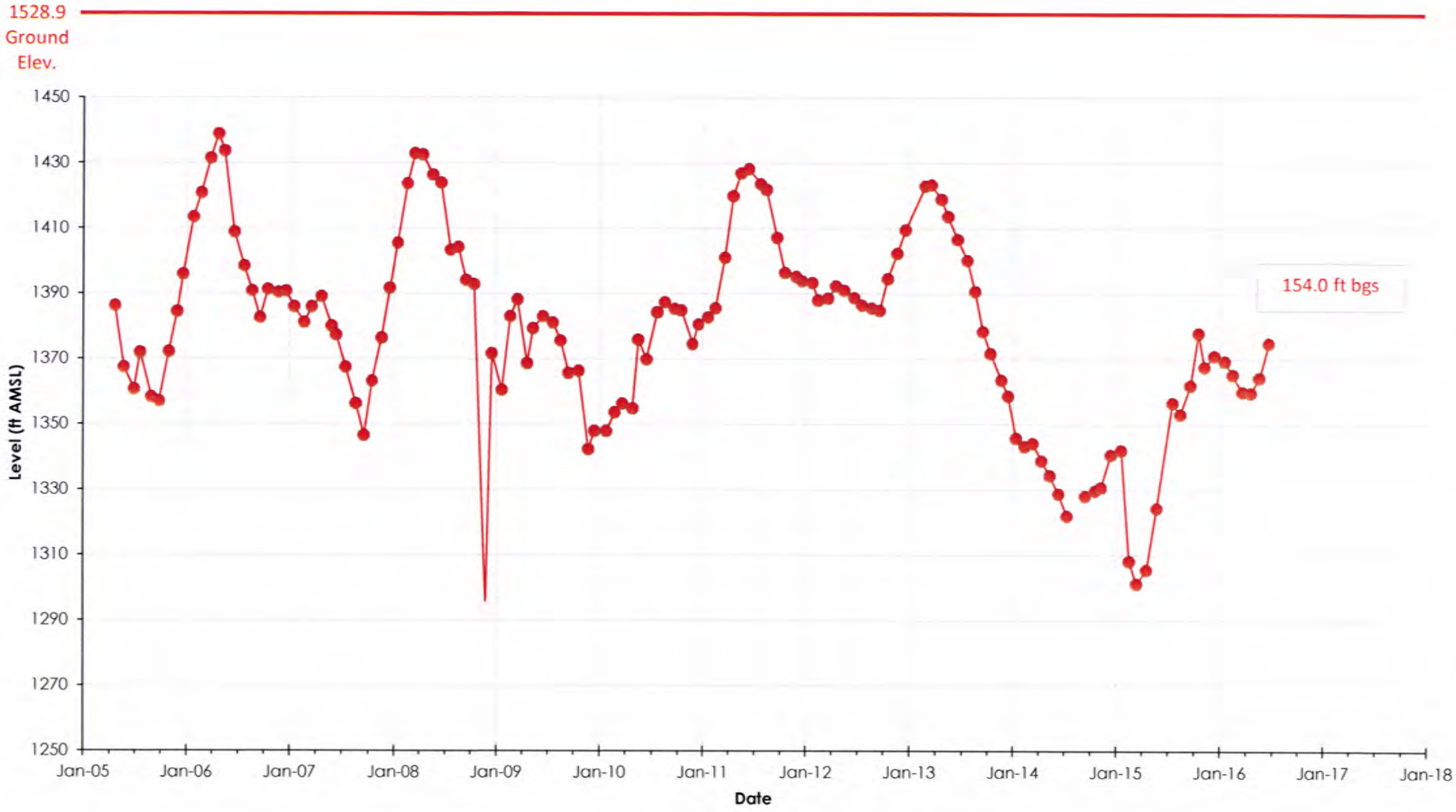
Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

Cajon 3

Title

Water Level Elevations



Client/Project

Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

Devil Canyon 1

Title

Water Level Elevations

Hydrographs

<u>Region:</u> Newmark North

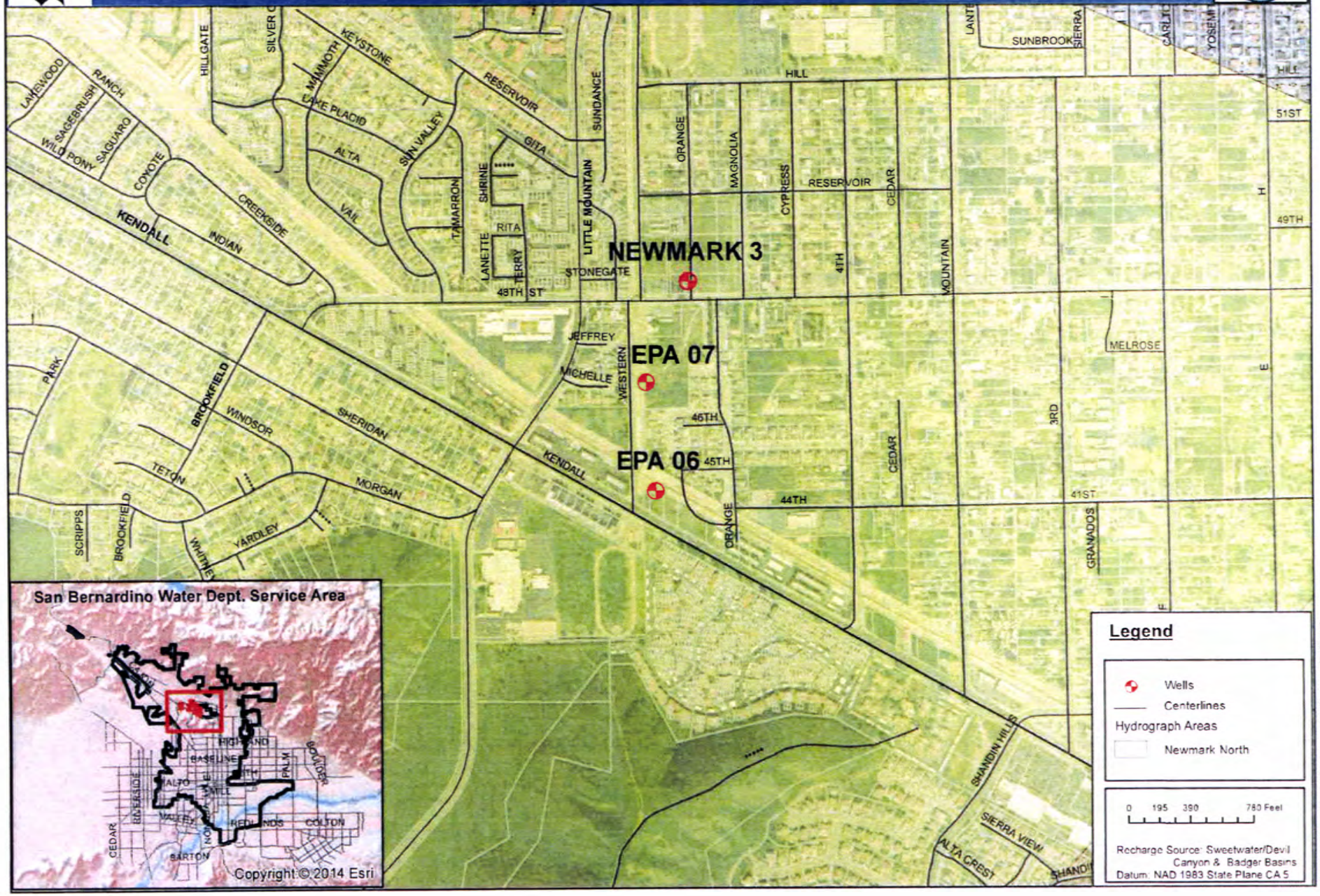
Extraction and Monitoring Wells

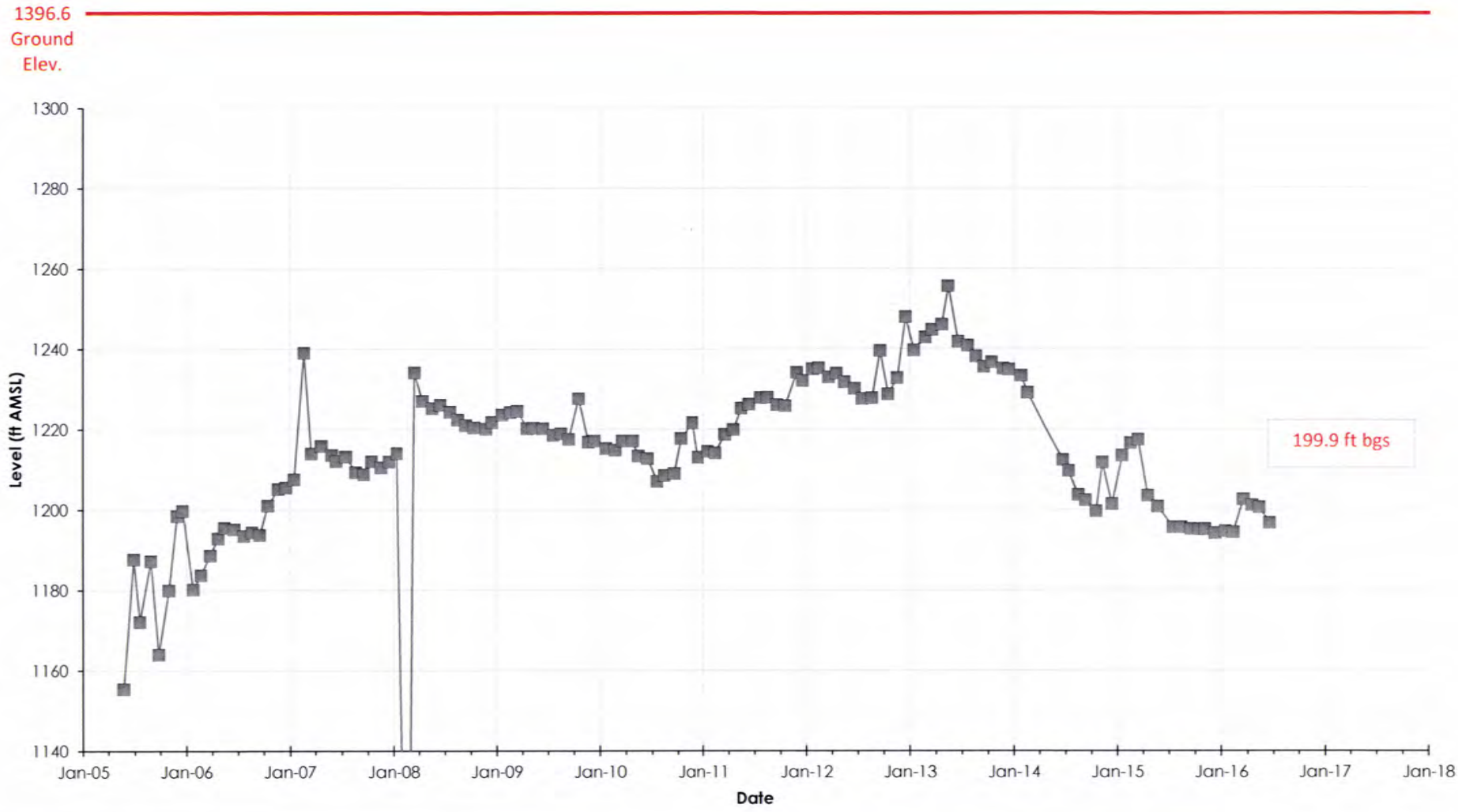
<u>Recharge Source:</u>

Sweetwater/Devil Canyon Basins and Badger Basins

NEWMARK NORTH REGION

Extraction and Monitoring Wells





Client/Project

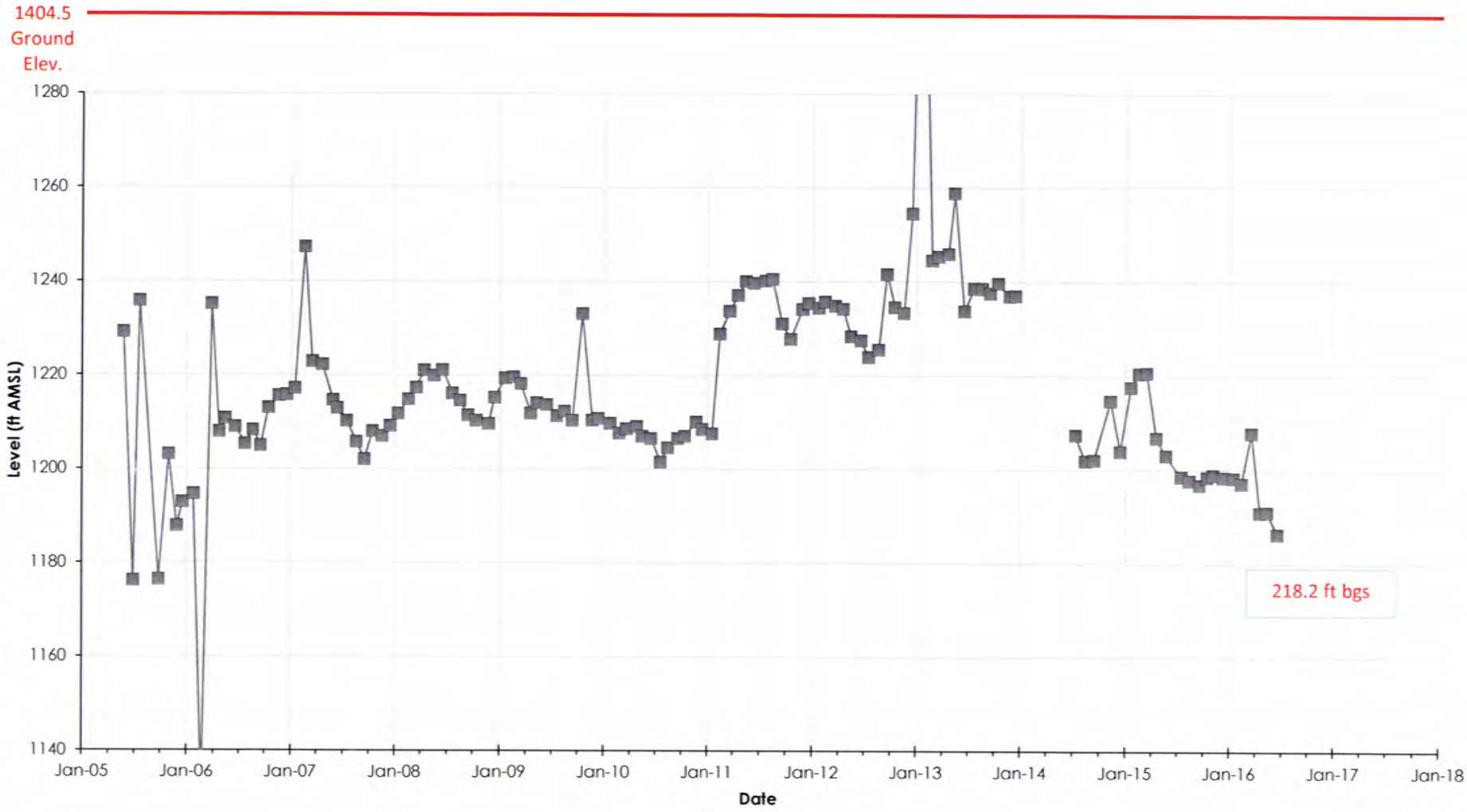
Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

EPA 006

Title

Water Level Elevations



Client/Project

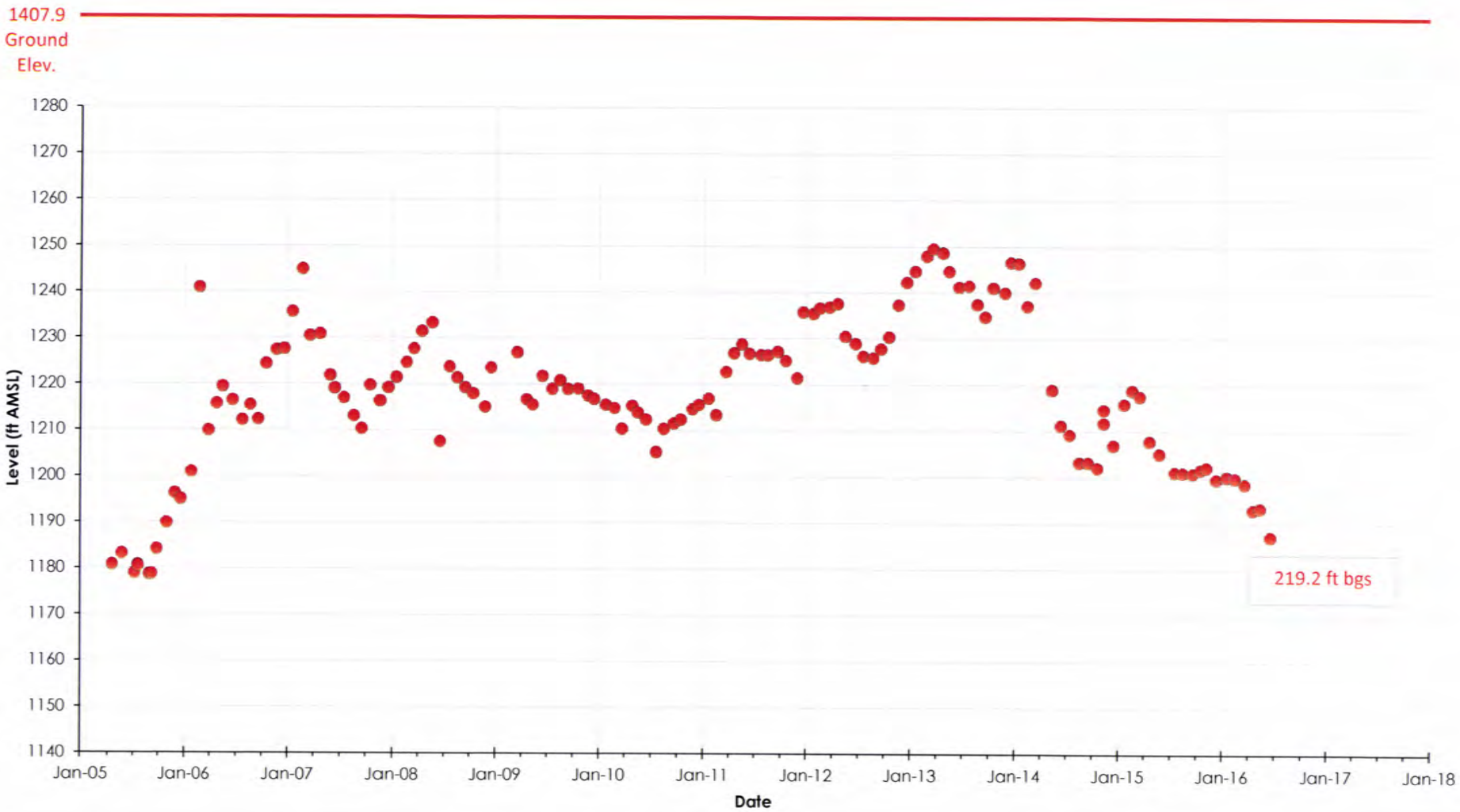
Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

EPA 007

Title

Water Level Elevations



Client/Project

Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

Newmark 3

Title

Water Level Elevations

Hydrographs

<u>Region:</u> Newmark Mid-Plume

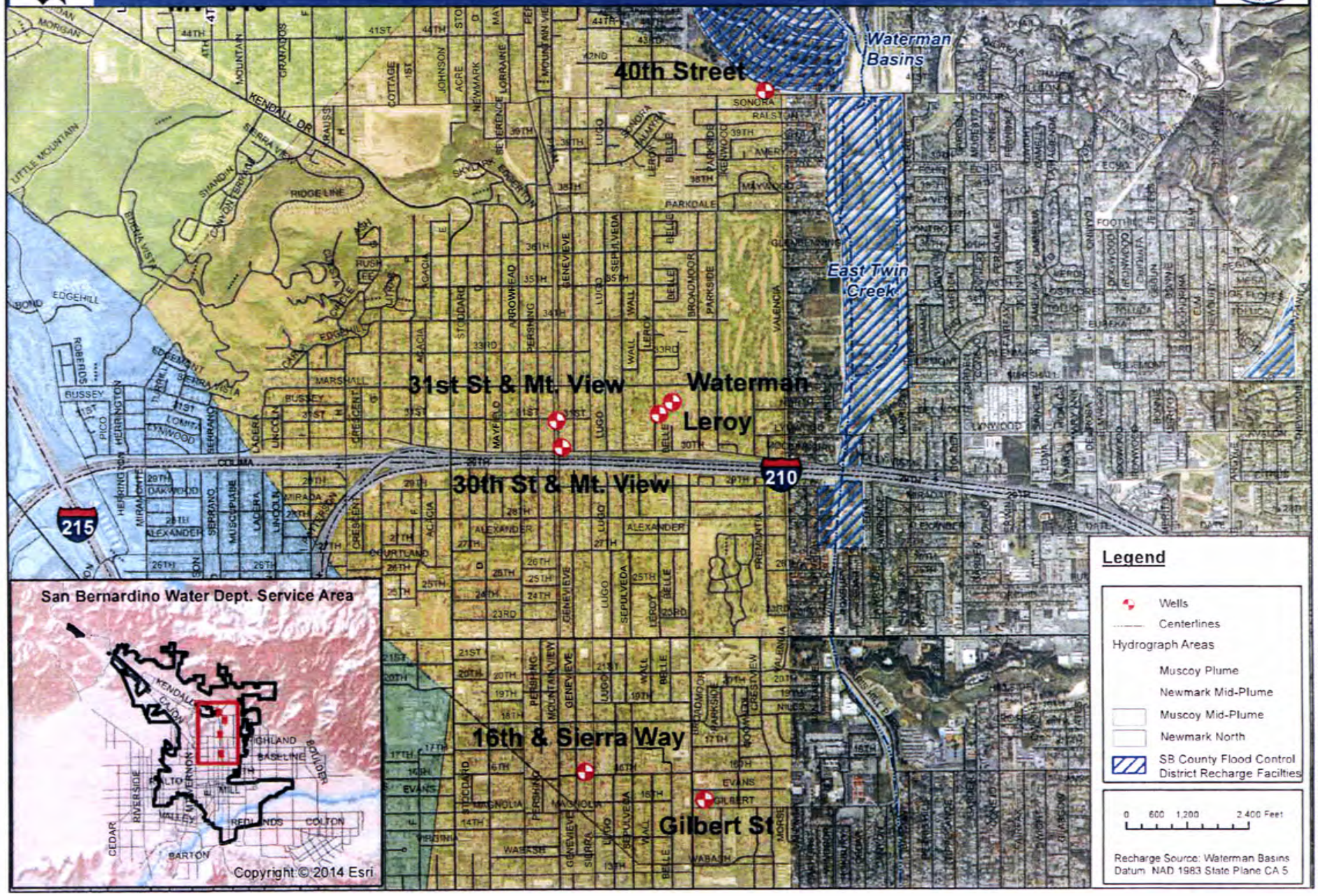
Production and Monitoring Wells

<u>Recharge Source:</u>

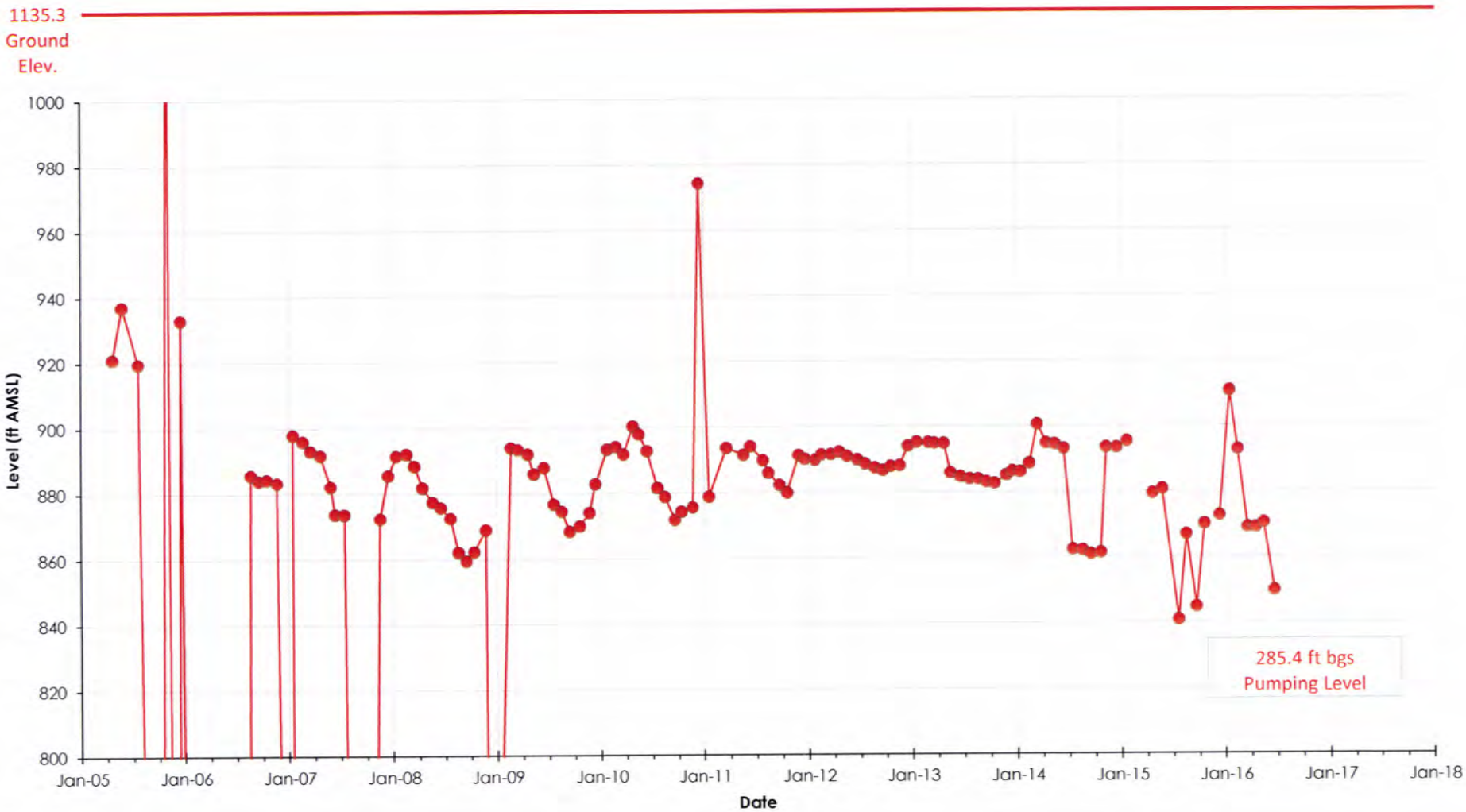
Waterman Basins

NEWMARK MID-PLUME REGION

Production and Monitoring Wells



K:\Projects\Maps\Consent Decree monthly\Newmark_Mid-Plume.mxd



Client/Project

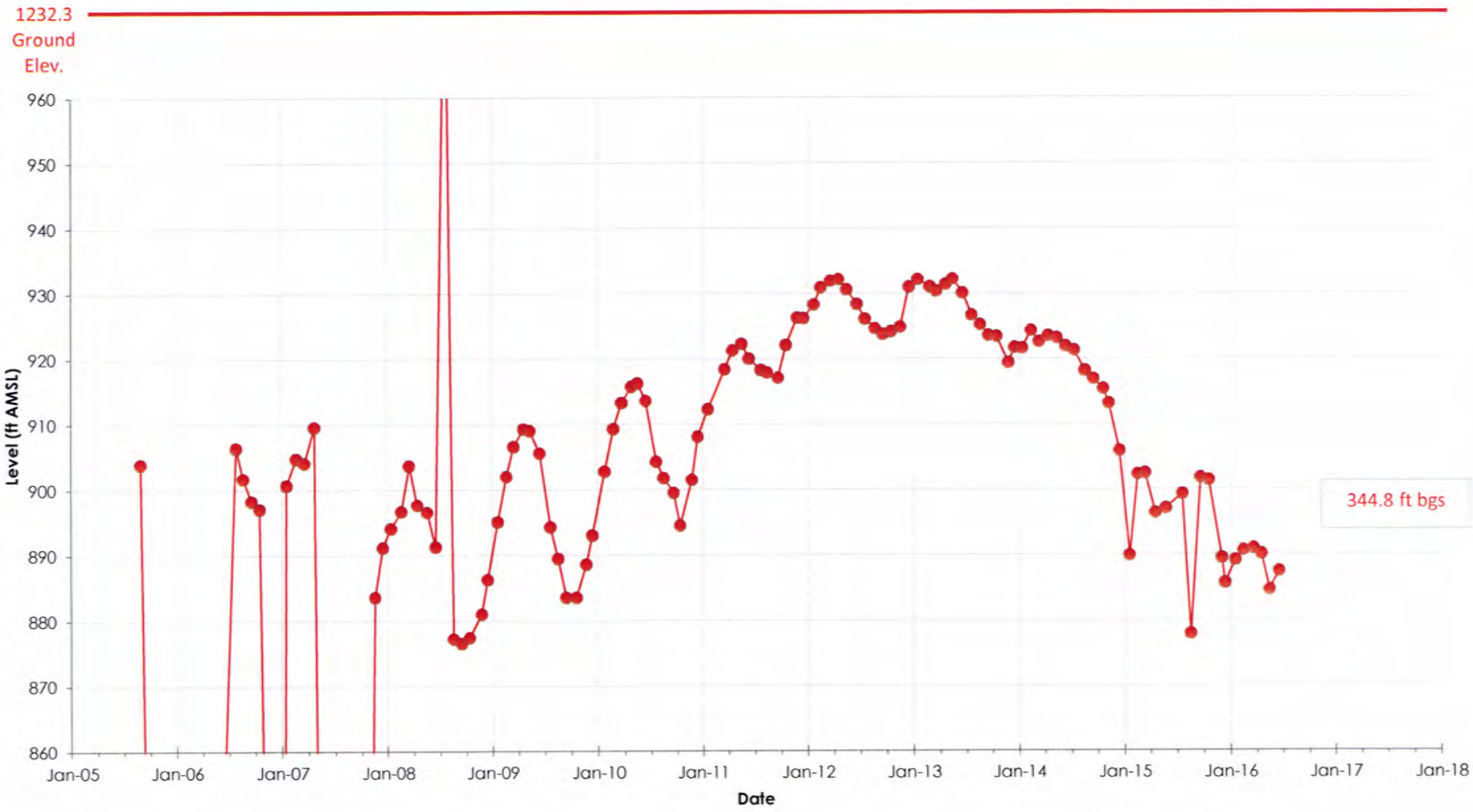
Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

16th & Sierra

Title

Water Level Elevations



Client/Project

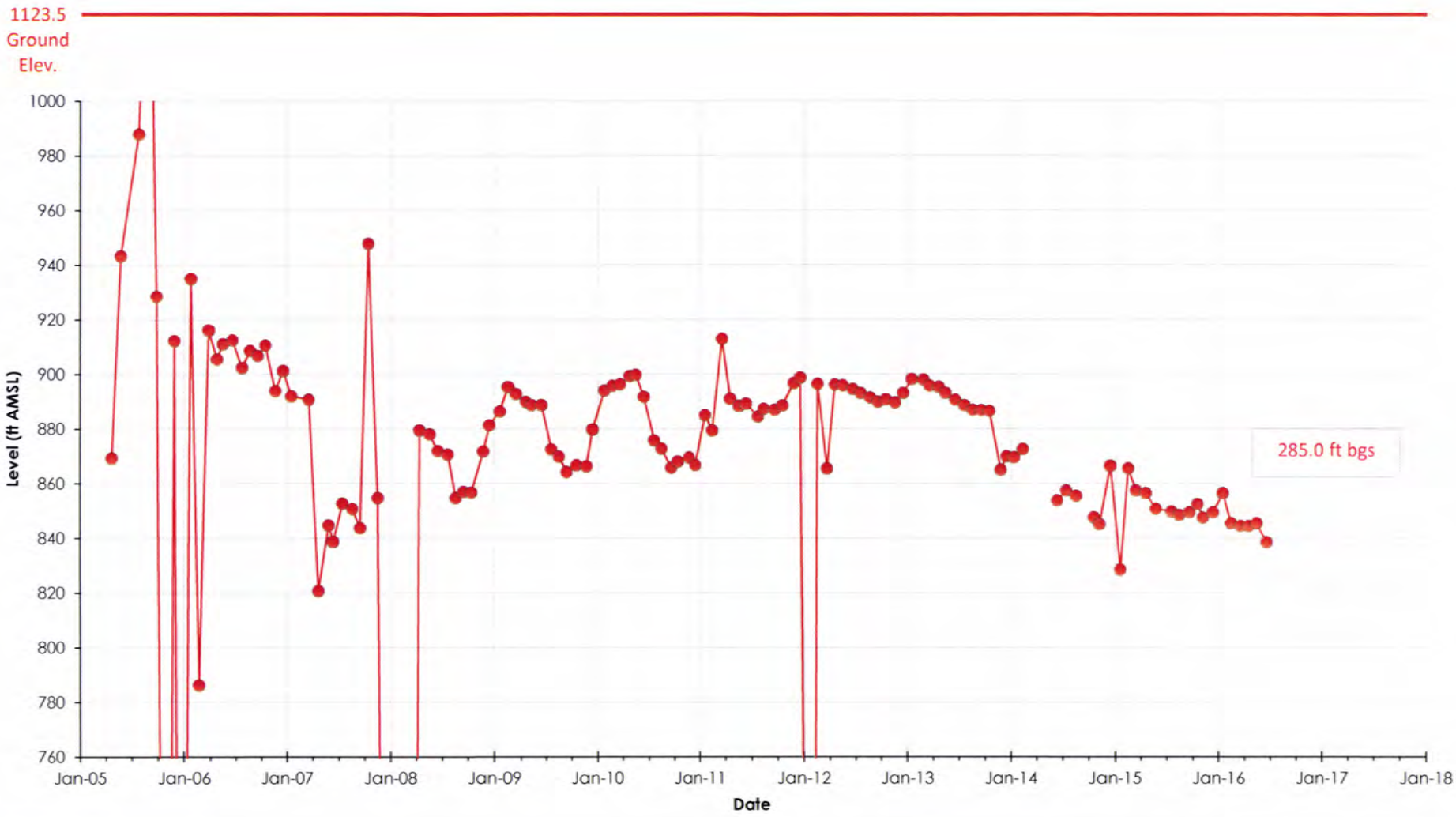
Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

31st & Mt. View

Title

Water Level Elevations



Client/Project

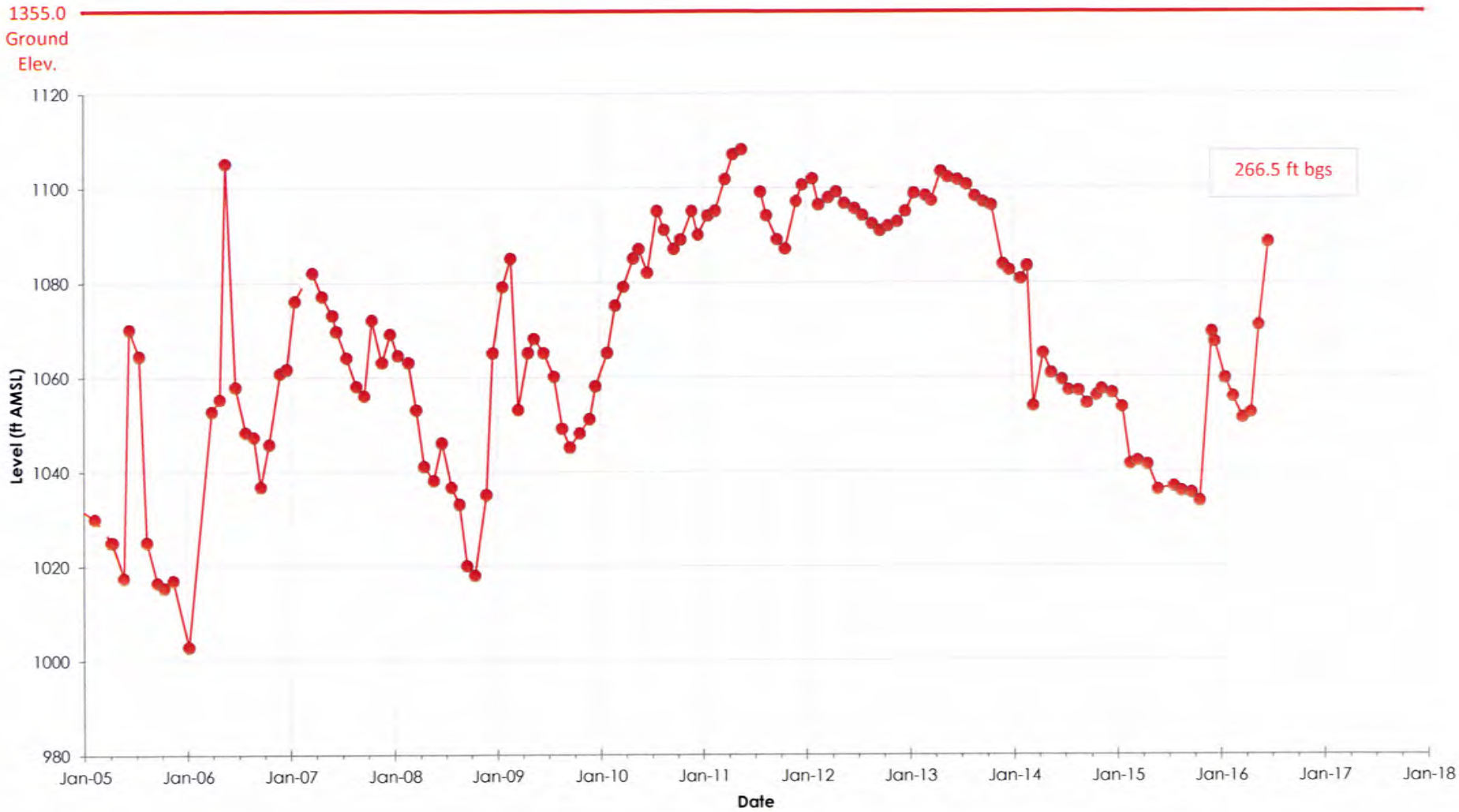
Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

Gilbert

Title

Water Level Elevations



Client/Project

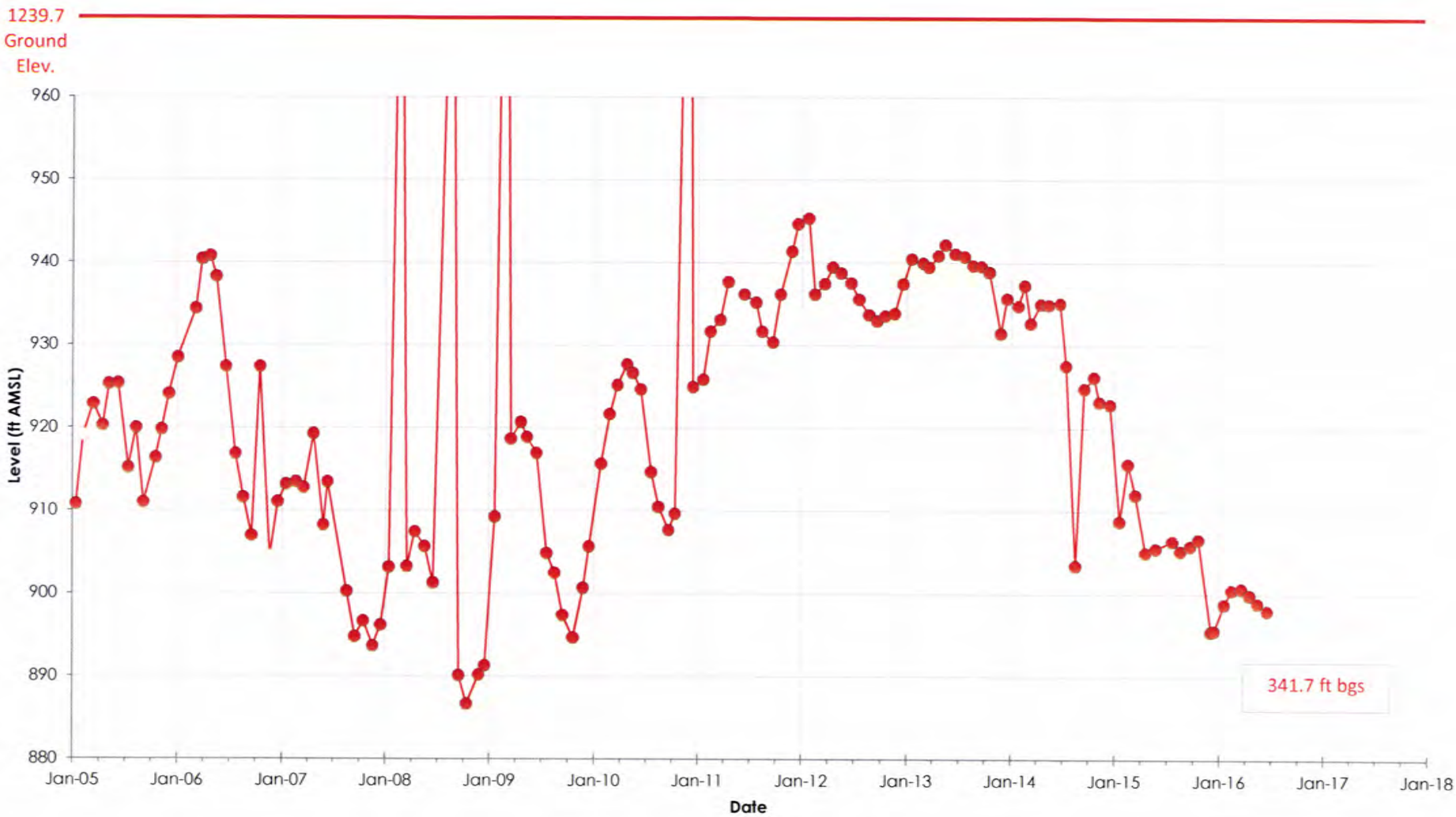
Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

40th Street Well

Title

Water Level Elevations



Client/Project

Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

Leroy Well

Title

Water Level Elevations

Client/Project

Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

Waterman Well

Title

Water Level Elevations

Hydrographs

<u>Region:</u> Newmark Plume Front

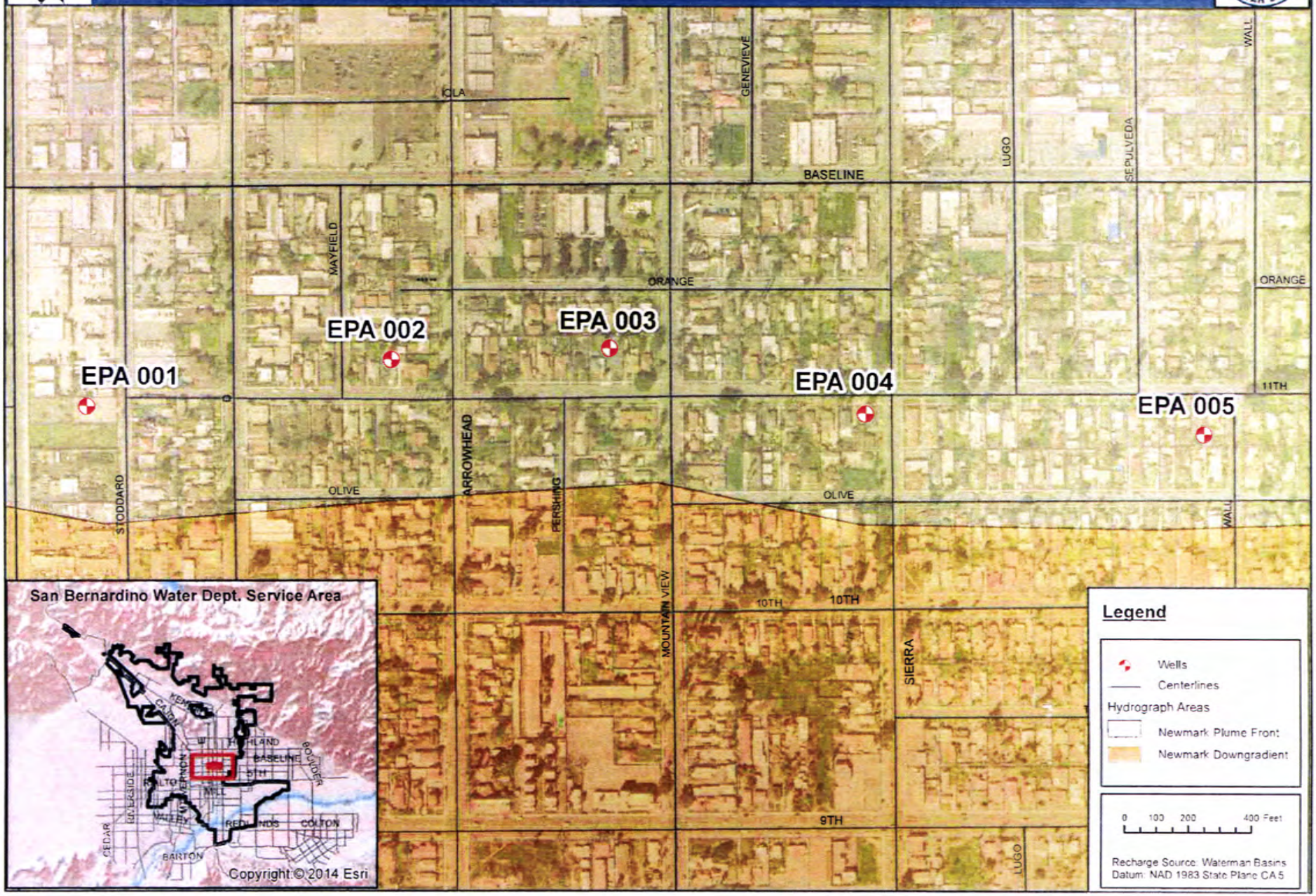
Extraction and Monitoring Wells

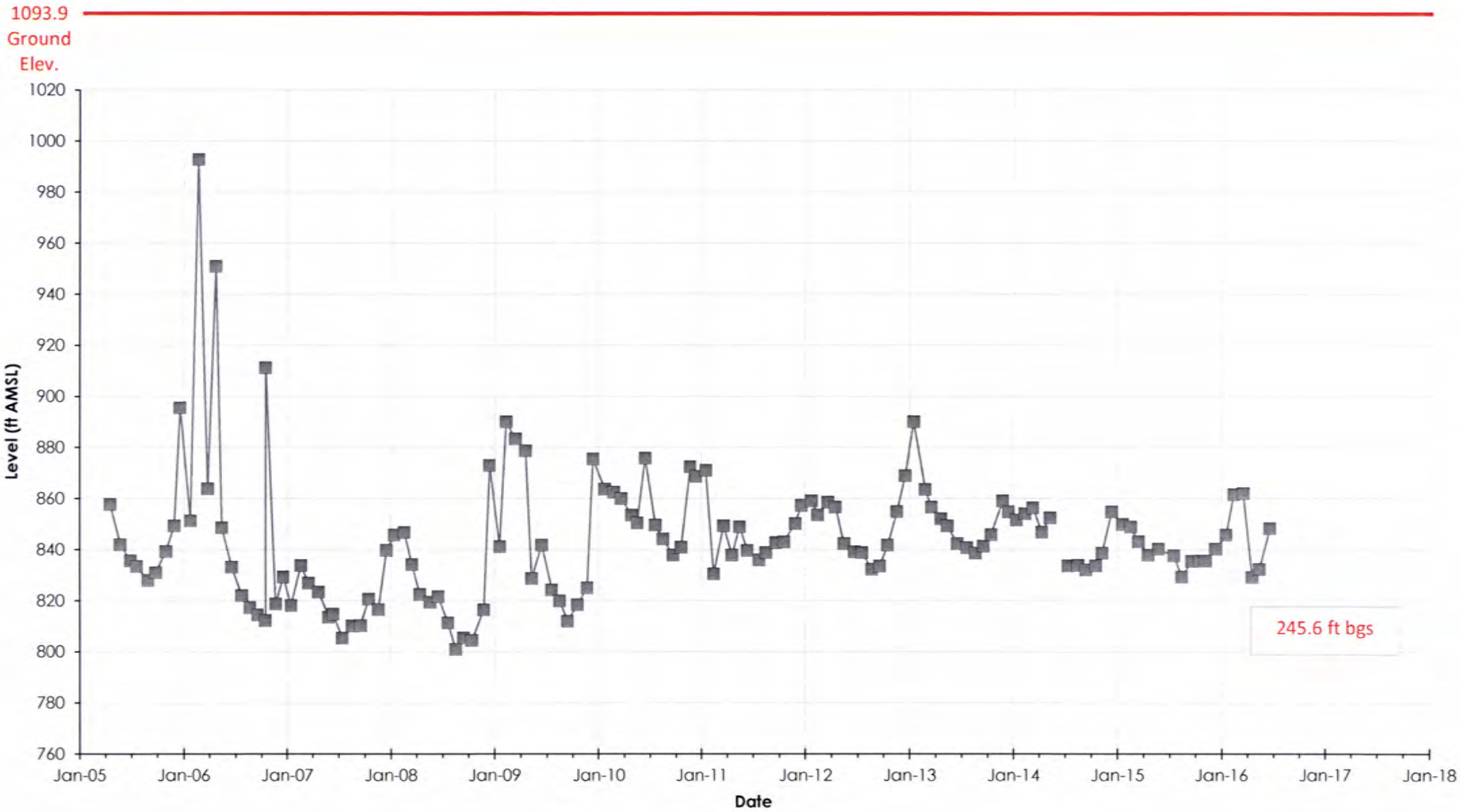
<u>Recharge Source:</u>

Waterman Basins

NEWMARK PLUME FRONT REGION

Extraction and Monitoring Wells





Client/Project

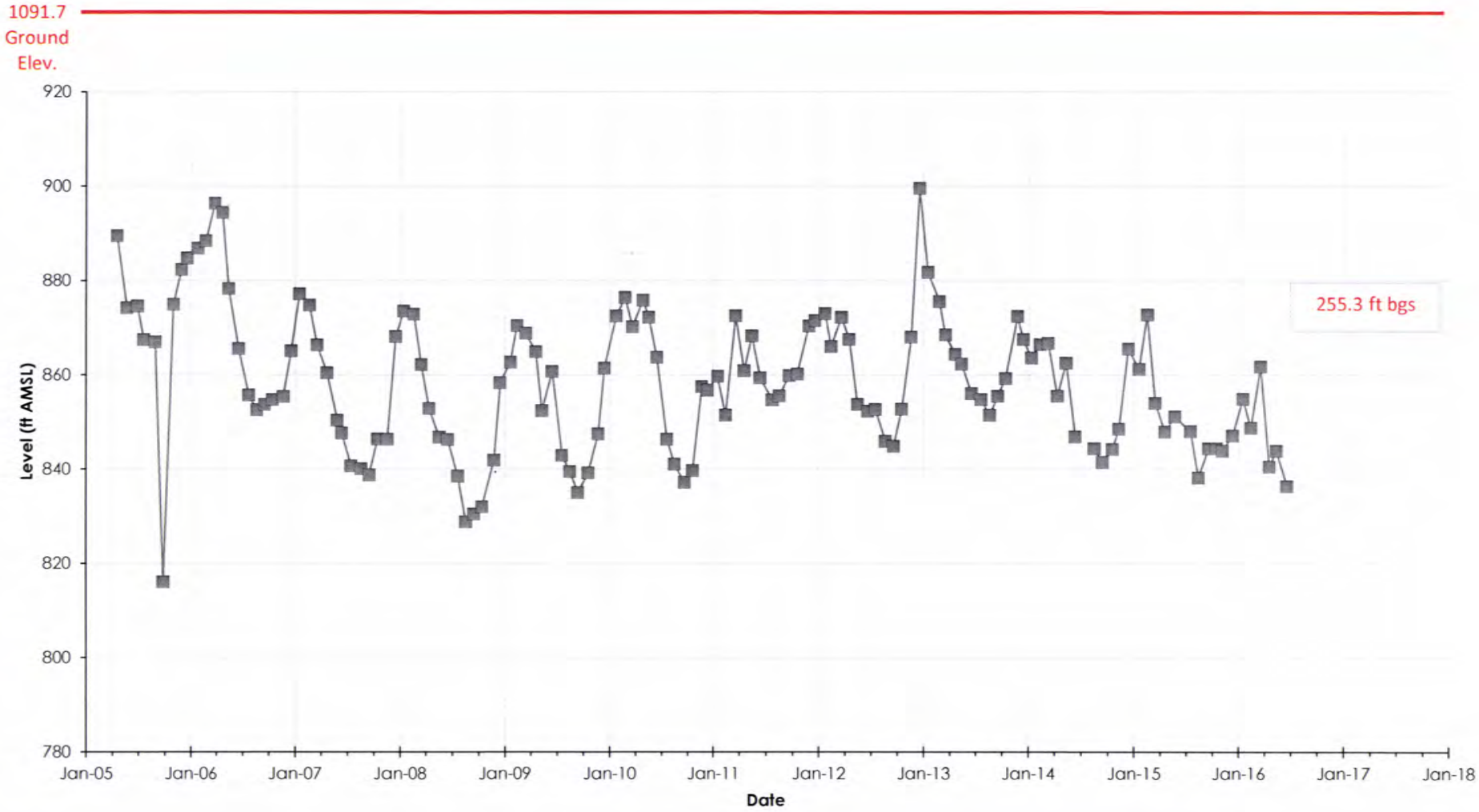
Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

EPA 001

Title

Water Level Elevations



Client/Project

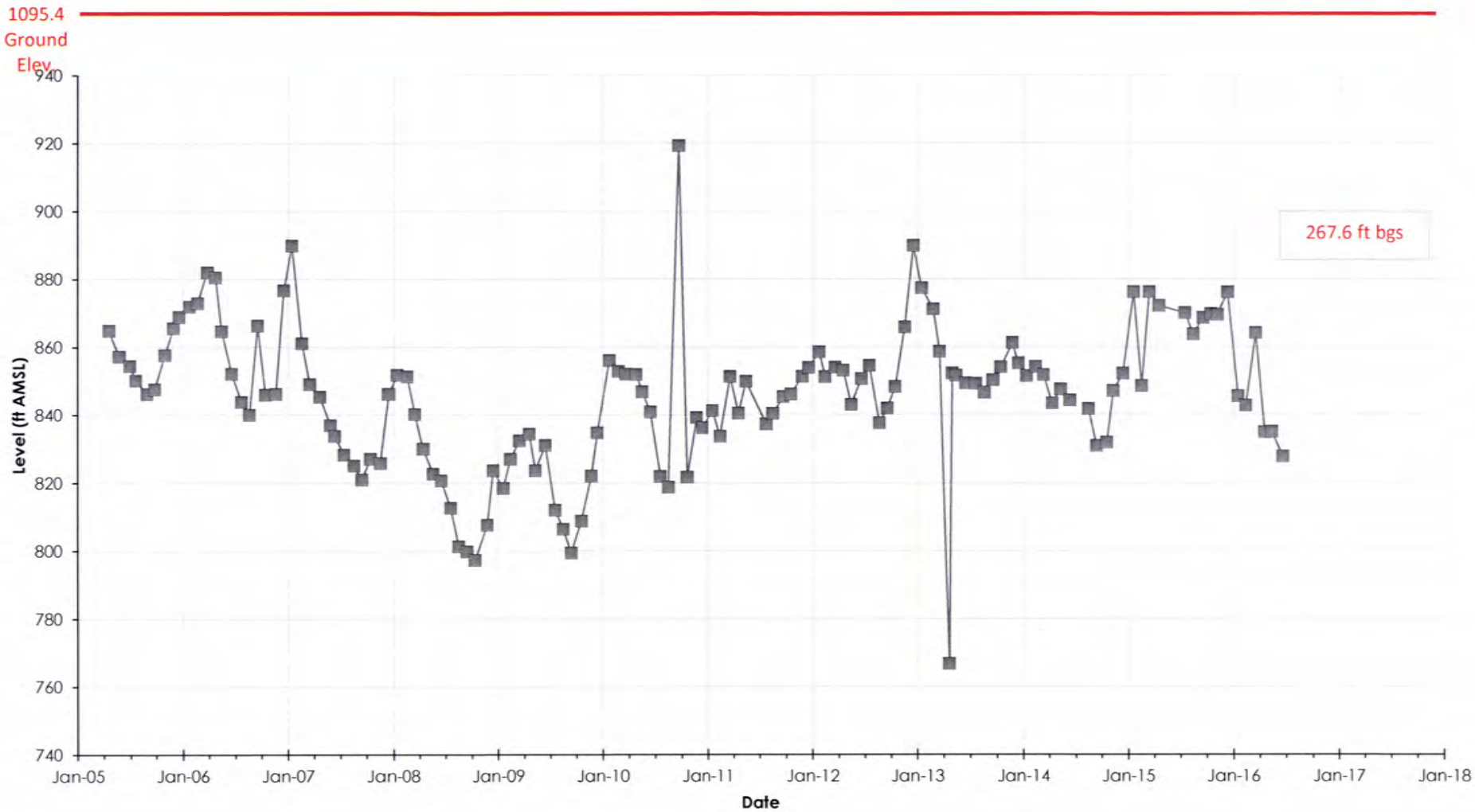
Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

EPA 002

Title

Water Level Elevations



Client/Project

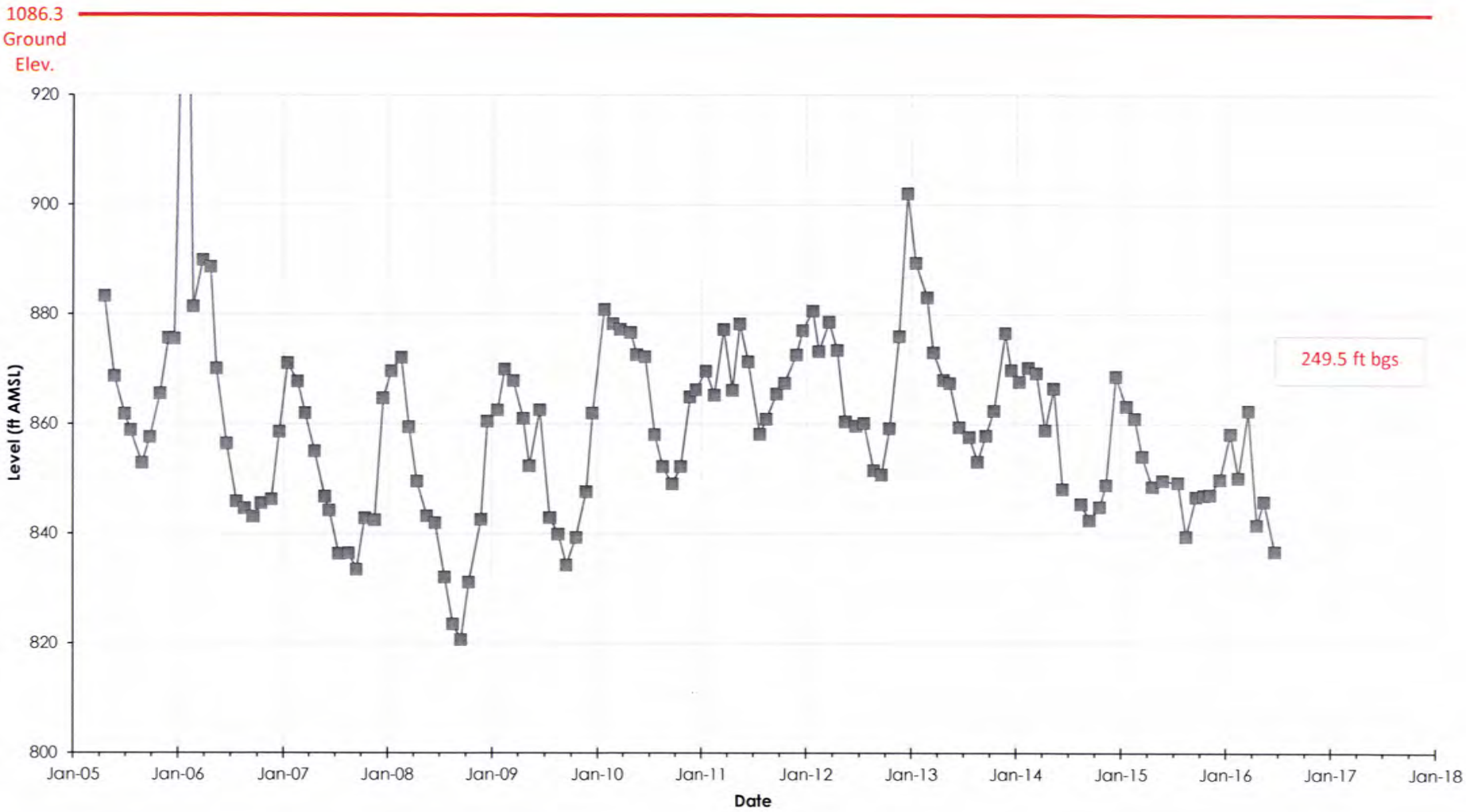
Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

EPA 003

Title

Water Level Elevations



Client/Project

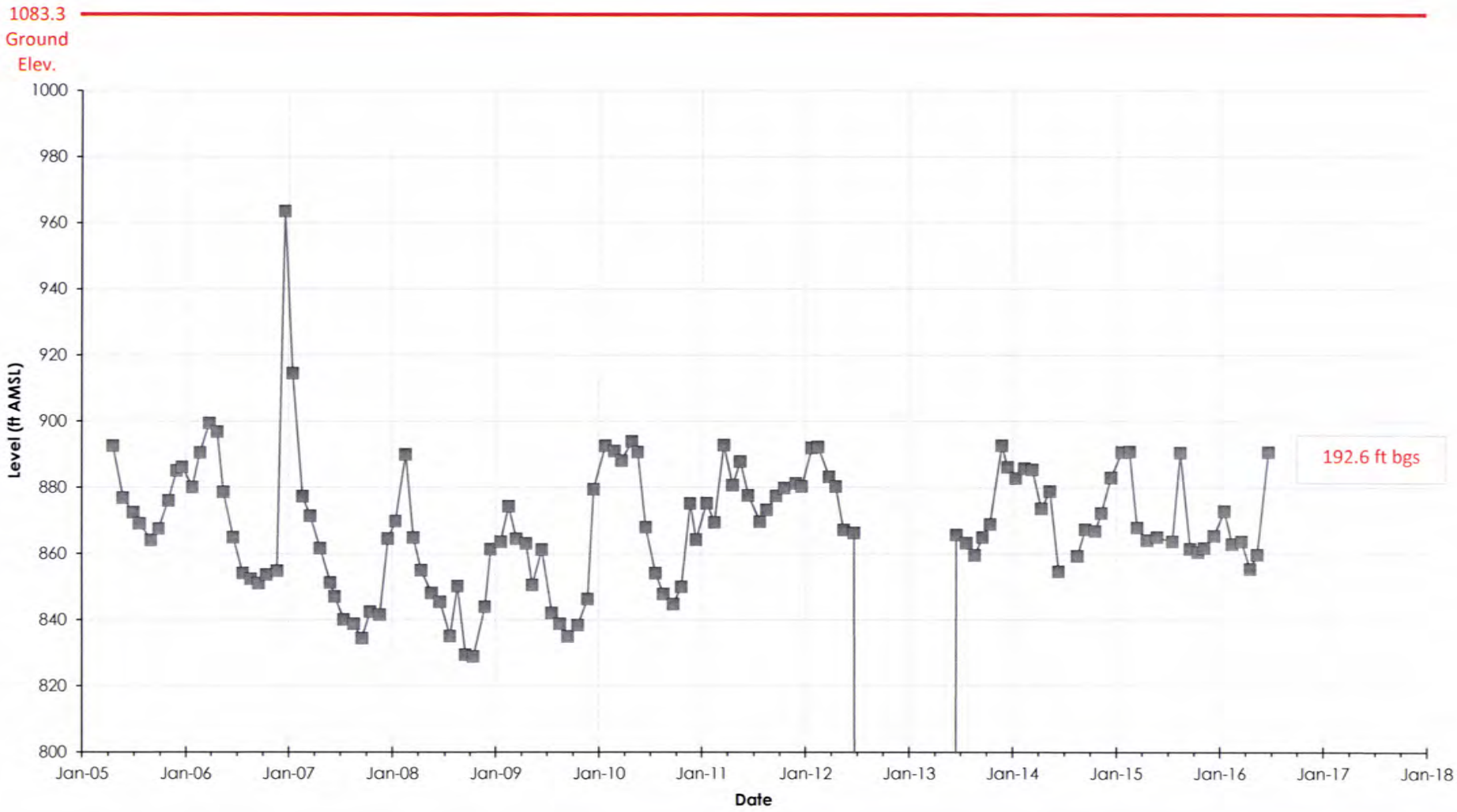
Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

EPA 004

Title

Water Level Elevations



Client/Project

Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

EPA 005

Title

Water Level Elevations

Hydrographs

<u>Region:</u> Muscoy Mid-Plume

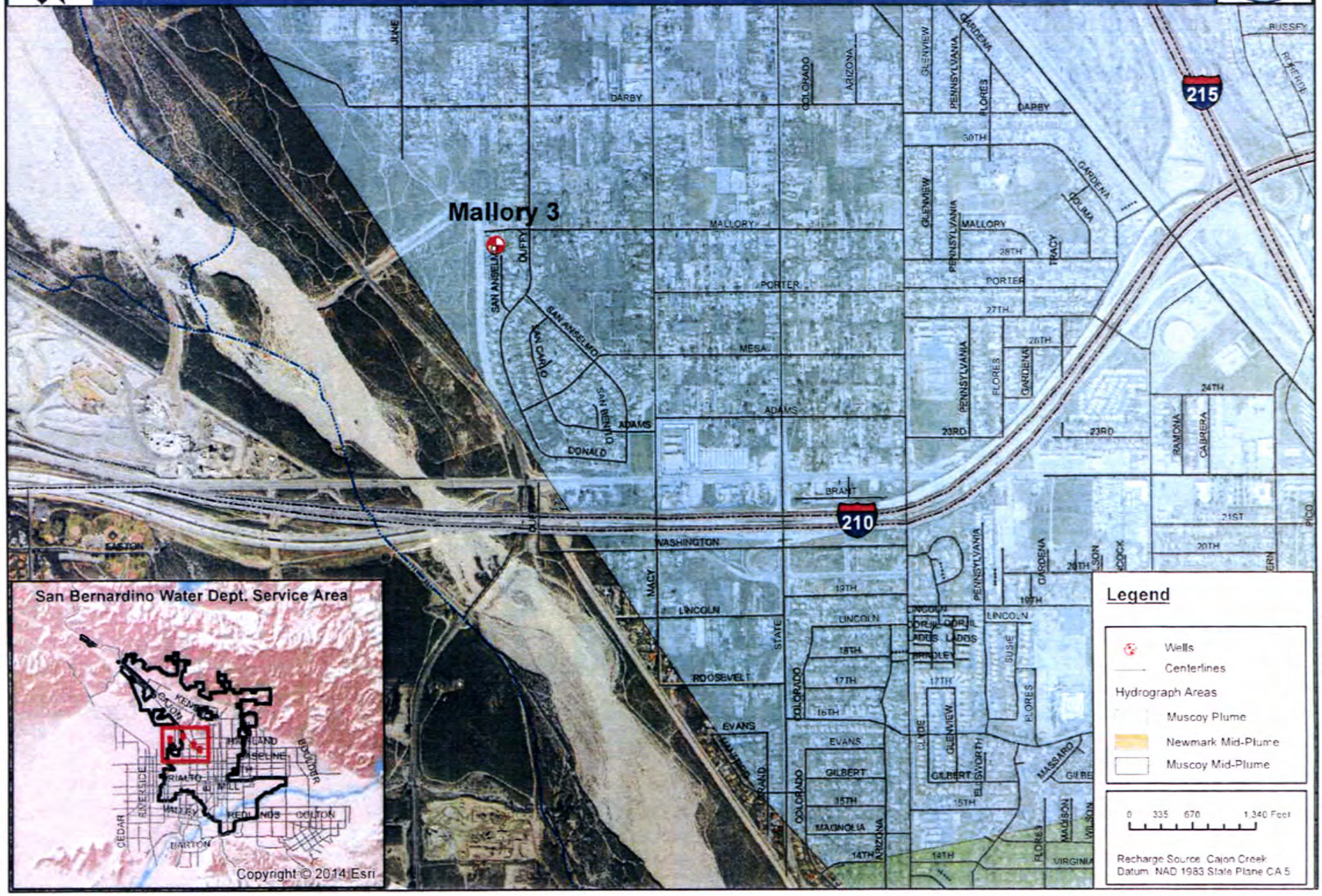
Production and Monitoring Wells

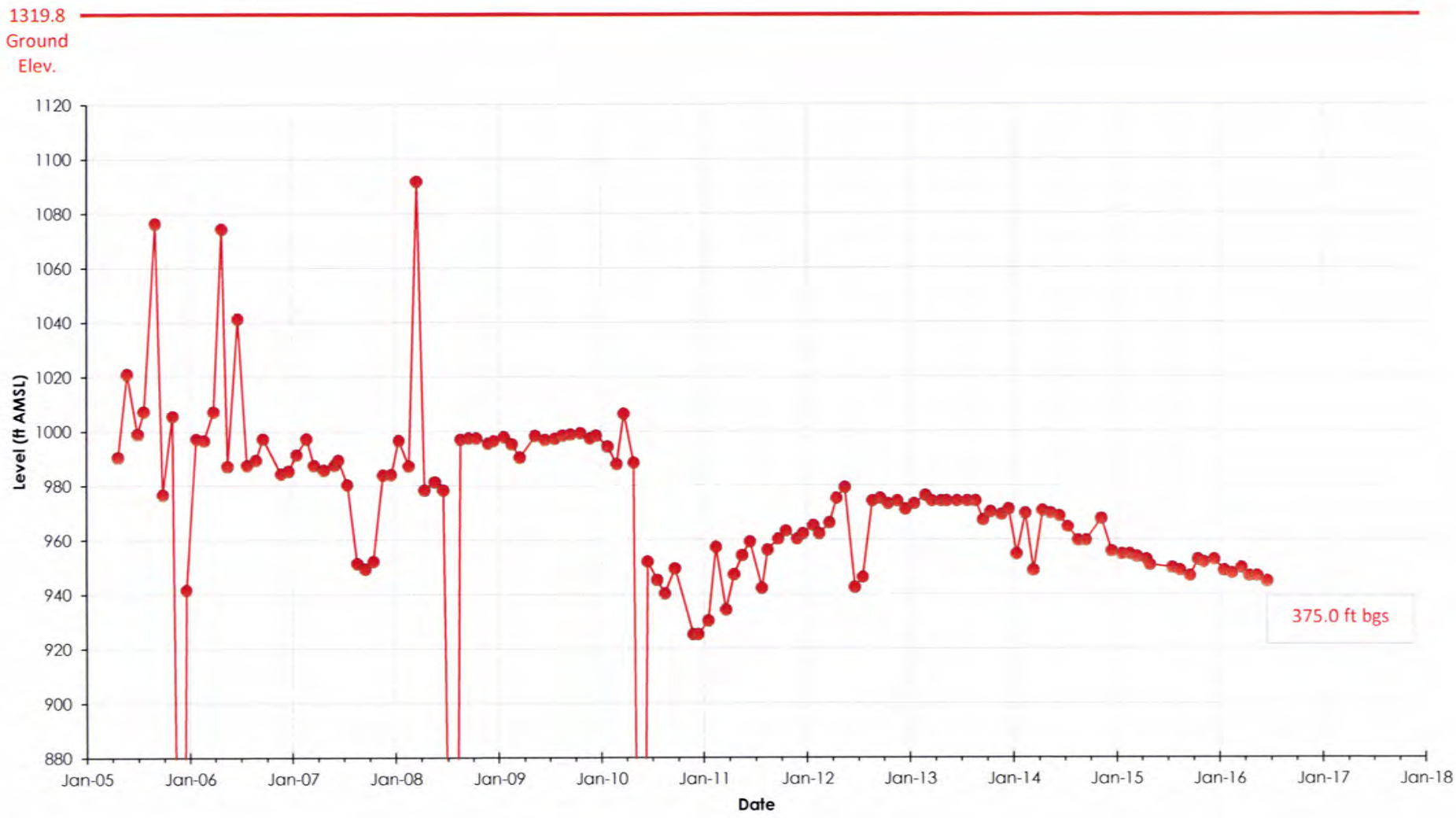
<u>Recharge Source:</u>

Cajon Creek (No Artificial Recharge)

Muscoy Mid-Plume Region

Production and Monitoring Wells





Client/Project

Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

Mallory 3

Title

Water Level Elevations

Hydrographs

<u>Region:</u> Muscoy Plume

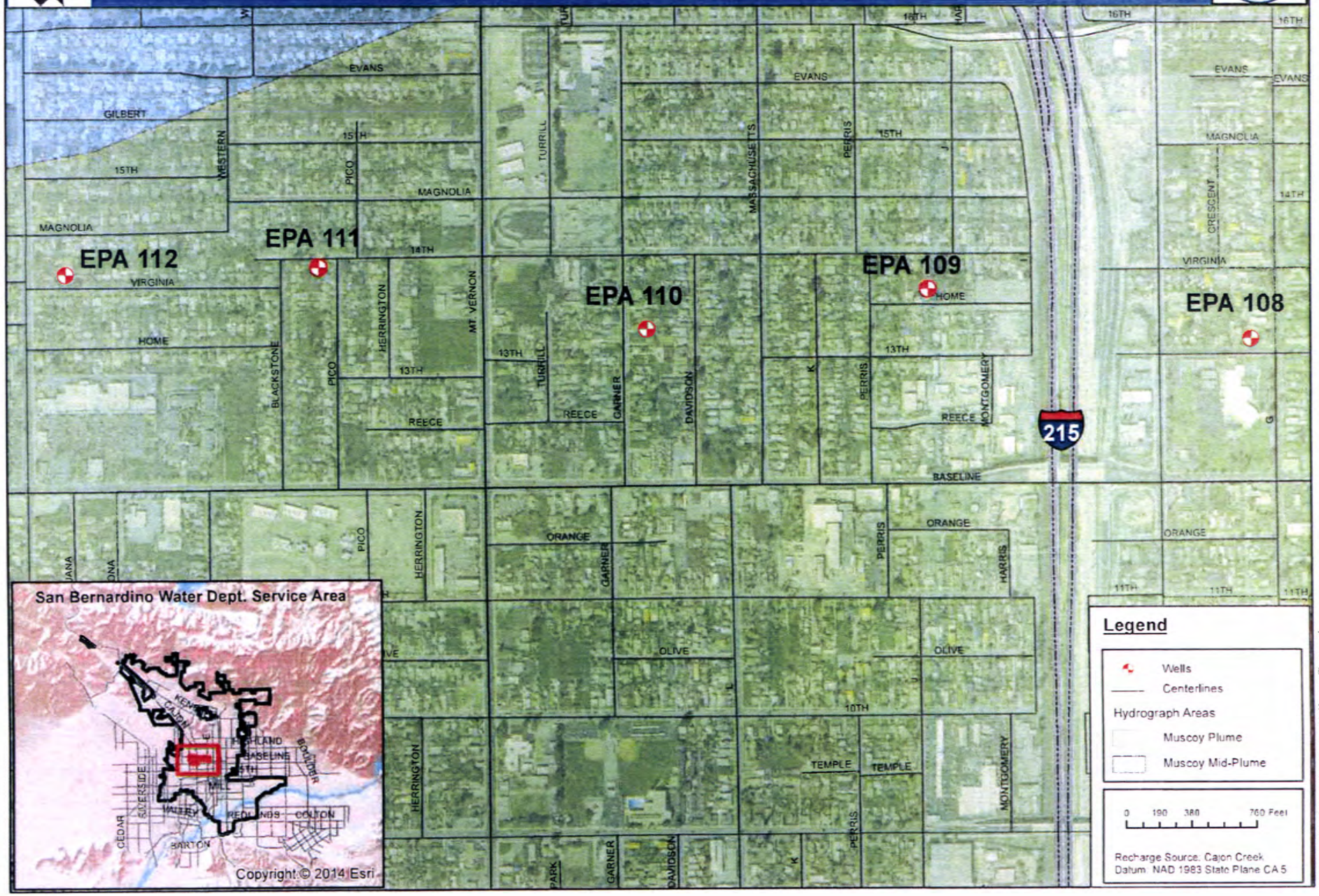
Production, Extraction, and Monitoring Wells

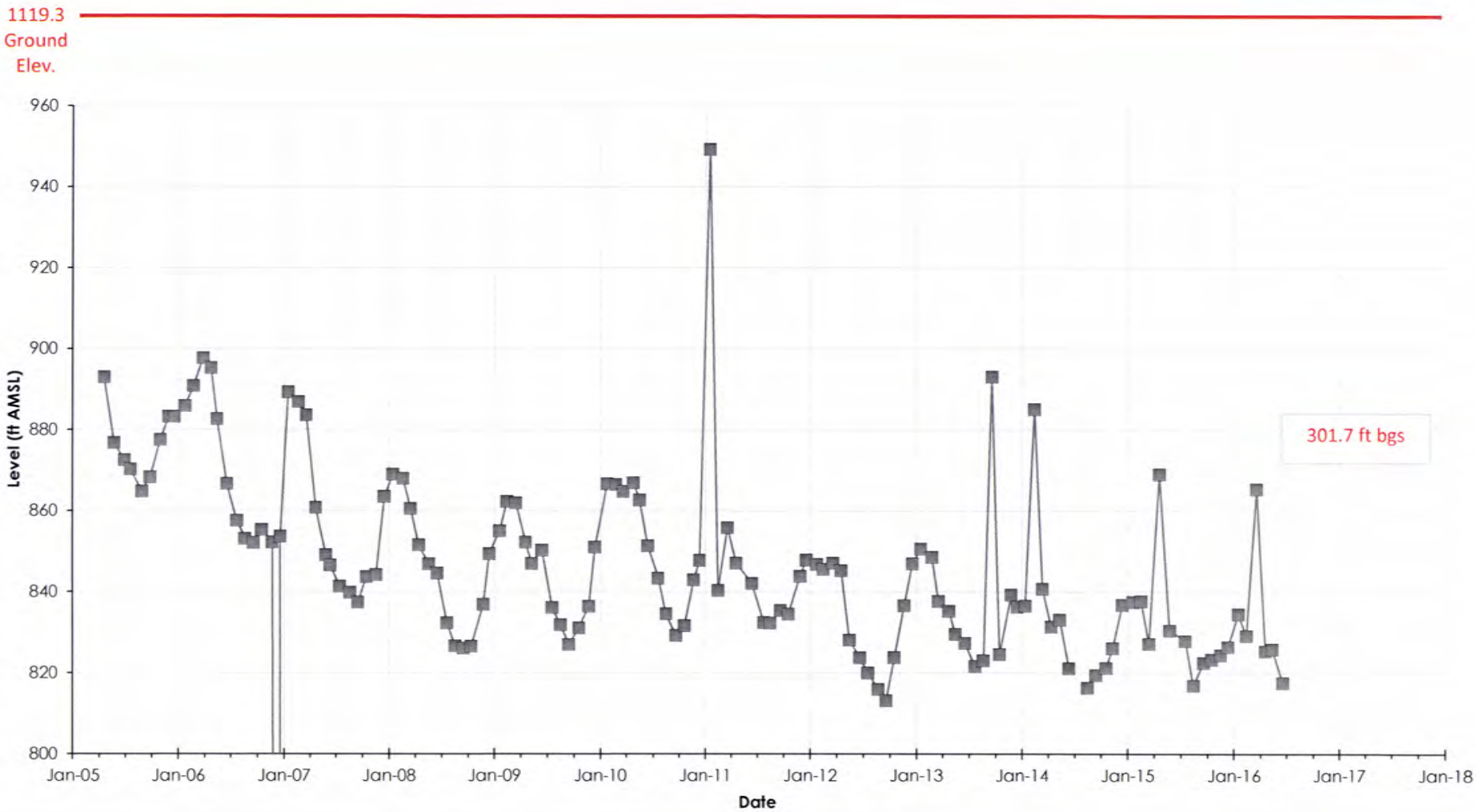
<u>Recharge Source:</u>

Cajon Creek (No Artificial Recharge)

Muscoy Plume Region

Production, Extraction, and Monitoring Wells





Client/Project

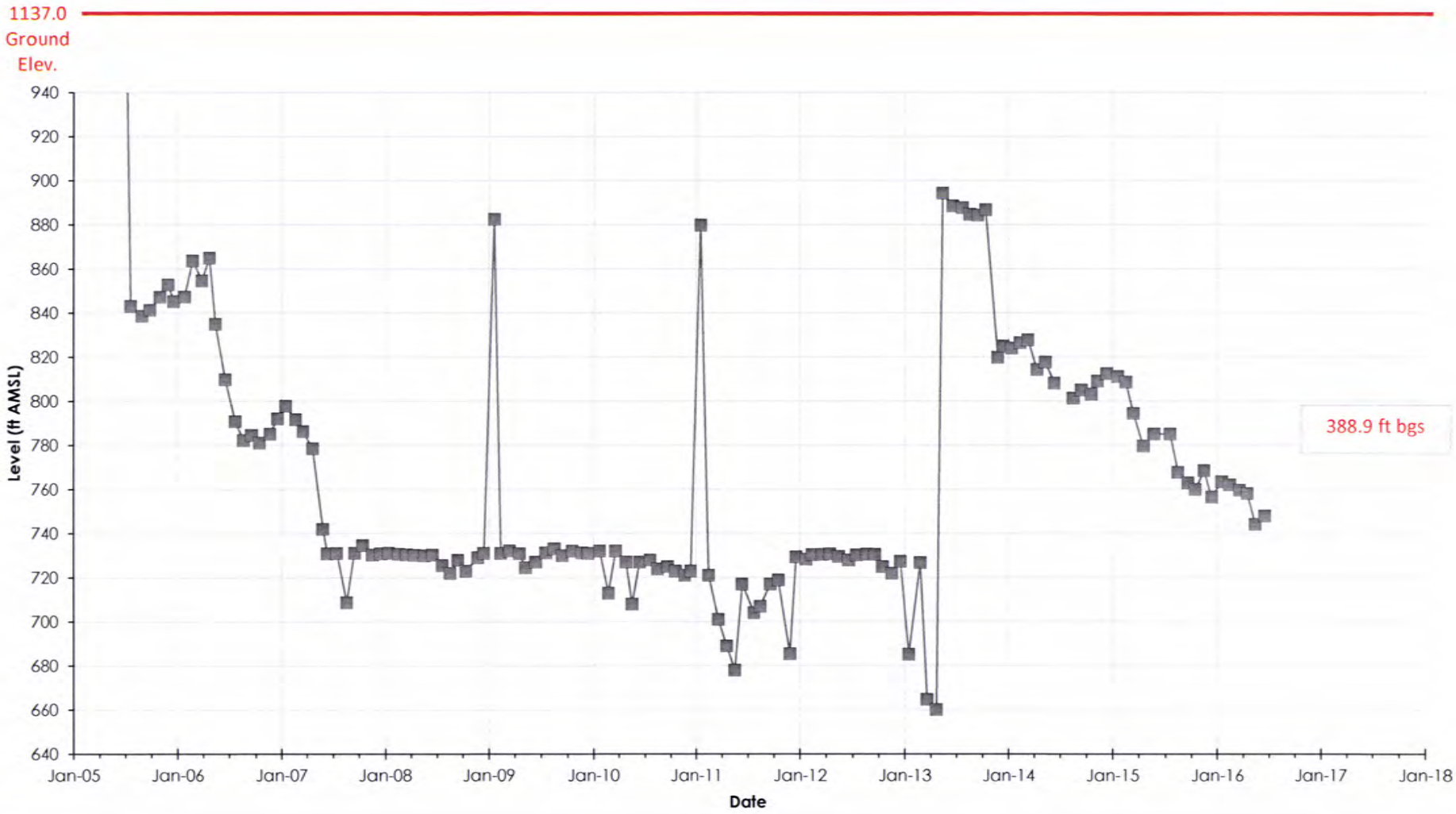
Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

EPA 108

Title

Water Level Elevations



Client/Project

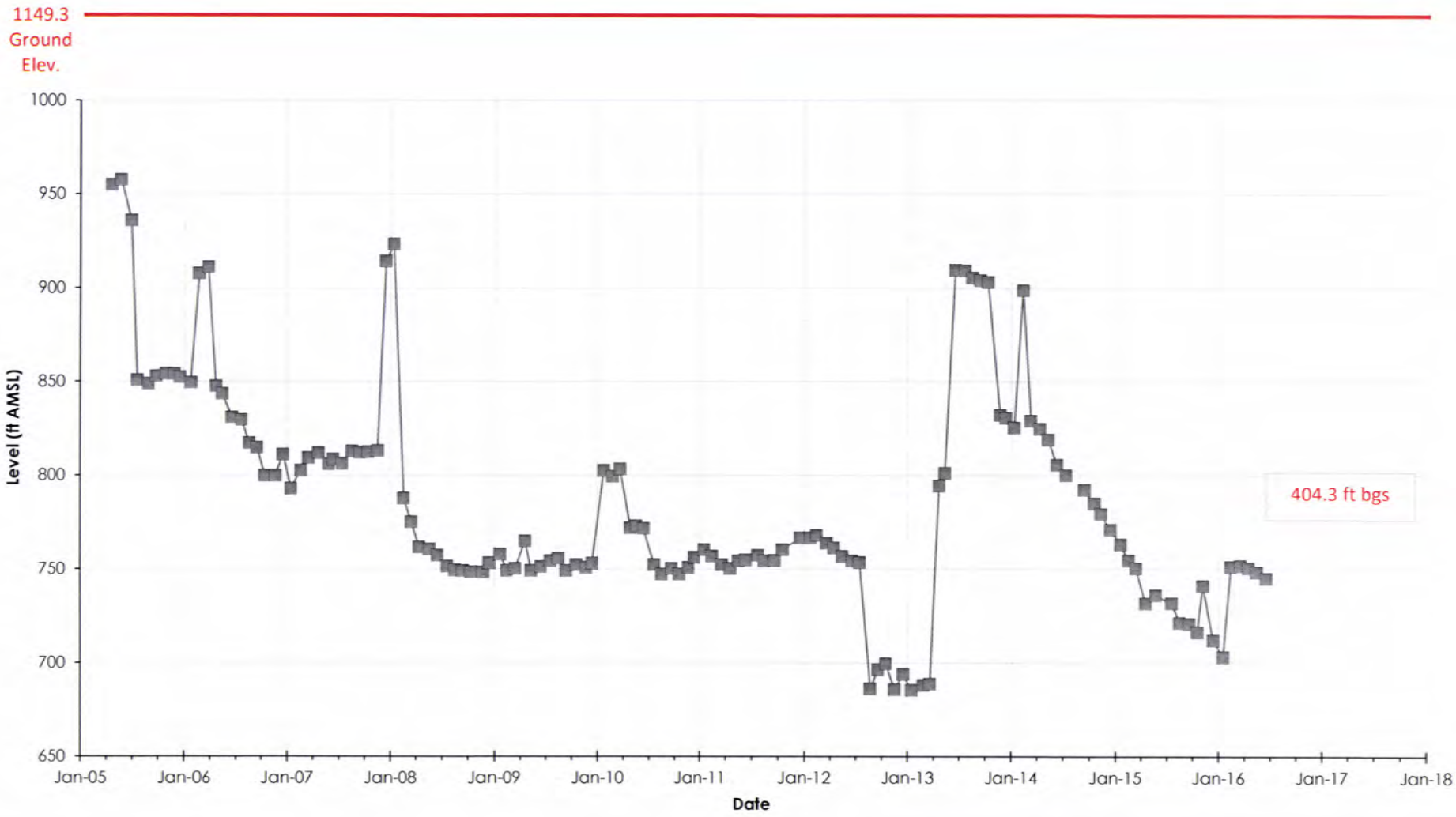
Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

EPA 109

Title

Water Level Elevations



Client/Project

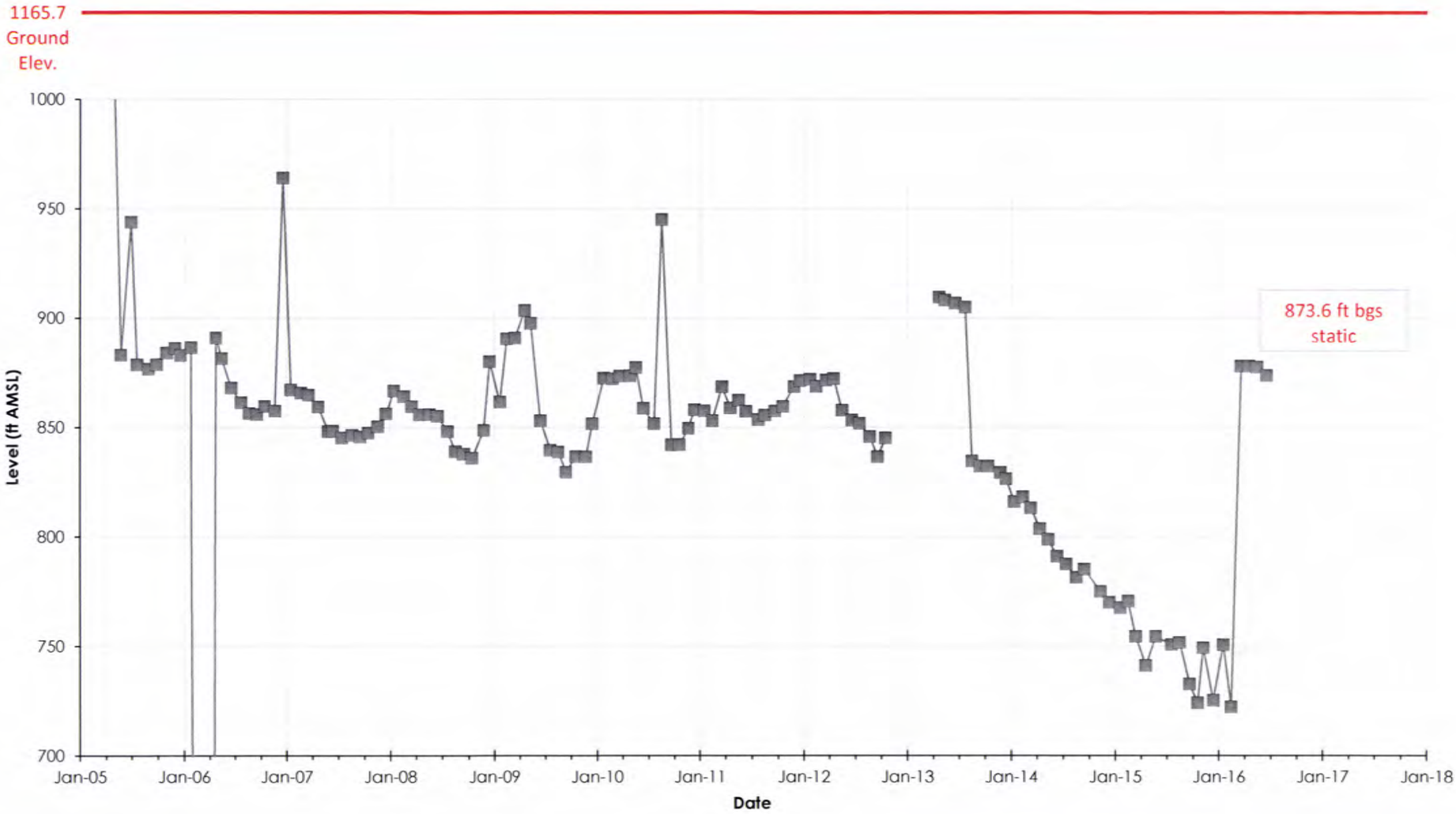
Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

EPA 110

Title

Water Level Elevations



Client/Project

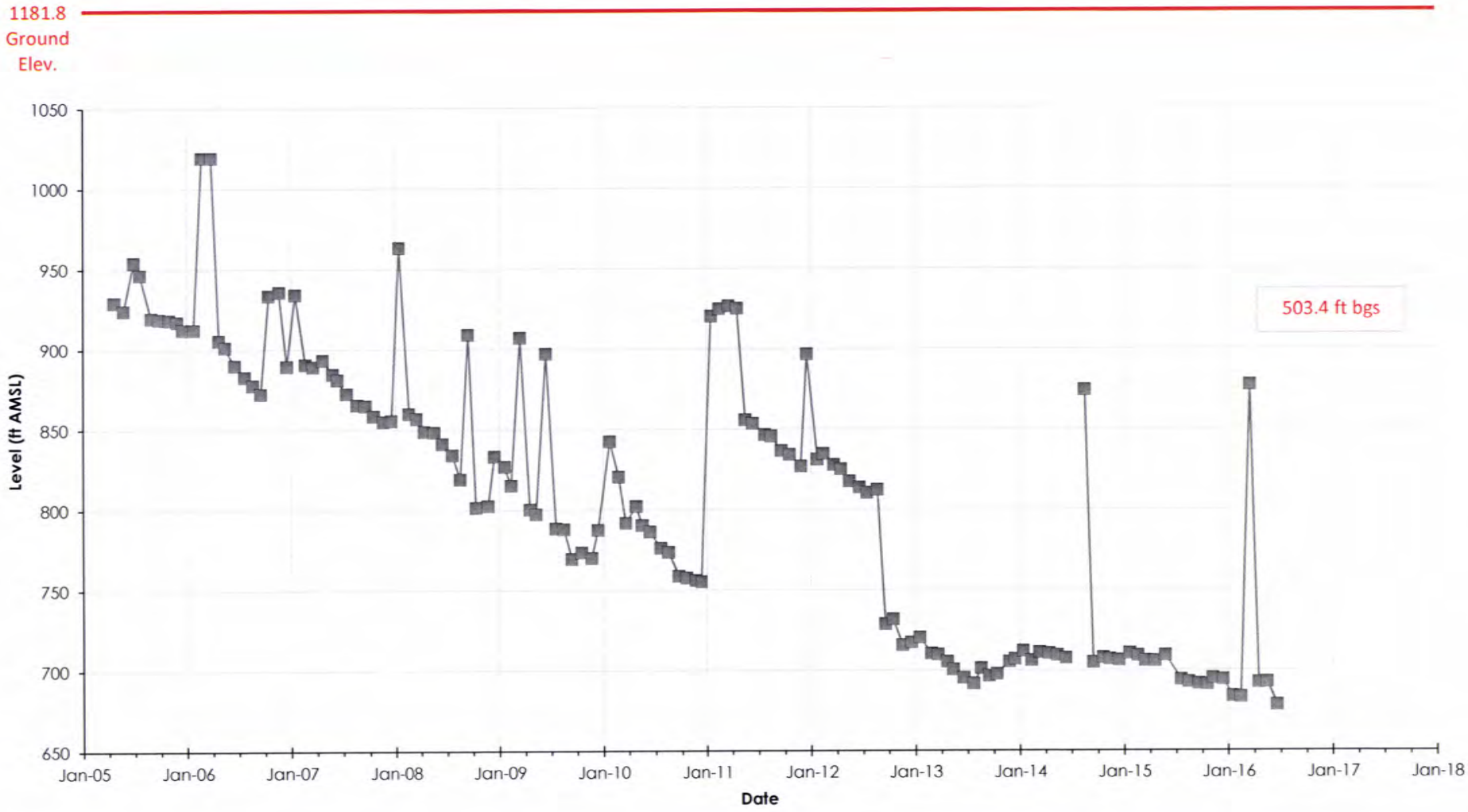
Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

EPA 111

Title

Water Level Elevations



Client/Project

Water Level Monitoring Program
City of San Bernardino California

Figure/Well No.

EPA 112

Title

Water Level Elevations

EXHIBIT B

SAN BERNARDINO MUNICIPAL WATER DEPARTMENT
Monthly Depth To Water For Wells Maintained By Operations
June 2016

Well Name	State Well Number Rec. Number	Reading Date	Static Depth to Water	Pumping Depth to Water	Ref. Point Elev.	Static WL Elev.	Pumping WL Elev.	Static WL-Pump Elev.	Pumping WL-Pump Elev.	Pump Elev./ BGS	Tech	Not Measured/Why	Method
10TH & J ST	01S/04W-B04S 3603207	6/20/2016	267.00	298.00	1112.8	845.8	814.8	83.0	52.0	762.8/ 350	TR	[ ]	Airline
16TH & SIERRA WAY	01N/04W-34G03 S 3600726	6/22/2016	284.60	285.40	1135.3	850.7	849.9	93.4	92.6	757.3/ 378	NH	[ ]	Electric Wire Sounder
17TH & SIERRA WAY 2	01N/04W-34G01 S 3603208	6/22/2016							0.0	766.9/ 375	NH	[X] Well Blocked	Electric Wire Sounder
19TH ST 1	01N/04W-32D03 S 3600717	6/23/2016	345.30			885.9		4.7	0.0	881.2/ 350	NH	[ ]	Electric Wire Sounder
19TH ST 2	01N/04W-32D04 S 3600718	6/23/2016	349.90	481.10	1236.1	886.2	755.0	270.1	138.9	616.1/ 620	NH	[ ]	Electric Wire Sounder
25TH & NORTH E ST	01N/04W-27M01 S 3600721	6/23/2016	315.80		1192.1	876.3		35.8		912.1/ 280	NH	[ ]	Electric Wire Sounder
27TH & ACACIA	01N/04W-27M02 S 3600720	6/23/2016	305.30	309.40	1183.4	878.1	874.0	34.7	30.6	843.4/ 340	NH	[ ]	Electric Wire Sounder
30TH ST	01N/04W-27G01 S 3600719	6/20/2016	338.20	350.30	1226.8	888.6	876.5	61.8	49.7	826.8/ 400	NH	[ ]	Electric Wire Sounder
31ST ST & MT. VIEW	01N/04W-27B01 S 3602081	6/20/2016	344.80	349.50	1232.3	887.5	882.8	95.2	90.5	792.3/ 440	NH	[ ]	Electric Wire Sounder
40TH & VALENCIA	01N/04W-14P01 3603472	6/21/2016	266.50			1088.5		183.5	0.0	905/ 450	NH	[ ]	Electric Wire Sounder
7TH STREET	01S/04W-03J05 S 3602265	6/21/2016	209.30	216.50	1056.5	847.2	840.0	120.7	113.5	726.5/ 330	NH	[ ]	Electric Wire Sounder
ANTIL 5	01S/04W-02K02 S 3600731	6/21/2016						0.0		787.8/ 270	NH	[X] Well Blocked	Electric Wire Sounder
ANTIL 6	01S/04W-02K08 S 3602422	6/23/2016						0.0		777.5/ 275	NH	[ ]	Electric Wire Sounder

SAN BERNARDINO MUNICIPAL WATER DEPARTMENT
Monthly Depth To Water For Wells Maintained By Operations
June 2016

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BASELINE & CALIFORNIA	01N/04W-32N01 S 3602400	6/22/2016	335.00			849.9		50.0	0.0	799.9/ 385	AO	[ ]	Airline
CAJON 2	01N/05W-03HO2 S 3601844	6/21/2016	245.00	282.00	1887.1	1642.1	1605.1	105.0	68.0	1537.1/ 350	AO	[ ]	Airline
CAJON 3	01N/05W-03A02 S 3602821	6/21/2016		302.00			1592.9	0.0	55.0	1537.9/ 357	AO	[ ]	Electric Wire Sounder
CAJON 4	01N/05W-03A-S G363792	6/21/2016	247.12	284.40	1923.0	1675.9	1638.6	152.9	115.6	1523/ 400	AO	[ ]	Electric Wire Sounder
CAJON CANYON	02N/05W-19K02 S 3600710	6/21/2016	70.17	89.44	2328.0	2257.8	2238.6	79.8	60.6	2178/ 150	AO	[ ]	Electric Wire Sounder
DEVIL CANYON 1	01N/04W-08M01 S 3600712	6/20/2016	154.03	167.30	1528.9	1374.9	1361.6	96.0	82.7	1278.9/ 250	AO	[ ]	Electric Wire Sounder
DEVIL CANYON 2	01N/04W-07F01 S 3600711	6/21/2016	146.60	160.45	1622.0	1475.4	1461.6	104.9	91.1	1370.5/ 251.5	AO	[ ]	Electric Wire Sounder
DEVIL CANYON 3	01N/04W-06H02 S 3602206	6/20/2016	27.77	32.73	1888.5	1860.7	1855.8	7.2	2.3	1853.5/ 35	AO	[ ]	Electric Wire Sounder
DEVIL CANYON 4	01N/04W-06H01 S 3602205	6/20/2016	41.27	42.00	1903.4	1862.1	1861.4	13.7	13.0	1848.4/ 55	AO	[ ]	Electric Wire Sounder
DEVIL CANYON 5	01N/04W-08M02 S 3602844	6/20/2016	138.93	164.55	1561.7	1422.7	1397.1	161.1	135.5	1261.7/ 300	AO	[ ]	Electric Wire Sounder
DEVIL CANYON 6	01N/04W-06A01 S 3603580	6/20/2016	23.80	37.90	2039.3	2015.5	2001.4	21.2	7.1	1994.3/ 45	AO	[ ]	Electric Wire Sounder
DEVIL CANYON 7	01N/04W-06A02 S 3603579	6/20/2016	23.30	32.50	2041.9	2018.6	2009.4	21.7	12.5	1996.9/ 45	AO	[ ]	Electric Wire Sounder
ELLENA BROTHERS	01N/04W-08P01 S 3602712	6/20/2016	185.77		1476.7	1290.9		115.2		1175.7/ 301	AO	[ ]	Electric Wire Sounder

SAN BERNARDINO MUNICIPAL WATER DEPARTMENT
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June 2016

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EPA 001	01S/04W-03D04 S G3603688	6/22/2016	245.61		1093.9	848.3		116.4		731.9/ 362	TR	[ ]	Electric Wire Sounder
EPA 002	01S/04W-03C03 S G3603689	6/22/2016		255.31	1091.7		836.4		44.7	791.7/ 300	TR	[ ]	Electric Wire Sounder
EPA 003	01S/04W-03C04 S G3603690	6/23/2016		267.64	1095.4		827.7		167.4	660.4/ 435	TR	[ ]	Electric Wire Sounder
EPA 004	01S/04W-03B03 S G3603691	6/23/2016		249.50	1086.3		836.8		50.5	786.3/ 300	TR	[ ]	Electric Wire Sounder
EPA 005	01S/04W-03A04 S G3603692	6/23/2016	192.57	240.97	1083.3	890.7	842.3	111.4	63.0	779.3/ 304	TR	[ ]	Electric Wire Sounder
EPA 006	01N/04W-16M03 S G3603693	6/22/2016	199.88		1396.6	1196.7		100.1		1096.6/ 300	TR	[ ]	Electric Wire Sounder
EPA 007	01N/04W-16M04 S G3603694	6/22/2016		218.20	1404.5		1186.3		41.8	1144.5/ 260	TR	[ ]	Electric Wire Sounder
EPA 108	01N/04W-33Q-S G363786	6/22/2016		301.73	1119.3		817.5		163.3	654.3/ 465	TR	[ ]	Electric Wire Sounder
EPA 108S	01N/04W-33R003S G3603917	6/22/2016	230.63		1119.3	888.6		219.4		669.3/ 450	TR	[ ]	Electric Wire Sounder
EPA 109	01N/04W-33P-S G363787	6/21/2016		388.90	1137.0		748.1		266.1	482/ 655	TR	[ ]	Electric Wire Sounder
EPA 110	01N/04W-33N-S G363788	6/21/2016		404.30	1149.3		745.0		155.7	589.3/ 560	TR	[ ]	Electric Wire Sounder
EPA 111	01N/04W-32R-S G363789	6/21/2016	292.13		1165.7	873.6		247.9		625.7/ 540	TR	[ ]	Electric Wire Sounder
EPA 112	01N/04W-32P-S G363790	6/22/2016		503.40	1181.8		678.4		61.6	616.8/ 565	TR	[ ]	Electric Wire Sounder

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GILBERT ST .	01N/04W-35M03 S 3600729	6/22/2016		285.00	1123.5		838.5		55.0	783.5/ 340	NH	[ ]	Airline
INTER CITY IRRIGATION		6/22/2016			-999.0					-999/ 0		[X] No Data	
INTER CITY MUTUAL 08	01S/04W-23N 3601316	6/22/2016	153.50		1028.0	874.5		0.0		1028/ 0	NH	[ ]	Electric Wire Sounder
IVDA 11	01S/03W-07A06 S 3603649	6/22/2016	233.30		1140.0	906.7		3.3		910/ 230	NH	[ ]	Electric Wire Sounder
KENWOOD 1	02N/05W-19R01S 3603471	6/21/2016	113.00	170.00	2350.8	2237.8	2180.8	210.0	153.0	2027.8/ 323	AO	[ ]	Electric Wire Sounder
KENWOOD 2	02N/05W-19R-S G363791	6/21/2016	121.62	139.50	2289.0	2167.4	2149.5	78.4	60.5	2089/ 200	AO	[ ]	Electric Wire Sounder
LEROY	01N/04W-27A02 S 3602401	6/20/2016	341.70	360.50	1239.7	898.0	879.2	38.3	19.5	859.7/ 380	NH	[ ]	Electric Wire Sounder
LYNWOOD	01N/04W-26E02 S 3600727	6/20/2016	330.60	331.70	1236.2	905.6	904.5	114.4	113.3	791.2/ 445	NH	[ ]	Electric Wire Sounder
LYTLE CREEK 2	01N/05W-36J01 3603027	6/20/2016						0.0		722.2/ 530	AO	[X] Blocked	Electric Wire Sounder
LYTLE CREEK 3-1	01N/05W-36R01 3600713	6/20/2016						0.0		1247.8/ 0	AO	[X] Depth of Water Exceeds Tape Length	Electric Wire Sounder
MALLORY NO.3	01N/04W-30M01S 3601845	6/20/2016	375.00	381.00	1319.8	944.8	938.8	115.0	109.0	829.8/ 490	TR	[ ]	Airline
MILL & D	01S/04W-10N06 S 3600737	6/21/2016	109.50	159.40	1001.1	891.6	841.7	180.5	130.6	711.1/ 290	NH	[ ]	Electric Wire Sounder
MT VERNON WATER CO	01N/04W-31A01 S 3600319	6/20/2016	372.50	387.60	1258.8	886.3	871.2	47.5	32.4	838.8/ 420	AO	[ ]	Electric Wire Sounder

SAN BERNARDINO MUNICIPAL WATER DEPARTMENT
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NEWMARK 1	01N/04W-16E01 S 3600714	6/20/2016	214.86	215.00	1412.7	1197.8	1197.7	105.1	105.0	1092.7/ 320	AO	[ ]	Electric Wire Sounder
NEWMARK 2	01N/04W-16E02 S 3600715	6/21/2016	213.00	232.00	1405.3	1192.3	1173.3	127.0	108.0	1065.3/ 340	AO	[ ]	Steel Tape
NEWMARK 3	01N/04W-16E03 S 3600716	6/22/2016		219.23	1406.4		1187.2		100.8	1086.4/ 320	TR	[ ]	Electric Wire Sounder
NEWMARK 4	01N/04W-16E04 S 3602399	6/21/2016	211.04	229.03	1413.6	1202.6	1184.6	89.0	71.0	1113.6/ 300	AO	[ ]	Electric Wire Sounder
OLIVE & GARNER	01S/04W-04D02S 3603206	6/21/2016	287.63	345.50	1132.5	844.9	787.0	162.4	104.5	682.5/ 450	TR	[ ]	Electric Wire Sounder
PERRIS HILL 4	01N/04W-35C03 S 3601117	6/20/2016	285.50			882.8		15.5	0.0	898.3/ 270	NH	[ ]	Electric Wire Sounder
PERRIS HILL 5	01N/04W-26P03 S 3601115	6/20/2016	285.50			888.0		14.5	0.0	873.5/ 300	NH	[ ]	Electric Wire Sounder
SB COUNTY 1-34A	01S/04W-03Q	6/22/2016						0.0		47/ 0	ED	[X] Dry	Electric Wire Sounder
VINCENT	02N/05W-19Q01 S 3602426	6/21/2016	75.00	101.60	2314.3	2239.3	2212.7	95.0	68.4	2144.3/ 170	AO	[ ]	Electric Wire Sounder
WATERMAN AVE.	01N/04W-27A01 S 3600728	6/20/2016	343.50	353.50	1244.8	901.3	891.3	106.5	96.5	794.8/ 450	NH	[ ]	Electric Wire Sounder

EXHIBIT C

City of San Bernardino Municipal Water Department
Monthly Weather Report
June 2016

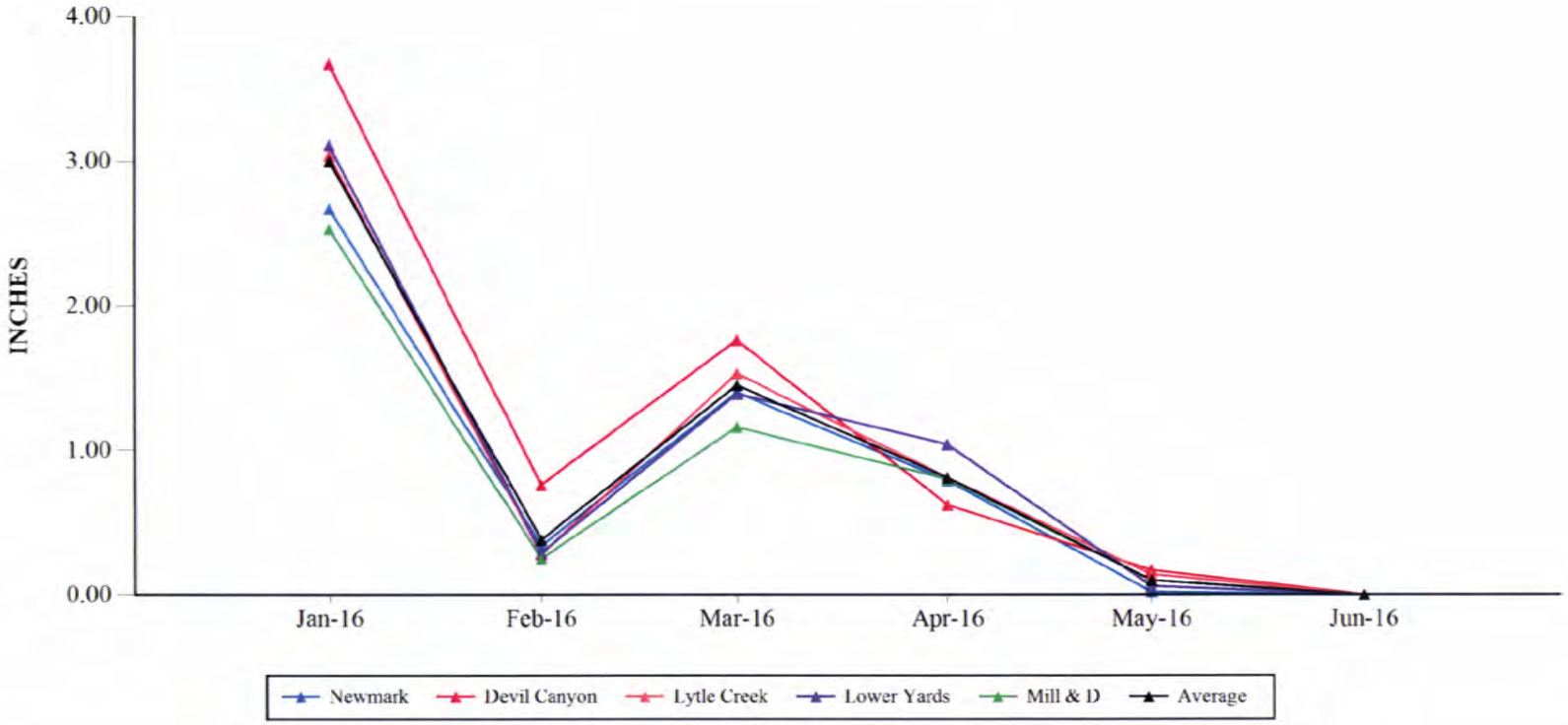
Location	Yards			Mill & D	Lytle Creek	Newmark	Devil Canyon
Date	Max Temp deg F	Min Temp deg F	1/100 of an inch increments	1/100 of an inch increments	1/100 of an inch increments	1/100 of an inch increments	1/100 of an inch increments
1	89.3	61.9	0.00	0.00	0.00	0.00	0.00
2	99.6	63.8	0.00	0.00	0.00	0.00	0.00
3	106.3	68.7	0.00	0.00	0.00	0.00	0.00
4	102.5	70.2	0.00	0.00	0.00	0.00	0.00
5	94.6	68.6	0.00	0.00	0.00	0.00	0.00
6	87.7	60.0	0.00	0.00	0.00	0.00	0.00
7	91.4	61.0	0.00	0.00	0.00	0.00	0.00
8	93.7	62.4	0.00	0.00	0.00	0.00	0.00
9	88.1	64.4	0.00	0.00	0.00	0.00	0.00
10	92.0	62.8	0.00	0.00	0.00	0.00	0.00
11	72.9	62.8	0.00	0.00	0.00	0.00	0.00
12	78.8	62.8	0.00	0.00	0.00	0.00	0.00
13	79.0	61.5	0.00	0.00	0.00	0.00	0.00
14	82.6	59.4	0.00	0.00	0.00	0.00	0.00
15	81.0	62.3	0.00	0.00	0.00	0.00	0.00
16	87.7	61.2	0.00	0.00	0.00	0.00	0.00
17	95.6	64.0	0.00	0.00	0.00	0.00	0.00
18	102.6	67.8	0.00	0.00	0.00	0.00	0.00
19	112.0	72.8	0.00	0.00	0.00	0.00	0.00
20	113.5	78.7	0.00	0.00	0.00	0.00	0.00
21	99.8	76.7	0.00	0.00	0.00	0.00	0.00
22	98.9	72.2	0.00	0.00	0.00	0.00	0.00
23	97.1	67.2	0.00	0.00	0.00	0.00	0.00
24	93.5	67.7	0.00	0.00	0.00	0.00	0.00
25	98.5	64.9	0.00	0.00	0.00	0.00	0.00
26	105.9	70.2	0.00	0.00	0.00	0.00	0.00
27	103.0	75.3	0.00	0.00	0.00	0.00	0.00
28	101.4	75.5	0.00	0.00	0.00	0.00	0.00
29	104.0	73.8	0.00	0.00	0.00	0.00	0.00
30	101.8	71.1	0.00	0.00	0.00	0.00	0.00
31							
	Max	Min					
TOTALS	**113.5**	**59.4**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
YTD			**5.89**	**4.84**	**5.80**	**5.22**	**6.98**

SAN BERNARDINO MUNICIPAL WATER DEPARTMENT

CALENDAR YEAR 2016
RAIN READS

DATE	MILL & D	LOWER YARDS	D.C.	L.C.	NEWMARK	AVERAGE
Jan-16	2.53	3.11	3.67	3.04	2.67	3.00
Feb-16	0.25	0.29	0.76	0.28	0.34	0.38
Mar-16	1.16	1.39	1.76	1.53	1.40	1.45
Apr-16	0.80	1.04	0.62	0.81	0.79	0.81
May-16	0.10	0.06	0.17	0.14	0.02	0.10
Jun-16	0.00	0.00	0.00	0.00	0.00	0
TOTAL	4.84	5.89	6.98	5.80	5.22	5.75

All values are in inches

MICHAEL GARLAND
Water Utility
Operations Superintendent

SAN BERNARDINO MUNICIPAL WATER DEPARTMENT
RAINFALL
CALENDAR YEAR 2016