



RON CHAPMAN, MD, MPH  
Director

State of California—Health and Human Services Agency  
California Department of Public Health



EDMUND G. BROWN JR.  
Governor

STATE OF CALIFORNIA

**DOMESTIC WATER SUPPLY PERMIT AMENDMENT #3**

**ISSUED TO EAST BAY MUNICIPAL UTILITY DISTRICT (EBMUD) TO ALLOW THE USE OF THE SACRAMENTO RIVER WATER AT FREEPORT AS A SUPPLEMENTAL SUPPLY DURING WATER SHORTAGE PERIODS AND TO ALLOW THE USE OF THE FREEPORT REGIONAL WATER AUTHORITY (FRWA) INTAKE AND CONVEYANCE FACILITIES TO CONVEY THIS NEW SOURCE TO THE FOLSOM SOUTH CANAL (FSC) AND THENCE TO EBMUD'S NEW FOLSOM SOUTH CANAL CONNECTION (FSCC) FACILITIES AND EBMUD'S EXISTING MOKELUMNE AQUEDUCT SYSTEM FOR STORAGE/BLENDING AND TREATMENT WITHIN THE EBMUD SERVICE AREA BEFORE DISTRIBUTION TO EBMUD CUSTOMERS SUBJECT TO THE CONDITIONS SET FORTH FOR PERMIT AMENDMENT #3 BY THE CALIFORNIA DEPARTMENT OF PUBLIC HEALTH**

**DOMESTIC WATER SUPPLY PERMIT AMENDMENT #4**

**ISSUED TO EBMUD TO ALLOW THE USE OF THE FOLSOM SOUTH CANAL CONNECTION (FSCC) CONVEYANCE FACILITIES AND THE EXISTING MOKELUMNE AQUEDUCT SYSTEM TO CONVEY THE SACRAMENTO RIVER WATER DIVERTED AT FREEPORT TO THE EBMUD SERVICE AREA FOR STORAGE/BLENDING AND TREATMENT BEFORE DISTRIBUTION TO EBMUD CUSTOMERS SUBJECT TO THE CONDITIONS SET FORTH FOR PERMIT AMENDMENT #4 BY THE CALIFORNIA DEPARTMENT OF PUBLIC HEALTH**

**WATER SYSTEM ID NO. 0110005**

**PERMIT NUMBER 02-04-98P-0110005**

**DATE: JULY 11, 2011**

**WHEREAS:**

1. East Bay Municipal Utility District and Sacramento County Water Agency formed the Freeport Regional Water Authority (FRWA), a Joint Powers Authority (JPA), to develop the Freeport Regional Water Project (FRWP) which is designed to deliver Sacramento River water taken at Freeport as a new water supply source for the Sacramento County Water Agency (SCWA) and as a supplemental water supply to EBMUD during water shortage years.

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2. The FRWP consists of two new conveyance systems, the FRWA Facilities which are the operational responsibility of the FRWA and the Folsom South Canal Connection Facilities (FSCC) which are owned and operated by EBMUD. Linking these two systems is the existing Folsom South Canal (FSC), a Central Valley Project (CVP) facility which is owned and operated by the US Bureau of Reclamation (USBR). The major portion of the FRWA Facilities is jointly-owned by the FRWA members (SCWA and EBMUD) and they include: the 185 MGD FRWA intake and pumping facilities, an 84-inch diameter 185 MGD capacity pipeline from the intake station to the bifurcation, and the bifurcation facility where the flow is divided between SCWA and EBMUD, and the flow control station at the Vineyard Water Treatment Plant. FRWA Facilities that are owned by each of the FRWA members include the SCWA 66-inch 85 MGD capacity pipeline extension and the EBMUD 72-inch 100 MGD capacity pipeline extension and the terminal weir structure (except that FRWA owns the instrumentation, control and communication systems connecting to and located within terminal weir structure). The FRWA facilities transport water from the Sacramento River at Freeport to the Folsom South Canal (FSC) and to the new SCWA Vineyard WTP. FRWA has contracted with SCWA to operate the FRWA facilities.
3. EBMUD's FSCC Facilities consist of two new pumping plants (Clay Station and Camanche) and a 72-inch diameter pipeline which transports water from the southern end of the FSC to EBMUD's Mokelumne Aqueduct system for storage/blending and treatment in the EBMUD service area before delivery to its consumers. The design capacity of the FRWP Facilities is 185 MGD with up to 85 MGD of water being diverted to SCWA and up to 100 MGD being diverted to EBMUD under existing entitlement contracts for the respective agencies.
4. EBMUD and SCWA both have CVP contracts with USBR which allow the diversion of Sacramento River water at Freeport.
5. EBMUD submitted an application, dated September 8, 2009, to the Department's San Francisco District Office, to allow the diversion of Sacramento River water at Freeport as a Supplemental Supply during water shortage years, and using the FRWP conveyance facilities, FSCC facilities, and existing EBMUD Mokelumne Aqueduct system to deliver that new supply to EBMUD service area for storage/blending and treatment prior to distribution to EBMUD customers. Sacramento County Water Agency submitted an application, dated February 10, 2010, to the Department's Sacramento District Office, to divert its CVP supply through the Freeport Regional Water Project Intake as a source of supply for the new Vineyard Surface Water Treatment Plant to be completed by the end of 2011.
6. The San Francisco District has regulatory oversight of the EBMUD water system and is responsible for reviewing and processing EBMUD's permit amendment application. The Sacramento District has regulatory oversight of SCWA's Vineyard Water System and will review and process SCWA's permit amendment application for use of this new source for the new SCWA Vineyard WTP.
7. The Department has prepared one technical report that describes in detail the two conveyance systems (FRWA and FSCC) that comprise FRWP; the responsibilities of EBMUD and SCWA as members of FRWA and individually in operating and maintaining these facilities; the water entitlement contracts that allow SCWA and EBMUD to divert Sacramento River water at Freeport; and the **Investigative Findings and Sanitary**

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**Appraisals** of these facilities and their ability to deliver water that will meet drinking water standards.

8. The technical report has two separate **Investigative Findings and Sanitary Appraisals** for: 1) the FRWA facilities that are jointly-owned or operated and convey Sacramento River water from the FRWA Intake/Pump Station through the jointly-owned pipeline to the bifurcation point where the flow is split and diverted through the SCWA pipeline extension to the new SCWA Vineyard WTP and to the FSC (for EBMUD conveyance) and; 2) the EBMUD-owned FSCC facilities that convey water from the terminus of the FSC to EBMUD's existing Mokelumne Aqueduct System and thence to EBMUD's local reservoirs for storage/blending prior to treatment and distribution to EBMUD customers. Permit amendment provisions for SCWA and EBMUD are established based on the findings and recommendations of this report.
9. EBMUD operates under revised Domestic Water Supply Permit No. 02-04-98P-0110005, issued on March 31, 1998. The following amendments have been made to EBMUD's original permit:
  - Amendment No. 1 was issued April 17, 2001. This amendment allows the Walnut Creek WTP, an in-line filtration plant to operate at a maximum filtration rate up to 8 gpm/ft<sup>2</sup> when the raw water turbidity is less than or equal to 1.0 ntu. Daily production can not exceed 100 mgd when operating at 8 gpm/ft<sup>2</sup>. The normal maximum filtration rate is 6.0 gpm/ft<sup>2</sup>.
  - Amendment No. 2 was issued May 3, 2010, to allow the expansion of the Walnut Creek Water Treatment Plant and the Operation of Waste Stream Reclaim Improvements. Plant improvements include a new 72-inch raw water pipeline, four new filters (two filters in operation in 2010 and two filters under construction in 2011), chemical feed systems, new chlorine contact chamber clearwell, washwater and reclaim system, control systems, etc.).
10. EBMUD is a community water system that supplies water to 1.4 million people within 20 incorporated cities and 15 communities in Alameda and Contra Costa counties.
11. The Mokelumne River, a Sierra snow-melt source, is the primary water supply source (over 90 percent) for EBMUD. The remaining raw water sources are comprised of runoff to local reservoirs of San Pablo Reservoir and Upper San Leandro Reservoir.
12. EBMUD's current water supply can not meet customer demand during multiple drought years. EBMUD implemented mandatory 15% reduction in water use in 2008 when it experienced a second consecutive dry year.
13. EBMUD has three in-line filtration plants (Walnut Creek WTP – 115 MGD, Orinda WTP – 175 MGD, Lafayette WTP – 30 MGD) and three conventional filtrations plants (Sobrante WTP – 60 MGD, Upper San Leandro WTP – 60 MGD, San Pablo WTP – Standby - 50 MGD).

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THEREFORE: The California Department of Public Health has determined the following:

EBMUD can meet Sections 116300 through 116750 of the California Health and Safety Code, inclusive, when it diverts its contract entitlement allocation of CVP water from the Sacramento River at Freeport during water shortage years for use as a supplemental supply for its consumers.

The EBMUD is hereby issued water permit amendment No. 3 to allow the use of Sacramento River Water at Freeport as a supplemental water supply during water shortage years using the recently constructed FRWA Intake facilities to convey this source to the FSC and thence by EBMUD's FSCC facilities and the EBMUD existing Mokelumne Aqueduct System to the EBMUD service area for storage/blending and treatment prior to distribution to customers subject to the following provisions:

1. EBMUD shall only use the Sacramento River Supply diverted at the FRWA intake as a supplemental supply during water shortage periods in accordance with the conditions specified under its Long Term Renewal Contract No. 14-06-200-5183A-LTR1 (dated April 10, 2006) with USBR.

Under the terms of this contract, EBMUD can take delivery of up to 133,000 AF in a water year when the March 1<sup>st</sup> forecast of the October 1<sup>st</sup> total system storage capacity is below 500,000 AF. EBMUD can not exceed a total of 165,000 AF in three consecutive years when total system storage is projected to remain below 500,000 AF which is consistent with the entitlement condition stated in the current Long Term Renewal Contract for Central Valley Project Water, dated April 10, 2006, between EBMUD and USBR.

2. FRWA Intake Facilities shall be operated in accordance with the Coordinated Operations Agreement for the Freeport Regional Water Authority Intake Facilities and City of Sacramento Sump 28 Storm Water Pump Station, dated October 3, 2006 (and as amended) between FRWA and the City of Sacramento to prevent storm water discharges from Sump 28 from being diverted through the FRWA Intake during low flow conditions, periods of time when Sacramento River flow, as measured at the Freeport Bridge, is less than 1000 cubic feet per second. Amendments to the Agreement shall be submitted to the Department.
3. FRWA Intake Facilities shall be operated in accordance to the Coordinated Operations Agreement for the Freeport Regional Water Authority Intake Facilities and Sacramento Regional County Sanitation District, dated December 13, 2006 (and as amended) between FRWA and the Sacramento Regional County Sanitation District, to prevent reverse flows from the Sacramento Regional County Sanitation District Wastewater Treatment Plant discharge from entering the FRWA Intake. Amendments to the Agreement shall be submitted to the Department.
4. EBMUD and SCWA as JPA representatives of FRWA shall follow the Coordinated Operations and Maintenance Plan for the Freeport Regional Water Project and the Folsom South Canal, dated August 23, 2006 (and as amended). This Plan describes the objectives of the FRWP, the constraints affecting operation, and the general procedures that will be used to operate the FRWP in conjunction with the USBR's

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operation of the FSC. The flow rate into the FSC must be matched by the diversion rate from the FSCC pipeline. Amendments to the Agreement shall be submitted to the Department.

5. EBMUD and SCWA as JPA representatives of FRWA will follow the Agreement for Provision of Operation and Maintenance Services for the Freeport Authority Intake and Pipeline, dated November 9, 2006 (and as amended). This agreement specifies that SCWA will operate the Joint Facilities as specified in the approved Operations Plan. SCWA is the designated contract operator for the FRWA Intake/Pump Station Facilities. Amendments to the Agreement shall be submitted to the Department.
6. FRWA Intake Facilities shall be operated in accordance to the latest FRWA Operations Plan approved by the Department. The current plan is dated February 2006 and has been approved by the Department. The plan shall include sediment management practices similar to those described in the Freeport Regional Water Authority Intake Facilities Design Sediment Management Plan, dated October 28, 2005.
7. EBMUD and SCWA as JPA representatives of FRWA shall submit revisions to the approved Operations Plan and the 2005 Sediment Management Plan to the Sacramento and San Francisco District offices for review and approval.
8. EBMUD and SCWA as JPA representatives of FRWA shall notify the Department if there is a change in the contract operator.
9. EBMUD and SCWA as JPA representatives of FRWA shall comply with California Department of Public Health's water quality reporting requirements.

A separate permit amendment (amendment #4) is being issued to EBMUD to allow EBMUD to use recently constructed FSCC conveyance facilities and the existing Mokelumne Aqueduct System to deliver its Sacramento River water entitlement of CVP water at Freeport from the FSC to EBMUD service area for storage/blending and treatment before distribution to EBMUD customers.

The EBMUD is hereby issued water permit amendment No. 4 to subject to the following conditions:

1. Whenever EBMUD diverts the Sacramento River supply at Freeport for use as supplemental supply during water shortage periods, it shall be transported from the FRWA Intake via FRWA pipelines, Folsom South Canal (FSC), FSC Connection (FSCC) Facilities, and the Mokelumne Aqueduct System to San Pablo Reservoir and/or Upper San Leandro (USL) Reservoir where it will be blended with the local reservoir water before treatment at the EBMUD conventional filtration plants. The blended supply at San Pablo Reservoir will be treated at the Sobrante WTP and blended supply at Upper San Leandro Reservoir will be treated at the Upper San Leandro WTP.
2. EBMUD shall operate the EBMUD pipeline extension and FSCC facilities in accordance to the Folsom South Canal connection Water System Operations Plan, dated July 2009 (and as revised).


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3. EBMUD shall provide conventional filtration treatment and disinfection at all times for the blended supply from San Pablo Reservoir and USL Reservoir.
4. The EBMUD shall provide 3.0 log reduction of Giardia cysts and 4.0 log reduction of virus through filtration and disinfection at the Upper San Leandro and Sobrante Water Treatment Plants at all times and shall operate these plants in accordance with the latest approved Operations Plan and the performance standards and operating criteria specified in the SWTR. The Upper San Leandro and Sobrante WTPs are credited with 2.5 log removal of Giardia cysts and 2.0 log removal of viruses when operated in accordance with the latest approved Operations Plan and the performance standards and operating criteria specified in SWTR.
5. The Upper San Leandro and Sobrante WTPs shall maintain at all times at least 0.5 log inactivation of Giardia cysts and 2.0 log inactivation of viruses through the disinfection process prior to the first connection.
6. The Operations Plan for the Upper San Leandro and Sobrante WTPs shall be revised to include the Sacramento River as a new supplemental source of supply
7. San Pablo WTP is a standby facility and will not be used, except in an emergency or major facility outage. It is conventional water treatment plant.
8. EBMUD shall prevent cross connections between the Sacramento River water and Pardee Water, and between Sacramento River water and the inline filtration plants when transporting the Sacramento River supply from the FRWA intake, FRWA Joint Pipeline, FSCC facilities, Mokelumne Aqueduct System to terminal reservoirs by following the procedures described in the Folsom South Canal Connection Cross Connection Control Technical Memorandum Prepared by EBMUD Design Division/Water Operations Department, dated March 2009 (and as revised).
9. EBMUD shall comply with Title 22, Chapter 15 Water Quality Monitoring Requirements for Surface Water Sources, and including the EBMUD Sacramento River supplemental supply water quality monitoring plan approved by the Department on July 21, 2009.
10. To comply with the Disinfection By-products Rule, EBMUD shall monitor for precursors (TOC, etc.) at each WTP Intake and its water supply.

For the Department of Public Health



Betty Graham, P.E.  
Senior Sanitary Engineer