

City of Biggs Submission

Information needed to characterize individual Ag Dominated Water Bodies

(to be used in conjunction with Water Body Categorization Flow Chart 1 and completed in partnership with the entity that manages/operates the Water Bodies evaluated within this document)

A. Water Body Categorization Information

I. General

1. Entity or district name and mailing address (include website address, if applicable)

Applicant:

City of Biggs

P.O. Box 307

Biggs, CA 95917

(530) 868-1396

<http://www.biggs-ca.gov/public-works/index.htm>

Managing/operating entity:

Reclamation District 833 (Lateral K and Main Drainage Canal)

1643 West-Biggs Gridley Road

Gridley, CA 95948

California Department of Water Resources (Cherokee Canal)

Division of Flood Management

3310 El Camino Ave., Suite 114

Sacramento, CA 95821-9000

Biggs-West Gridley Water District (provides irrigation supply water)

1713 West-Biggs Gridley Road

Gridley, CA 95948

<http://www.bwgwater.com/>

2. Manager or Contact Person (include phone and email)

Brian Martin (*representing the City of Biggs*)

Bennett Engineering

(916) 783-4100

bmartin@ben-en.com

Chuck Nuchols
Reclamation District 833 Manager
(530) 624-4328
rd833@outlook.com

Jon Ericson
Chief, Flood Maintenance Office
Department of Water Resources (DWR)
916-574-0384
Jon.Ericson@water.ca.gov

Eugene Massa Jr.
Biggs-West Gridley Water District
General Manager
(530)846-3317
emassa@bwgwater.com

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3. Complete the information needed in Table 1 as provided, with a separate record for each water body to be evaluated:

Table 1 Water Body Information

Name of water body	Type (natural, modified, or constructed)	Ag Dominated Water Body Category (from Flow chart 1)	For Constructed or Modified			Length of water body or segment (miles)	Water Type (e.g., Supply Water only, Ag return flows subsurface tile drainage water, municipal or industrial wastewater, storm water)	Flow Characteristics/ Flow Period		Channel Maintenance Activities and Frequency
			Type of Construction or Modification (e.g. earth-lined, concrete, underground pipe)	Year of Construction or Modification	Purpose(s) of Construction or Modification			Natural	Managed	
<i>Lateral K (RD 833)</i>	<i>constructed</i>	<i>C1</i>	<i>Earthlined</i>	<i>Early 1900s</i>	<i>Ag Drainage</i>	<i>1.7 miles</i>	<i>Ag return flows, treated municipal wastewater, groundwater seepage, storm water during winter season</i>	<i>Constructed water body – no natural flow</i>	<i>Generally low flow conditions with year-round effluent discharge, but volume does increase during irrigation season, in part due to backflow from the Main Drainage Canal</i>	<i>RD 833 has a district-wide NPDES general permit for Aquatic Pesticide Application (Aquaneat). Application period is between April-October annually Channel excavation by RD 833 when needed</i>

Name of water body	Type (natural, modified, or constructed)	Ag Dominated Water Body Category (from Flow chart 1)	For Constructed or Modified			Length of water body or segment (miles)	Water Type (e.g., Supply Water only, Ag return flows subsurface tile drainage water, municipal or industrial wastewater, storm water)	Flow Characteristics/ Flow Period		Channel Maintenance Activities and Frequency
			Type of Construction or Modification (e.g. earth-lined, concrete, underground pipe)	Year of Construction or Modification	Purpose(s) of Construction or Modification			Natural	Managed	
Main Drainage Canal (RD 833)	constructed	C1	Earthlined	Early 1900s	Ag Drainage	13 miles	Ag return flows, urban runoff, treated municipal wastewater, groundwater seepage, storm water during winter season	Constructed water body – no natural flow	Intermittent flow conditions year-round, with increased volume during irrigation and winter storm seasons	RD 833 NPDES general permit (see above) Very little maintenance required. Excavation only when needed due to blockage.
Cherokee Canal	constructed	C1	Earthlined with a few segments concrete lined	Initial segments in late 1800s, more in early 1900s by local farmers, Army Corps work in 1959-60	Originally constructed to channel waste mining water in Cherokee to Sacramento Valley for agricultural use. Later construction served to provide Flood Control during storm	22 miles	Ag return flows, urban runoff, treated municipal wastewater, groundwater seepage, storm water during winter season, wetlands drainage	Constructed water body – no natural flow	Intermittent flow conditions year-round, with increased volume during irrigation and winter storm seasons	Excavation/dredging, beaver and debris pile removal as needed There is no set schedule. DWR also has a NPDES general permit through State Water Resource Control Board to apply aquatic herbicides. The application is done less than every year

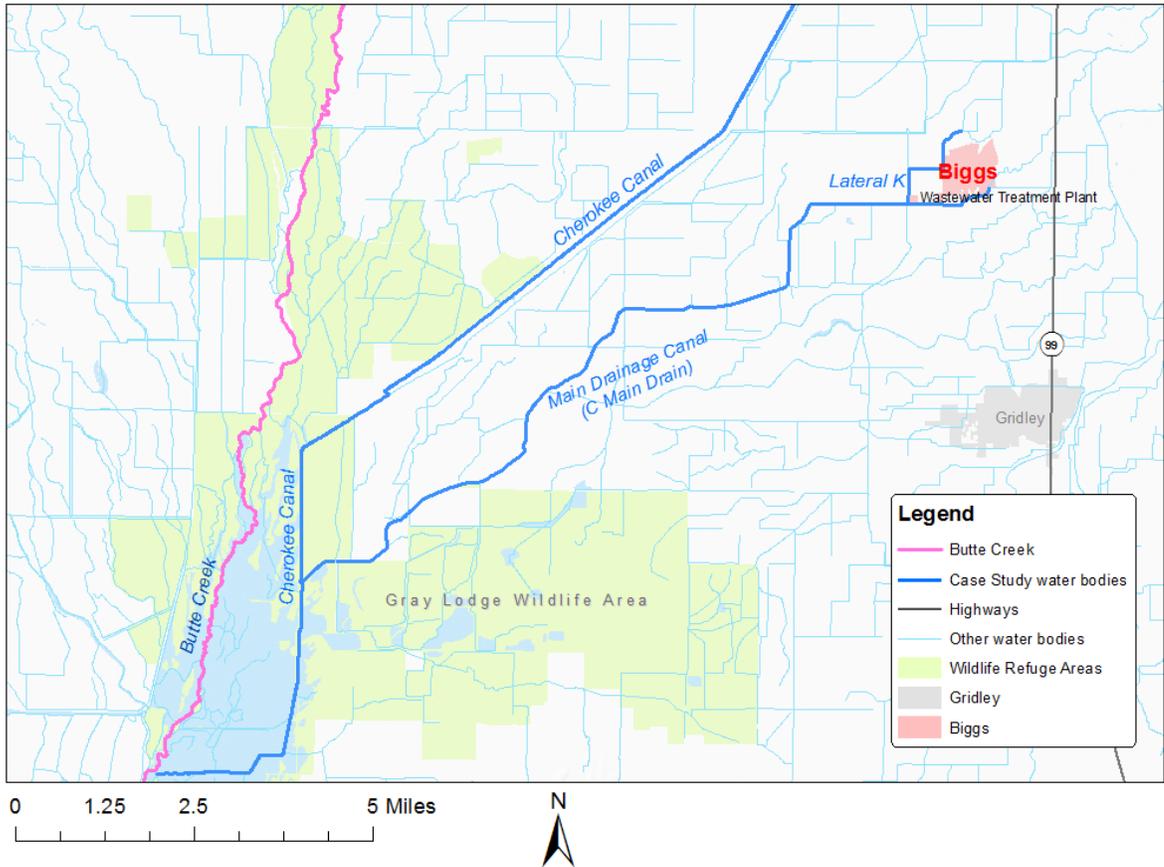
Name of water body	Type (<i>natural, modified, or constructed</i>)	Ag Dominated Water Body Category (<i>from Flow chart 1</i>)	For Constructed or Modified			Length of water body or segment (miles)	Water Type (<i>e.g., Supply Water only, Ag return flows subsurface tile drainage water, municipal or industrial wastewater, storm water</i>)	Flow Characteristics/ Flow Period		Channel Maintenance Activities and Frequency
			Type of Construction or Modification (<i>e.g. earth-lined, concrete, underground pipe</i>)	Year of Construction or Modification	Purpose(s) of Construction or Modification			Natural	Managed	
					<i>season and Ag Irrigation and Drainage in dry months</i>					<i>for Primrose control. Channel is more often mowed by hand or by mechanical methods as needed.</i>

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4. List sources, documents, reports or references used for making the Water Body Category (Flow Chart 1) determination provided in Table 1 for the area under consideration. Links to websites can also be provided if applicable.
 - [Central Valley Water Board Staff Site Surveys of the Biggs area on 3/21/2012 \(Central Valley Water Board, 2012a\)](#)
 - [Central Valley Water Board Meeting Notes for a meeting on 3/21/2012 with Reclamation District 833, Biggs-West Gridley Water District, and City of Biggs representatives. \(Central Valley Water Board, 2012b\)](#)
 - [Central Valley Water Board Meeting Notes on 6/4/2014 with representatives from the City of Biggs and Reclamation District 833 \(Central Valley Water Board, 2014a\).](#)
 - [Central Valley Water Board Meeting Notes on 6/16/2014 with representatives from the California Department of Water Resources, Division of Flood Management. \(Central Valley Water Board, 2014b\)](#)
 - [Department of Water Resources 2009 CEQA document for Cherokee Canal Corridor Management Strategy contains history on the channel construction. \(Department of Water Resources, 2009\)](#)
 - [National Hydrography Dataset –Lateral K has a feature type attribute of “Canal/Ditch”. The Main Drainage Canal and the Cherokee Canal have feature type attributes of “Canal/Ditch” and “Artificial Path” \(U.S. Environmental Protection Agency and the U.S. Geological Survey, 2005\)](#)
 - [1992 Inland Surface Water Plan report – Lateral K, Main Drainage Canal and Cherokee Canal were classified as C1 Ag Drains \(Central Valley Water Board, 1992\)](#)
 - [Appendix A of this report shows photographs of Lateral K, the Main Drainage Canal and the Cherokee Canal](#)
 - [Appendix B of this report shows flow-related photographs of the Main Drainage Canal and Lateral K](#)
5. Provide a map showing boundaries of the water bodies under consideration (USGS Quad or other map. (If Geographical Information System (GIS) shape files are available, include as an attachment)

[Figure 1](#) is a map of the Biggs Subarea in Butte County, located in the east side of the Sacramento River Basin.

Figure 1. Biggs Subarea



6. Source(s) of water or the area under consideration

-Ag Return Flows

Lateral K, the Main Drainage Canal and the Cherokee Canal all serve primarily as Ag drainage channels during the irrigation season. Drain water may be held or recycled for Ag supply as well. Agricultural areas in Reclamation District 833 receive most of their irrigation supply water from the Biggs-West Gridley Water District. The primary source of the surface irrigation water is the Thermolito Afterbay. Agricultural properties north of the Cherokee Canal also receive much of their supply water from the Thermolito Afterbay supplied by the Western Canal Water District or the Richvale Irrigation District. Groundwater may be supplemented as an additional source of irrigation supply water.

-Wastewater effluent from the City of Biggs is discharged into Lateral K year-round.

- Urban runoff from the cities of Biggs and Gridley drains to the Main Drainage Canal

- Storm water is a source of water during winter months.

- Southern portion of the Cherokee Canal receives wetlands/wildlife refuge drainage

II. Inflows and Outflows to Water Bodies

1. Map or schematic showing the key components of the surface water supply and drainage in the water bodies under consideration. The figure should include inflows and outflows to the water bodies and include (*if applicable*) the following:
 - a. Location of surface water supply (intake) points for the water bodies under consideration
 - b. Location of ground water supply points for the water bodies under consideration (This should only include wells which pump directly into canals or drains or wells used to supply water outside the land owners' control)
 - c. Location of operation spills from the water bodies under consideration

Figure 2 shows the major inflows, outflows and hydromodifications in Lateral K, the Main Drainage Canal, and the Cherokee Canal. Note that the case study water bodies may also receive drainage inputs via field pipe spills from adjacent properties. In addition, farmers may pump drainage water out of the water bodies to re-use as Ag supply water during the irrigation season.

Re-use of drainage water is especially prevalent along the Main Drainage Canal where there are a number of dams to hold water for agricultural use. Lateral E, which drains into the Main Drainage Canal, contains urban runoff from the city of Gridley in addition to Ag drainage water. A channel from the Main Drainage Canal runs south prior to the dam at the West Liberty Road to the Grey Lodge Wildlife Area, serving as a potential, but not typical, source of water for the refuge.

Cherokee Canal supplies water for the duck clubs east of Butte Creek at multiple locations prior to its confluence with Butte Creek. Sanborn Slough, which drains into Cherokee Canal, contains a significant portion of Butte Creek's flow and is managed to provide water to the waterfowl habitat.

MUN Beneficial Use Evaluation

I. Municipal and Domestic Supply (MUN) use

- a. List any known State Water Rights information pertaining to the municipal and/or domestic supply use in or downstream of the water bodies under consideration, even if the right has never been exercised (if applicable). *For more information on State Water Rights information and the use of database search and mapping tools, visit the following website:*
http://www.swrcb.ca.gov/waterrights/water_issues/programs/ewrims/

No known State Water Rights records for a MUN use in the immediate water body under consideration or in the downstream water bodies prior to the Sacramento River.

- b. Describe other municipal and/or domestic supply use of the surface water system since November 1975 (if applicable)

No known MUN use since November 1975. The City of Biggs and surrounding vicinities rely on ground water as their municipal source.

- c. Map showing any diversion points in or downstream of the area under consideration where water is used for municipal and/or domestic supply.

NA – no diversions prior to Sacramento River

II. Water Quality Monitoring Program

1. Is the area under consideration covered by water quality monitoring under the Central Valley Irrigated Lands Regulatory Program (ILRP) or any other monitoring program?

Yes, the area falls under the Central Valley Irrigated Lands Regulatory Program.

A significant portion of the area under consideration is covered as part of the California Rice Commission (contact – Tim Johnson).

The area is also covered as part of the Sacramento Valley Coalition (contact – Bruce Houdesheldt).

Information on monitoring sites, results and other information can be found at the following website:

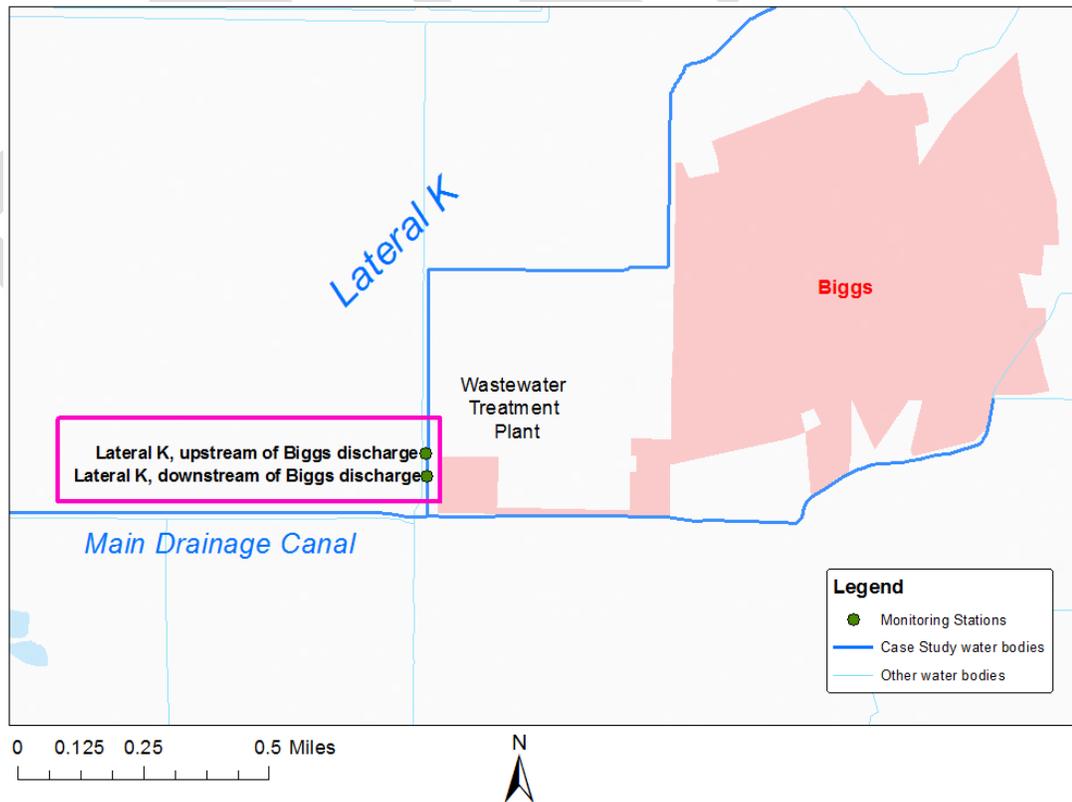
http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/index.shtml

Website links may be provided in lieu of separately answering questions 2-6, if they adequately provide the same information as requested below. If such links are utilized, a Table or Figure reference and page number should be provided if needed. Alternately, information for #2 may be added to the map provided for the water body characterization under A.II.

2. Map showing the location and identifying number of all current and proposed water quality and/or flow monitoring points for all of the following that exist in the area being considered including as applicable:
 - a. Supply water to the area under consideration
 - b. Collected subsurface and surface drainage entering the area under consideration
 - c. Surface water drainage system
 - d. Drains carrying subsurface drainage water or blended water

****The map must show monitoring station(s) that represent discharge of Ag drainage from the area under consideration**

Figure 3 City of Biggs's NPDES Monitoring Locations in the area under consideration



- Summarize in existing report or in an attached EXCEL format: monitoring location and identifying number, parameters measured, frequency, period of anticipated sampling (e.g. 2014-2016, ongoing, etc.) and location of resulting data.

Note – There are no ILRP or Reclamation District 833 sampling sites directly in the water bodies under consideration. For monitoring sites in the area, a full description of the monitoring and reporting plans for the Sacramento Water Quality Coalition, the California Rice Commission, Reclamation District 833 and the City of Biggs (including locations, frequency and sampling periods) can be found in the links provided in answer 4 below.

City of Biggs Wastewater Treatment Plant NPDES Monitoring

City of Biggs Wastewater Treatment Plan NPDES Self-monitoring (Receiving Waters) is conducted at RSW-001 (Lateral K, upstream of effluent discharge) and RSW-002 (Lateral K, downstream of effluent discharge) for the following:

Monitoring Parameter	Minimum Sampling Frequency
pH	1/Week
Turbidity	1/Week
Dissolved Oxygen	1/Month
Electrical Conductivity	1/Month
Hardness	1/Month
Priority Pollutants (RSW-001 only)	4/permit term

- Summary of the available monitoring data including parameters measured, number of analyses , and inclusive dates of sampling

Monitoring and Assessment Reports for the Irrigated Lands Regulatory Program for the California Rice Commission and the Sacramento Valley Water Quality Coalition can be found at:

http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/monitoring_plans_reports_reviews/index.shtml

Monitoring Data collected since 2004 under the Irrigated Lands Regulatory Program can be found at:

http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/water_quality_monitoring/index.shtml

All ILRP data is eventually loaded into the California Environmental Data Exchange Network (www.ceden.org)

The City of Bigg’s NPDES Monitoring and Reporting requirements can be found at:

http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/butte/r5-2012-0083.pdf

The City of Biggs NPDES Self-Monitoring Reports have not been transitioned to the CIWQS database yet. Copies of the reports can be obtained at the [Redding office](#) of the Central Valley Regional Water Quality Control Board at 364 Knollcrest Drive, Suite 205, Redding, CA 96002.

The link for Reclamation District 833's general NPDES permit application, which includes monitoring information is:

http://www.swrcb.ca.gov/water_issues/programs/npdes/pesticides/docs/weedcontrol/2013-0002-dwg/rd833_noi_apap.pdf

5. If the area under consideration is covered by the Irrigated Regulatory Lands Program, list any Management Plans previously developed or currently under development. For areas not covered by the Irrigated Regulatory Lands Program, list any known or suspected water quality concerns (including elevated background concentrations in surface or groundwater supplies).

Sacramento Valley Coalition Management Plan

There are no management plans currently for these Biggs Subarea case study water bodies

Link to website on Management Plans:

http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/management_plans_reviews/coalitions/sacramento_valley_waterquality/index.shtml

California Rice Commission Management Plans:

2010 – Propanil, Algae (for entire region)

Link to website on Management Plans:

http://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/management_plans_reviews/coalitions/california_rice_commission/index.shtml

Works Cited

- Central Valley Water Board. (1992). *Staff Report - Consideration of Water Body Designations to Comply with Provisions of the Water Quality Control Plan for Inland Surface Waters of California (ISWP)*.
- Central Valley Water Board. (2012a). *Staff Survey Write-up for the City of Biggs/MUN Beneficial Use Project, March 21, 2012*. Biggs.
- Central Valley Water Board. (2012b). *Meeting Notes - March 21, 2012 Biggs*. Gridley.
- Central Valley Water Board. (2014a). *Meeting Notes - June 4 2014 Biggs Stakeholders*. Gridley.
- Central Valley Water Board. (2014b). *Meeting Notes - June 16 2014 DWR Division of Flood Management*. Sacramento.
- Department of Water Resources. (2009). *Proposed Mitigated Negative Declaration and Draft Initial Study - Cherokee Canal Corridor Management Strategy Pilot Project: Phase 1 Sediment Removal*. Sacramento.
- U.S. Environmental Protection Agency and the U.S. Geological Survey. (2005). *National Hydrography Dataset Plus - NHDPlus, Edition 1.0*.

Appendix A – Photos of Biggs Subarea Water Bodies

Photo 1. Lateral K upstream of effluent discharge (looking downstream) – April 19, 2012



Photo 2. Main Drainage Canal at dam near West Liberty Road (looking upstream) – April 19, 2012



Photo 3. Cherokee Canal at Colusa Highway (looking downstream) – April 19, 2012



Photo 4. Pump structure on Main Drainage Canal at Colusa Highway – April 16, 2012



Photo 5. Supply Channel spill into Main Drainage Canal downstream of Lateral K confluence (looking downstream) – March 21, 2012



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Appendix B – Flow-related Photos in Biggs Subarea Water Bodies

Photo 1. Low Flow period prior to the irrigation season, Main Drainage Canal at West Liberty Road (looking upstream) - May 10, 2012



Photo 2. High Flow period during irrigation season, Main Drainage Canal at West Liberty Road (looking upstream) – July 12, 2012



Photo 3. Photo 1. High Flow during winter storm season, Main Drainage Canal at West Liberty Road (looking upstream) – December 27, 2012



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Photo 4. Low Flow period prior to irrigation season, Lateral K downstream of effluent discharge (looking upstream) – April 19, 2012



Photo 5. High Flow period during irrigation season, Lateral K downstream of effluent discharge (looking upstream) – July 12, 2012

