

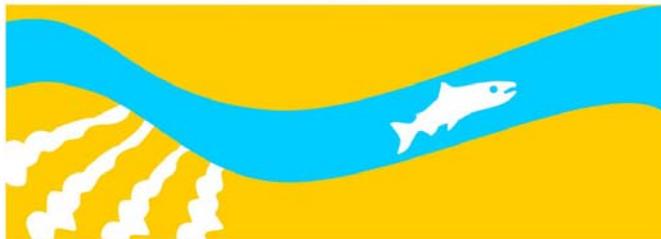
RECLAMATION

Managing Water in the West

Compliance Report

Order WR 2009-0058-DWR

SAN JOAQUIN RIVER
RESTORATION PROGRAM



U.S. Department of the Interior
Bureau of Reclamation

January 2011

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1.0 Introduction

The State Water Resources Control Board issued Order WR-2009-0058-DWR (Order) to the Bureau of Reclamation (Reclamation) on October 1, 2009. The temporary transfer allowed Reclamation to make operational changes at Friant Dam needed to implement the Water Year (WY) 2010 Interim Flows Project.

Condition 17 of the Order required this Compliance Report describing Reclamation's compliance with each condition of the Order. This Report lists each condition, followed by a description of compliance with references to supporting attachments, which applicable. Attachments are provided on a compact disk, included at the back of this report.

2.0 Background

In 1988, a coalition of environmental groups led by the Natural Resources Defense Council (NRDC), filed a lawsuit challenging the renewal of long-term water service contracts between the United States and the Central Valley Project (CVP) Friant Division contractors, *NRDC, et al., v. Kirk Rodgers, et al.*, Case No. CIV S-88-1658 LKK/GGH. On September 13, 2006, after more than 18 years of litigation, NRDC, Friant Water Authority (FWA), and the U.S. Departments of the Interior and Commerce agreed on terms and conditions for a Stipulation of Settlement (Settlement). The Settlement established two goals:

- **Restoration** – To restore and maintain fish populations in “good condition” in the main stem of the San Joaquin River below Friant Dam to the confluence of the Merced River, including naturally reproducing and self-sustaining populations of salmon and other fish.
- **Water Management** – To reduce or avoid adverse water supply impacts on all of the Friant Division long-term contractors that may result from the Interim Flows and Restoration Flows.

The Settlement establishes a framework for accomplishing the Restoration and Water Management goals that will require environmental compliance, design, construction, and monitoring of projects over a multiple-year period. To achieve the Restoration Goal, the Settlement calls for a combination of channel and structural modifications along the San Joaquin River below Friant Dam, releases of water from Friant Dam to the confluence of the Merced River, and reintroduction of Chinook salmon. To achieve the Water Management Goal, the Settlement calls for downstream recapture of Interim and Restoration flows and recirculation of that water to reduce or avoid water supply impacts to the Friant Division long-term contractors resulting from the release of Interim and Restoration flows. In addition, the Settlement establishes a Recovered Water Account and allows for the delivery of surplus water supplies to the Friant Division long-term contractors during wet hydrologic conditions.

The San Joaquin River Restoration Program (SJRRP) is the program established to implement the Settlement. Implementing Agencies responsible for managing and implementing the SJRRP are Reclamation, U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), the California Department of Water Resources (DWR), and California Department of Fish and Game (DFG). The San Joaquin River Restoration Settlement Act, included in Public Law 111-11, the Omnibus Public Lands Management Act of 2009, authorizes and directs the Secretary of the Interior to implement the terms and conditions of the Settlement.

As an initial action to guide implementation, the Settlement requires that Reclamation modify releases from Friant Dam during WY 2010 (from October 1, 2009, to September 30, 2010). This first year of releases allowed for data to be collected to better evaluate flows, temperatures, fish needs, biological effects, and seepage losses, and water recirculation, recapture, and reuse opportunities. WY 2010 Interim Flows were released from Friant Dam for one year (WY 2010) in accordance with the flow schedule in Exhibit B of the Settlement, and in a manner consistent with the Order, and other Federal, State and local laws, and any agreements with downstream agencies, entities, and landowners.

3.0 Compliance with the Order

3.1 General Compliance

NOW, THEREFORE IT IS ORDERED THAT Reclamation's petition for temporary transfer and dedication of water for instream purposes pursuant to Water code sections 1707 and 1725 is approved for a transfer of up to a maximum of 29,000 af from October 1, 2009 through November 20, 2009. Depending upon the forecast 2010 Water Year type, up to a maximum of 355,000 af is approved for transfer from February 1, 2010 through September 30, 2010. Thus, the entire period for the temporary transfer is October 1, 2009 through September 30, 2010 for a total maximum transfer of up to 384,000 af subject to prior vested water rights.

Compliance: WY 2010 was declared as a Normal-Wet year type (1.45-2.5 million acre-feet of unimpaired runoff to Friant Dam). Reclamation released 22,379 acre-feet from October 1, 2009 through November 20, 2009. Reclamation released 239,099 acre-feet from February 1, 2010 through September 30, 2010. For reasons described in Condition 5 below, Reclamation's flow compliance location was Gravelly Ford. Interim Flows totals are based on the Gravelly Ford flow record. Reclamation released Interim Flows consistent with the volume and timing specified in the Order.

3.2 Condition 1

All existing terms and conditions of Permits 11885, 11886, and 11887 remain in effect, except as temporarily amended by the following provisions:

The following points of diversion are temporarily added to permits. All coordinates in this Order are in California Coordinate System of 1983, Zone 3:

- A. Mendota Dam— North 1,745,350 feet and East 6,598,943 feet, being within the SE ¼ of the NE ¼ of Section 19, T13S, R15E, MDB&M.
 - i. Main Canal— North 1,744,396 feet and East 6,598, 937 feet, being within the SE ¼ of Section 19, T13S, R15E, MDB&M.*
 - ii. Outside Canal—North 1,741,896 feet and East 6,599,689 feet, being within the SE ¼ of Section 19, T13S, R15E, MDB&M.*
 - iii. Columbia Canal —North 1,746,420 feet and East 6,605,595 feet, being within the NE ¼ of Section 20, T13S, R15E, MDB&M.*
 - iv. Helm Ditch—North 1,745,022 feet and East 6,598,787 feet, being within NE ¼ of Section 19, T13S, R15E, MDB&M.*
 - v. Firebaugh Water District Canal—North 1,741,821 feet and East 6,599,844 feet, being with SE ¼ of Section 19, T13S, R15E, MDB&M.**
- B. Intake to the Arroyo Canal—North 1,816,307 feet and East 6,561,446, being within SW ¼ of Section 12, T11S, R13E, MDB&M.*
- C. Intake to the Sand Slough Control Structure—North 1,862,535 feet and East 6,535,468 feet, being within NE ¼ of Section 31, T9S, R13E, MDB&M, for conveyance through the East Side Bypass.*
- D. Along the East Side Bypass—North 1,883,703 feet and East 6,523,784 feet, being within NW ¼ of Section 11, T9S, R12E, MDB&M (at Lone Tree Unit, Merced National Wildlife Refuge).*
- E. Intake to the Mariposa Bypass Control Structure, on the East Side Bypass— North 1,895,936 feet and East 6,505,198 feet, being within SE ¼ of Section 30, T8S, R12E, MDB&M.*
- F. Along the East Side Bypass—North 1,914,452 feet and East 6,480,299 feet, being within NE ¼ of Section 8, T8S, R11E, MDB&M.*
- G. Jones Pumping Plant—North 2,114,400 feet and East 6,248,083 feet, being within SW ¼ of Section 31, T1S, R4E, MDB&M.*
- H. Banks Pumping Plant—North 2,115,990 feet and East 6,237,838 feet, being within SW ¼ of Section 35, T1S, R3E, MDB&M.*
- I. San Luis Dam— North 1,844,598 feet and East 6,394,093 feet, being within SW ¼ of SE ¼ of Section 15, T10S, R8E, MDB&M.*

Compliance: Reclamation diverted water released pursuant to the Order only at points of diversion temporarily added to the permits.

3.3 Condition 2

Any San Joaquin River water temporarily stored or routed through San Luis Reservoir shall not be delivered to south-of-Delta contractors other than Friant Division Contractors.

Compliance: No San Joaquin River water released pursuant to the Order was stored or routed through San Luis Reservoir. Water in San Luis Reservoir for recapture was available under other CVP permits.

The WY 2010 Interim Flows Project Environmental Assessment (EA)/Initial Study addressed the recapture (rediversion) of Interim Flows at the locations outlined in Condition 1 above, credit to SJRRP of water exported from the Delta under other Central Valley Project permits and stored in San Luis Reservoir, and recirculation of such water back to Friant Division Contractors. As additional information was known on the amounts recaptured and the recirculation opportunities in 2010, Reclamation completed the *Recirculation of Recaptured Water Year 2010 San Joaquin River Restoration Program Interim Flows Final Environmental Assessment and Finding of No Significant Impact* in July 2010 (Recirculation EA; included as **Attachment 1**). The Proposed Action in the Recirculation EA was recirculation of water exclusively to Friant Division Contractors entirely within the existing place of use and without adding new points of rediversion. The Recirculation EA analyzed up to 60,000 acre-feet of water recaptured and ready for delivery within San Luis Reservoir for recirculation.

Reclamation recaptured a portion of Interim Flows released from Friant Dam during WY 2010 as a result of limited channel capacities downstream of Friant Dam, and in particular, downstream of Mendota Dam. These Interim Flows were recaptured at Mendota Dam (at authorized points of rediversion in Mendota Pool outlined in Condition 1) and used to meet water demands by the San Joaquin River Exchange Contractors (Exchange Contractors) consistent with the Second Amended Contract for Exchange of Waters (Exchange Contract). This recapture reduced the need for Reclamation to deliver the Exchange Contractors' water from the Delta-Mendota Canal (DMC). Water pumped from the Sacramento-San Joaquin Delta (Delta) under other CVP permits was credited by Reclamation as stored water in San Luis Reservoir in the amount of Interim Flows recaptured at the Mendota Pool. Water stored in San Luis Reservoir due to recapture of Interim Flows was allocated exclusively to the Friant Division Contractors. Reclamation assisted in development of transfers for recirculation of water from San Luis Reservoir back to Friant Division long-term contractors. Reclamation allocated 42,274 acre-feet of recaptured water to Friant Division long-term contractors, of which 35,788 acre-feet was used during WY 2010 (refer to **Table 1**). The Friant Division long-term contractors used the remaining 6,486 acre-feet during the beginning months of WY 2011.

**Table 1
2010 Contract Year Recaptured Water Use by Contractor/Service Area - Friant Division**

Friant-Kern SA Contractor	WY 2010							Sep
	Mar	Apr	May	Jun	Jul	Aug		
Arvin-Edison WSD	9,774	0	0	0	0	0	0	4959
Delano-Earlimart ID	2,336	0	0	0	0	0	0	665
Exeter ID	596	0	0	0	0	0	0	596
Fresno ID	2,375		0	0	0	0	0	2375
Ivanhoe ID	0	0	0	0	0	0	0	0
Kaweah-Delta WCD	0	0	0	0	0	0	0	0
Lindmore ID	690	0	0	0	0	0	0	690
Lower Tule River ID	7,537	0	0	0	0	0	7537	0
Porterville ID	941	0	0	0	0	941	0	0
Sauceltio	1,029	0	0	0	0	1029	0	0
Shafter-Wasco ID	1,242	0	0	0	0	0	1242	0
S. San Joaquin MUD	0	0	0	0	0	0	0	0
Tulare ID	4,465	0	0	0	0	0	4465	0

30,985

Madera SA Contractor	WY 2010							Sep
	Mar	Apr	May	Jun	Jul	Aug		
Chowchilla WD	5,017	0	0	0	0	0	5017	0
Madera ID	5,833	0	0	0	0	0	5833	0

10,850

Millerton Lake SA Contractor	WY 2010							Sep
	Mar	Apr	May	Jun	Jul	Aug		
Gravelly Ford WD	439	0	0	0	0	0	439	0

439

Recaptured Water Allocated:

42,274

3.4 Condition 3

The following additional place of use is temporarily added to the permits:

San Joaquin River from Friant Dam to the Sacramento-San Joaquin Delta at Jones and Banks Pumping Plants. This place of use is added for the dedication of instream flows for the purpose of preservation and enhancement of fish and wildlife resources pursuant to Water Code section 1707. The specific locations of these facilities are identified in item (1).

Pursuant to this transfer, water may be temporarily used in Fresno, Madera, Merced, Stanislaus, Contra Costa, Alameda, San Joaquin and Sacramento Counties.

Compliance: Reclamation released water pursuant to the Order within the place of use temporarily added to the permits.

3.5 Condition 4

The following purpose of use is temporarily added to the permits: preservation and enhancement of fish and wildlife.

Compliance: Reclamation released water pursuant to the Order for existing purposes and for the purpose added to the permits.

3.6 Condition 5

The quantities of water released from Friant Dam for this transfer shall be in addition to the quantity of releases otherwise required to maintain the 5 cubic feet per second requirement at Gravelly Ford and that would be sufficient to provide necessary flow in the river reach below Gravelly Ford pursuant to the obligations of the holding contracts executed by Reclamation.

Compliance: Reclamation releases water from Friant Dam to satisfy historically executed holding contracts with water users upstream from Gravelly Ford. The historical 5 cubic feet per second (cfs) flow requirement to the river reach below Gravelly Ford ensures that Reclamation releases enough water from Friant Dam so water is present in the San Joaquin River channel to satisfy historically executed holding contracts. Reclamation released WY 2010 Interim Flows from Friant Dam over and above releases to satisfy holding contracts and meet the 5 cfs requirement below Gravelly Ford (refer to Condition 20 for a discussion of Gravelly Ford flow targets).

Interim Flows are released according to the schedule in Paragraph 15 of the Settlement, which does not require Interim Flow releases in December and January of WY 2010. During January 2010 there were instances of the San Joaquin River becoming dry at the Gravelly Ford stream gauging station. During occasions when 5 cfs did not pass Gravelly Ford, Reclamation did not

harm any holding contract water users nor impede their ability to make necessary riparian diversions.

During WY 2010 the local water users identified no concerns regarding satisfaction of holding contracts. Reclamation complied with Condition 5 as Interim Flows releases did not impede the ability of water users to make diversions in satisfaction of existing holding contracts.

3.7 Condition 6

Addition of Sand Slough Control Structure as a point of rediversion for conveyance through the East Side Bypass and the introduction of flow into the East Side Bypass and Mariposa Bypass, as well as the addition of points of rediversion further downstream, are conditioned upon the following: (a) Execution of any necessary agreement with the Central Valley Flood Protection Board to release transferred water into the East Side Canal, and (b) execution of any necessary agreement with the Lower San Joaquin Levee District for the operation, inspection, and maintenance of flood control facilities.

Compliance: Interim Flows were not conveyed through the East Side Canal during WY 2010. Therefore an agreement with the Central Valley Flood Protection Board for conveyance of Interim Flows through the East Side Canal was not necessary.

Reclamation pursued an agreement with the Lower San Joaquin Levee District (Levee District) for financial assistance for costs incurred by the Levee District resulting from Interim Flows. Reclamation and the Levee District had several meetings and exchanged formal correspondence regarding this agreement (refer to **Attachment 2**). The Levee District chose not to sign the agreement prepared by Reclamation, stating in a March 10, 2010, letter to the Division of Water Rights that “The reason for this lack of an agreement is the refusal of the Bureau of Reclamation either to enter into an agreement with property owners along the Eastside and Mariposa Bypasses or to agree to indemnify the District from liability to those landowners for the passage of water released by this project.” In a response to this letter, the Division of Water Rights stated in a June 3, 2010, letter that “(Condition 6) does not require indemnification for potential liability associated with the interim flows. Reclamation has prepared a financial assistance agreement to address the operations, inspection, and maintenance activities that may be undertaken by the Levee District, and the Levee District has declined to execute the agreement for reasons not directly related to those operations, inspection, and maintenance activities.” Reclamation remains committed to reaching an agreement with the Levee District. **Attachment 2** includes the cover letter and proposed agreement with the Levee District for WY 2010 Interim Flow-related actions.

3.8 Condition 7

Reclamation shall monitor river stage and flow conditions at the following locations during all periods when water released under this order is likely to be flowing at those locations:

- *Below Friant Dam (river mile 267);*

- *At Gravelly Ford (river mile 228);*
- *Below Chowchilla Bifurcation Structure (river mile 216);*
- *Below Sack Dam (river mile 182);*
- *At the head of Reach 4B1 (river mile 168);*
- *Above the Merced River confluence (river mile 118); and*
- *At the head of the Sand Slough Bypass (river mile 182) [sic].*

Monitoring shall be conducted on a daily basis, and Reclamation shall make the information from such monitoring readily available to the public by posting it on a daily basis on a publicly available website whenever the flows at Friant Dam are modified and daily for a period of three days after any modification and on a weekly basis under all other circumstances. Flows shall also be monitored at the Vernalis gaging station, which is operated by the U.S. Geological Survey and Department of Water Resources (DWR), with provisional monitoring data reported on the California Data Exchange Center website at cdec.water.ca.gov on a daily basis. Flows shall also be monitored by Reclamation at the Jones Pumping Plant and the Clifton Court Forebay in coordination with DWR, with provisional monitoring data reported on a daily basis on Reclamation's website.

In the event that flows have the potential to or will exceed channel capacities, Reclamation shall reduce flows to the last known flows that did not result in exceeding such capacities until such time that Reclamation determines that increasing flows would not exceed channel capacities.

Compliance: The flow monitoring locations, California Data Exchange Center (CDEC) location codes, and monitoring information available at each station is summarized in **Table 2**. Reclamation, DWR, and the U.S. Geological Survey (USGS) monitored both river stage and flow below Friant Dam, at Gravelly Ford, below the Chowchilla Bifurcation Structure, below Sack Dam, above the Merced River confluence, at the head of the Sand Slough Bypass, at Vernalis, at the Jones Pumping Plant, and at the Clifton Court Forebay during the WY 2010 Interim Flows. Flow and stage were monitored at the gaging stations in **Table 2** when Interim Flows were present, and posted to CDEC. No monitoring was conducted at the head of Reach 4B1 as no flows entered Reach 4B1. Reclamation will not release flows into Reach 4B1 until channel capacity and seepage concerns are addressed, and will establish a gaging station at the head of Reach 4B1 prior to the release of any Interim Flows into this reach. Quality controlled flow data for the gaging locations between Friant Dam and the Merced River confluence, as well as provisional flow data for Vernalis, Jones Pumping Plant, and Clifton Court are included in **Attachment 3**. Flow data were available on a 15-minute time step for all locations except Jones Pumping Plant and Clifton Court where daily average flows were provided.

Stage and flow monitoring requirements from Condition 7 at river miles 168 and 182 were met through installation of new gaging stations at San Joaquin River near Dos Palos (SDP; considered equivalent to Sack Dam flows) and San Joaquin River near Washington Road (SWA). Measuring stage and calculating flow at these new locations was particularly challenging because stage-flow rating curves could not be developed in advance of the arrival of Interim Flows. As described below, Reclamation managed Interim Flows with the data available.

Table 2.
WY 2010 Interim Flow Monitoring Locations

Flow Monitoring Location	CDEC	Agency	Data Availability
Below Friant Dam (river mile 267)	MIL	Reclamation	WY 2010
At Gravelly Ford (river mile 228)	GRF	Reclamation	WY 2010
Below Chowchilla Bifurcation Structure (river mile 216)	SJB	Reclamation	WY 2010
Below Sack Dam (river mile 182)	SDP	DWR	November 17, 2009 ¹
Above the Merced River confluence (river mile 118)	NEW SMN	USGS	NEW- WY 2010 SMN- March 2, 2010
At the head of the Sand Slough Bypass (river mile 168) ²	SWA	DWR	February 23, 2010 ³
Vernalis	VNS	Reclamation	WY 2010
Jones Pumping Plant	TRP	DWR	WY 2010
Clifton Court Forebay	CLC	DWR	WY 2010

CDEC = California Data Exchange Center

1. Stage data first reported to CDEC. SDP flow data started reporting to CDEC on December 3, 2009. A small amount of Interim Flows reached SDP in November 2009, and spring Interim Flows reach SDP on March 2, 2010.
2. WR-2009-0058-DWR stated that the head of Sand Slough Bypass is located at river mile 182. However, the head of Sand Slough Bypass is adjacent to the head of Reach 4B1 at river mile 168. DWR operates the SWA gage at river mile 168, and the SDP gage at river mile 182.
3. Stage data only was available on CDEC. Manual measurements were posted periodically on www.restoresjr.net. Interim Flows did not reach the SWA gaging station until March 5, 2010.

The Interim Flow releases during fall 2009 (October 1 to November 20) reached just below Sack Dam. Some relatively minor local flows were reported by the below Sack Dam gage (SDP) during January and February 2010, and were not part of the Interim Flows Project. SDP began reporting stage data to CDEC on November 17, 2009, and computing flow data on December 3, 2009. Spring 2010 Interim Flow releases from Friant Dam began on February 1, 2010, and Interim Flows reached the SDP on March 2, 2010.

On March 2, 2010 the USGS began reporting data from a new gaging station on the San Joaquin River above the Merced River confluence near Newman (SMN). Prior to the establishing SMN at River Mile 118 the closest gaging station was at River Mile 117 (San Joaquin River below Merced Confluence near Newman, NEW). Interim Flows were assumed to make the first complete connection with existing flows in Reach 5 on March 15, 2010. The SMN gage began reporting data at River Mile 118 before Interim Flows reach this location.

During winter 2010 DWR began the process of establishing a new gaging station at Washington Road (SWA) near the head of the Sand Slough Bypass. SWA began reporting stage measurements on February 23, 2010, prior to Interim Flows reaching Washington Road on March 5, 2010. DWR used stage measurements and manual flow measurements (refer to **Table 3**) to develop the SWA flow record in **Attachment 3**. The SWA location proved to be problematic; there were several data outages over 24 hours, and up to nearly 3 days, which DWR worked to resolve as quickly as possible. The cross section was also not suitable for development of a reliable rating curve, and the stream gaging equipment was a potential obstruction to the

Levee District's maintenance activities. Following WY 2010 Interim Flows, DWR relocated the SWA gage upstream to a former USGS gaging site, which began reporting stage on October 20, 2010.

**Table 3.
San Joaquin River at Washington Road (SWA) Manual Flow Measurements**

Date	Flow (cfs)
3/08/2010	263
3/09/2010	355
3/09/2010	376
3/16/2010	270
3/19/2010	263
3/22/2010	365
3/26/2010	429
3/29/2010	420
4/8/2010	694
4/14/2010	747
4/14/2010	753
4/21/2010	774
4/26/2010	692
4/26/2010	758
4/30/2010	600
5/04/2010	683
5/07/2010	785
5/07/2010	799
5/14/2010	189
6/21/2010	44
6/28/2010	52
7/06/2010	52
7/28/2010	34
8/12/2010	10
8/25/2010	24

The agricultural lands adjacent to Reach 4A of the San Joaquin River have historically experienced shallow groundwater conditions. The gaging station at Washington Avenue (SWA) provides key information to manage flows in the San Joaquin River to avoid seepage impacts. Reclamation and the local agencies near Reach 4A adapted to use river stage information as an indicator of groundwater elevations. The SWA gage as relocated for WY 2011 is upstream from the Sand Slough Control Structure and measures the Sand Slough Control Structure's backwater effect on stage, a key groundwater management indicator. The lack of flow information at the gage has not impacted Reclamation's ability to monitor and manage Interim Flows. Reclamation

is working with DWR to complete a rating curve for this location and expects to have this available in 2011.

With the exception of the lack of flow data at the head of the Sand Slough Bypass gaging station (SWA), and at the head of Reach 4B1 where no Interim Flows were present, flow and stage were monitored at all of the locations required in this Condition 7 when Interim Flows were present at these locations and posted to CDEC.

Reclamation released WY 2010 Interim Flows within the channel capacity limitations and no flow reductions due to channel capacity limitations occurred. Seepage concerns are addressed in compliance with Condition 8 below.

3.9 Condition 8

Reclamation shall implement a Seepage Monitoring and Management Plan (Plan) consistent with the Plan outlined in the Water Year 2010 Interim Flows Draft Environmental Assessment/Initial Study (WY 2010 Interim Flows Draft FONSI/MND; Reclamation and DWR 2009) and with Public Law 111-11, Section 10004(h)(3). The Plan, with timelines for installation of monitoring equipment, shall include the installation of groundwater monitoring wells on public right of entry at the following river miles: 255.7, 234.2, 223.8, 222.0, 219.8, 218.2, 217.2, 211.8, 173.9, 125.1. The groundwater monitoring network shall account for subsidence in the area when determining differences in groundwater elevations. Groundwater elevation thresholds shall be established to determine when impacts to agricultural lands or levee stability are imminent. Interim flows shall only be released in a manner consistent with the Plan, including the timeline for installation of monitoring equipment.

Compliance: Reclamation installed groundwater monitoring wells on public right of entry at the specified river miles (refer to **Table 4**), and conducted post-installation elevation surveys to connect wells to current benchmarks and account for subsidence. At all points of public right of entry identified in Condition 8, Reclamation installed wells prior to the advance of Interim Flows. Three wells at river mile 234.3 were installed after Interim Flows were present, but Reclamation had already installed four wells at the same location prior to Interim Flows reaching this location. Reclamation installed wells in transects perpendicular to the San Joaquin River to gather information about the groundwater gradient away from the river. Reclamation developed groundwater monitoring action thresholds based on the crop types surrounding the wells and continued to refine the thresholds as new information was gathered. Reclamation's process for establishing thresholds can be found in Appendix D of the WY 2010 Interim Flows Project EA.

Reclamation committed to release Interim Flows in a manner that did not result in seepage causing material adverse impacts to third parties and to respond to complaints of such impacts immediately and comprehensively. Prior to releasing Interim Flows, Reclamation conducted extensive outreach efforts to discuss the upcoming flow releases and monitoring activities with landowners. These outreach efforts included meetings in early- and mid-2009 with landowners and landowner groups, such as the San Joaquin River Resources Management Coalition, to discuss Interim Flows, groundwater well locations, and seepage monitoring. Reclamation sent

direct mailings to landowners to provide a flow schedule and information on the seepage hotline, and executed a financial assistance agreement with San Joaquin River Exchange Contractors Water Authority to coordinate landowner activities.

During Interim Flow releases Reclamation addressed landowner concerns and implemented flow and monitoring activities outlined in the Seepage Monitoring and Management Plan in areas where land access was made available. During WY 2010 Interim Flows the seepage hotline received 13 calls. The calls were typically returned within one day and field evaluations were completed within 2 ½ days of the initial hotline call. Reclamation made data for key groundwater monitoring locations available weekly and for all monitoring wells monthly at www.restoresjr.net. Additionally, Reclamation conducted soil salinity measurements at 85 locations along the San Joaquin River. Landowner outreach continued throughout WY 2010 Interim Flows and included additional mailers to landowners, updated information regarding the seepage hotline, data availability, and updated flow schedules.

Implementation of the Seepage Monitoring and Management Plan included development of a groundwater monitoring network which included 42 wells installed on public lands to form transects at the river miles required by Condition 8. Additional wells were installed on private lands at the request of landowners bringing the total to 98 groundwater monitoring locations. Reclamation also received data from five wells installed by the Central California Irrigation District. Reclamation responded to Seepage Hotline calls with site visits to evaluate conditions in cooperation with affected landowners to avoid and minimize the impacts of Interim Flows.

**Table 4.
2009 Public Right-of-Way Seepage Well Installations**

Well No.	Reach	River Mile	Installation Date	Date Interim Flows reached this location
MW-09-1	1A	255.5	9/26/2009	10/1/2009
MW-09-2	1A	255.5	9/27/2009	10/1/2009
MW-09-21	1B	234.3	10/24/2009	10/3/2009
MW-09-22	1B	234.3	10/22/2009	10/3/2009
MW-09-23	1B	234.3	10/2/2009	10/3/2009
MW-09-23B	1B	234.3	10/21/2009	10/3/2009
MW-09-25	1B	234.3	10/1/2009	10/3/2009
MW-09-26	1B	234.3	9/30/2009	10/3/2009
MW-09-27	1B	234.3	9/29/2009	10/3/2009
MW-09-36	2A	223.8	9/23/2009	10/13/2009
MW-09-37	2A	223.8	9/14/2009	10/13/2009
MW-09-37B	2A	223.8	9/14/2009	10/13/2009
MW-09-39	2A	222.8	9/11/2009	10/16/2009
MW-09-39B	2A	222.8	9/11/2009	10/16/2009
MW-09-41	2A	222.9	8/27/2009	10/16/2009
MW-09-44	2A	219.9	8/20/2009	10/31/2009
MW-09-46	2A	218.1	8/17/2009	11/7/2009

**Table 4.
2009 Public Right-of-Way Seepage Well Installations**

Well No.	Reach	River Mile	Installation Date	Date Interim Flows reached this location
MW-09-47	2A	218.2	9/17/2009	11/8/2009
MW-09-49	2A	217.5	8/4/2009	11/8/2009
MW-09-49B	2A	217.5	8/5/2009	11/8/2009
MW-09-52	2B	211.8	7/16/2009	11/12/2009
MW-09-53	2B	211.8	7/19/2009	11/12/2009
MW-09-54	2B	211.8	7/21/2009	11/12/2009
MW-09-54B	2B	211.8	1/25/2010	11/12/2009
MW-09-55	2B	211.8	8/2/2009	11/12/2009
MW-09-55B	2B	211.8	8/3/2009	11/12/2009
MW-09-56	2B	211.8	8/1/2009	11/12/2009
MW-09-57	2B	211.8	7/30/2009	11/12/2009
MW-09-83	4A	173.9	11/5/2009	3/3/2010
MW-09-83B	4A	173.9	11/5/2009	3/3/2010
MW-09-84	4A	173.9	10/28/2009	3/3/2010
MW-09-85	4A	173.9	10/27/2009	3/3/2010
MW-09-85B	4A	173.9	10/27/2009	3/3/2010
MW-09-86	4A	173.9	11/8/2009	3/3/2010
MW-09-86B	4A	173.9	11/8/2009	3/3/2010
MW-09-87	4A	173.9	11/10/2009	3/3/2010
MW-09-87B	4A	173.9	11/10/2009	3/3/2010
MW-09-88	4A	173.9	11/12/2009	3/3/2010
MW-09-121	5	125.1	11/16/2009	3/15/2010
MW-09-123	5	125.1	11/14/2009	3/15/2010
MW-09-124	5	125.1	11/19/2009	3/15/2010
MW-09-125	5	125.1	11/20/2009	3/15/2010

3.10 Condition 9

When interim flows are greater than 475 cfs in Reaches 2A and 3 of the San Joaquin River, Reclamation shall conduct on a daily basis an evaluation of recent groundwater levels and flow and stage levels in the river channel and post the information on a publicly available website. In the event that groundwater elevations create seepage conditions, Reclamation shall reduce or redirect flows to the last known flow volume that did not result in seepage conditions until such time that Reclamation determines that increasing flows would not create seepage conditions (i.e., seepage is caused by an activity not related to interim flows).

Compliance: When flows exceeded 475 cfs in Reach 2A and 3, Reclamation conducted Daily Seepage Evaluations and made them publicly available on the SJRRP website at www.restoresjr.net (refer to **Attachment 4**). The Daily Seepage Evaluations considered San Joaquin River channel capacity limitations, Mendota Pool operational constraints, real-time and manual groundwater monitoring data, and information from Seepage Hotline Calls to determine if seepage problems were anticipated and if Interim Flows must be reduced to avoid seepage conditions. The Seepage Hotline was a means for landowners to communicate immediate seepage concerns to Reclamation. During WY 2010 Reclamation received 13 Seepage Hotline Calls (refer to **Attachment 5**). Upon receiving a hotline call, Reclamation arranged a site visit with the landowner to assess on-site conditions and inform management decisions.

Daily Seepage Evaluations gathered information forming the basis of Flow Bench Evaluations made by Reclamation prior to any increase in Interim Flow releases at Friant Dam. The Flow Bench Evaluation process used groundwater predictions to determine the maximum allowable groundwater rise without encroachment into buffer zones designed to protect crops from potential groundwater impacts. During WY 2010, groundwater predictions were based on a conservative, one-to-one assumed relationship between river stage and adjacent groundwater elevation. The Flow Bench Evaluations were posted on the SJRRP website at www.restoresjr.net and are included as **Attachment 6**.

Reclamation gained information through the Daily Seepage Evaluation, Flow Bench Evaluation, and Seepage Hotline processes which led to changes in Reclamation's management of WY 2010 Interim Flows. Reclamation determined that the San Joaquin River system to the Merced Confluence requires more than 7 days to equilibrate following a flow change at Friant Dam. In spring 2010 Reclamation began holding flows steady for 14 days to allow surface and groundwater conditions to reach a steady state. Another notable result of these processes was that in response to groundwater data and input from local agencies and landowners in Reach 4A, Reclamation held flows downstream of Sack Dam after June 2010 to 80 cfs to avoid seepage impacts to crops.

3.11 Condition 10

Reclamation shall coordinate its operations with the Central California Irrigation District (CCID) and the San Luis Canal Company (SLCC). When interim flows are or are anticipated to be flowing into Mendota Pool, Reclamation shall communicate with CCID, as the owner/operator of Mendota Dam, at least once daily via telephone, email, or other written communication. This daily communication shall identify, for the following 24 hours: (1) how much water is expected as inflow into the Mendota Pool for purposes of the interim flows; (2) how much water is to be exchanged to satisfy the Exchange Contract at Mendota Pool; and (3) how much water is to be released below Mendota Dam for the interim flows. Reclamation shall communicate with SLCC, as the owner/operator of Sack Dam, at least once daily via telephone, email, or other written communication when interim flows are being released from Mendota Dam. This daily communication shall identify, for the following 24 hours: (1) how much water is expected as inflow into Reach 3 below Mendota Pool for the purposes of the interim flows; (2) how much water is to be exchanged to satisfy water delivery contracts at the Arroyo Canal;

and (3) how much water is to be released below Sack Dam for the interim flows. Reclamation shall also notify facility owners that flows authorized under this order are protected under the California Water code and shall not be diverted or stored unless otherwise authorized by Reclamation consistent with this order.

Compliance: Reclamation conducted daily coordination with the Central California Irrigation District (CCID), the San Luis Canal Company (SLCC), and other agencies when Interim Flows were or were anticipated to be connected to Mendota Pool. Reclamation held an 8:00am conference call every weekday and on weekends, when necessary, to communicate the operational details listed in Condition 10 and allow the operators to express concerns and share information. Following the call, Reclamation emailed the Daily Operations Spreadsheet (refer to **Attachment 7**) to all water agency representatives included in the distribution list in **Table 5**.

**Table 5.
SJRRP Daily Operations Coordination Distribution List**

Agency/ Company	Representative
Central California Irrigation District	Chris White
Columbia Canal Company	Randy Houk
Department of Water Resources	Bill Cook
Lower San Joaquin Levee District	Reggie Hill
San Joaquin River Exchange Contractors Water Authority	Steve Chedester
San Joaquin River Exchange Contractors Water Authority	Larry Freeman
San Luis Canal Company	Chase Hurley
San Luis Delta Mendota Water Authority	Joe Martin
San Luis Delta Mendota Water Authority	Frances Mizuno
San Luis Delta Mendota Water Authority	Dan Nelson
Tranquility Irrigation District	Danny Wade
Bureau of Reclamation	Michelle Banonis
Bureau of Reclamation	John Bohrman
Bureau of Reclamation	Apruba Borah
Bureau of Reclamation	Tony Buelna
Bureau of Reclamation	Doug DeFlicht
Bureau of Reclamation	Alicia Forsythe
Bureau of Reclamation	Paul Fujitani
Bureau of Reclamation	Jeffrey Gallman
Bureau of Reclamation	Katrina Harrison
Bureau of Reclamation	David Mooney
Bureau of Reclamation	Thomas Morstein-Marx
Bureau of Reclamation	Jason Phillips
Bureau of Reclamation	Erin Rice
Bureau of Reclamation	Ed Salazar
Bureau of Reclamation	Stacey Smith
Bureau of Reclamation	Michael Wolfe

The information provided in the Daily Operations Spreadsheet meets the criteria specified in Condition 10, as referenced in **Table 6** below.

Table 6.
Daily Operations Spreadsheet information for Condition 10

Condition 10 Requirement	Daily Operations Spreadsheet Column Title ¹
<i>how much water is expected as inflow into the Mendota Pool for purposes of the interim flows</i>	SJRRP San Mateo
<i>how much water is to be exchanged to satisfy the Exchange Contract at Mendota Pool</i>	San Luis Credit
<i>how much water is to be released below Mendota Dam for the interim flows</i>	Sum of CCID Releases for SJRRP through Gates and CCID Releases for SJRRP over Boards
<i>how much water is expected as inflow into Reach 3 below Mendota Pool for the purposes of the interim flows</i>	Sum of CCID Releases for SJRRP through Gates and CCID Releases for SJRRP over Boards
<i>how much water is to be exchanged to satisfy water delivery contracts at the Arroyo Canal</i>	No exchange of WY 2010 Interim Flows to satisfy water delivery contracts at the Arroyo Canal.
<i>how much water is to be released below Sack Dam for the interim flows</i>	Sack Dam

1. Stream gage and manual measurement flow results corresponded directly to Interim Flows because there were no flood control releases from Friant Dam during WY 2010. In the event of flood control releases, flow records would contain a total of flood flows and Interim Flows.

Reclamation notified facility owners as needed that flows authorized under the Order were protected under California Water Code from rediversion and storage unless authorized by Reclamation consistent with the Order (refer to **Attachment 8**). At a November 6, 2009, meeting CCID, the operator of Mendota Dam, and SLCC, the operator of Sack Dam, each stated that they would allow Interim Flows to pass their facilities.

Reclamation developed draft operations agreements for coordinating operations with CCID and SLCC. Efforts to finalize the Agreements were stalled at indemnification, but Reclamation continued to operate according to the draft agreements.

On November 9, 2009, Reclamation notified Paramount Farming Company (Paramount) that Interim Flows would soon pass the San Mateo Avenue crossing through the San Joaquin River adjacent to Paramount's land, and that flows were protected under California Water Code. Paramount responded on November 10, 2009, that they believed their riparian rights to flows in the river gave them the right to divert Interim Flows. Reclamation responded on December 21, 2009, notifying Paramount that riparian rights only apply to the natural flow in a stream and that Interim Flows are waters appropriated under Reclamation's appropriative water right permits that are stored in Millerton Reservoir. Interim Flows were released for instream purposes and for rediversion at specific points outlined in the Order. Paramount did not divert any protected flows released pursuant to the Order.

Reclamation contacted Lone Tree Mutual Water Company (Lone Tree) regarding an observed diversion near the Sand Slough Control Structure. During a May 11, 2010, phone conversation

Lone Tree identified the diversion as a riparian diversion of inflows from upstream sources. In a May 24, 2010, letter Reclamation asked Lone Tree to provide Reclamation with information as to how natural flow was available to support the diverted quantities. Reclamation notified Lone Tree that Interim Flows were stored under Reclamation's appropriative water rights permits in Millerton Reservoir and were foreign in time. Interim Flows were not abandoned, surplus, natural flows, or flood flows and therefore could not be diverted by holders of riparian rights. Lone Tree responded in a June 9, 2010, letter that inflows from Cottonwood Creek, Little Dry Creek, operational return flows, and local runoff to the San Joaquin River were at the time in excess of Lone Tree's diversions. Lone Tree also stated that they had historically diverted flood flows that were now being released for restoration purposes.

3.12 Condition 11

Nothing in this order authorizes the use of, or access to, private property. In carrying out the activities authorized under this order, Reclamation is responsible for obtaining any approvals that may be necessary to access private property.

Compliance: In order to meet the flow and groundwater monitoring requirements in the Order and to implement other activities related to the WY 2010 Interim Flows Project, Reclamation obtained approvals prior to accessing private property. This included negotiation of a template for Temporary Entry Permit for geotechnical investigations with the San Joaquin River Resources Management Coalition (RMC) in July 2009, a template Seepage Well Agreement for the installation of monitoring wells on private property and the continued monitoring following well installation with the RMC in October 2009, and a template Temporary Entry Permit for comprehensive monitoring activities with the RMC in May 2010. Once these template documents were finalized in coordination with the RMC, Reclamation worked to execute permits and agreements with individual landowners, as needed, to implement the WY 2010 Interim Flows Project. Reclamation and DWR also executed agreements for the installation of stream gages and continued monitoring of these gages on private property.

3.13 Condition 12

This order does not authorize any act that results in damage that could result in imminent failure to: (a) private levees located along the San Joaquin River, (b) to facilities, including levees and related structures, which are part of the San Joaquin River Flood Control Project, or (c) to Mendota Dam. Reclamation shall be responsible for operating under this Order in a way that does not result in such damage.

Compliance: Reclamation did not operate in a way that damaged private levees, the Lower San Joaquin River Flood Control Project, or Mendota Dam. All Seepage Hotline Calls (refer to **Attachment 5**) were investigated to ensure operations were non-damaging.

On May 17, 2010, a landowner adjacent to Mendota Pool called the Seepage Hotline (call #12 of 13 during WY 2010) to report excessive seepage through a Mendota Pool levee onto adjacent lands. During the following site visit Reclamation observed 100-200 gallons per minute of water

from Mendota Pool overtopping a highly vegetated berm and discharging into a drainage ditch which eventually returned the water to the San Joaquin River downstream of Mendota Dam. At that time the elevation of Mendota Pool was at 14.0 feet, which was within its normal operating range. Reclamation determined that the flows were not moving significant quantities of soil or causing impacts to the nearby crops. Reclamation has installed a staff gage at this location to more closely monitor flows.

3.14 Condition 13

Reclamation shall maintain sufficient Millerton Lake storage and available San Joaquin River channel capacity in order to make releases of available storage from Millerton Lake as required under the terms and conditions of the San Joaquin River Exchange Contract, IIR-1144, as amended February 14, 1968, to the extent such releases would be made in the absence of transfer.

Compliance: Reclamation managed Millerton Lake capacity and San Joaquin River channel capacity such that releases for Interim Flows would not have prevented releases in satisfaction of the Exchange Contract in the absence of transfer. Deliveries for the Exchange Contract from Millerton Lake through the San Joaquin River were not necessary as Reclamation fulfilled its obligations under the Exchange Contract during WY 2010 through recaptured SJRRP flows at Mendota Pool, Mendota Pool pump-in, and substitute water deliveries from the Delta via the DMC.

Below average north of Delta CVP storage and the potential for Delta pumping restrictions prompted concerns that Reclamation would not be able to meet the terms of the Exchange Contract solely through DMC deliveries during WY 2010. Condition 13 ensured that Interim Flows would not harm the Exchange Contractors should Reclamation need to make water deliveries from Millerton Lake.

WY 2010 was a Normal-Wet Restoration Year type (1.45-2.5 million acre-feet of unimpaired inflow to Friant Dam). Reclamation issued CVP water supply forecasts approximately monthly from February through May 2010 (refer to **Attachment 13**). At no time during WY 2010 did Reclamation operate in a way that put at risk potential water deliveries from Millerton Lake to the Exchange Contractors. WY 2010 water supply was sufficient such that it was unnecessary for Reclamation to call on Millerton Lake to make deliveries to the Exchange Contractors.

3.15 Condition 14

This order shall not be construed as modifying or amending (1) the rights and obligations of Reclamation and the Exchange Contractors under the Second Amended Contract for Exchange of Waters, Contract IIR-1144, dated February 14, 1968, or (2) the requirements of section 10004(g) and 10004(j) of Public Law 111-11.

Compliance: Reclamation did not construe the Order as modifying the Exchange Contract and Reclamation continued to meet the terms of the Exchange Contract during WY 2010.

3.16 Condition 15

Rediversion and conveyance of water under Permits 11885, 11886, and 11887 by or through Central Valley Project (CVP) or State Water Project (SWP) facilities is limited to pumping and conveyance that is available at the C.W. Jones Pumping Plant, at the Harvey O. Banks Pumping Plant, in the Delta-Mendota Canal or in the California Aqueduct, after satisfying all statutory and contractual obligations to CVP contractors entitled to SWP water from Delta Facilities and that existed prior to the date of change order, including but not limited to: (1) obligations related to Level 2 and Level 4 refuge water supplies; (2) obligations under existing or future water service, exchange, or other settlement contracts; (3) all obligations involving or intended to benefit CVP and/or SWP contractors served water through Delta Division facilities, including the Environmental Water Account, Yuba Accord, or similar programs; (4) obligations under existing or future long-term water supply contracts involving SWP contractors served SWP water through Delta Division facilities; and (5) all water delivery obligations established by the SWP Water Supply Contracts, including, but not limited to, the categories of deliveries set forth in Article 12(f) of such contracts.

Compliance: No water was rediverted at C.W. “Bill” Jones Pumping Plant (Jones Pumping Plant) or Harvey O. Banks Pumping Plant (Banks Pumping Plant) pursuant to the Order.

3.17 Condition 16

Rediversion of water at the Jones Pumping Plant and the Banks Pumping Plant pursuant to this order is subject to compliance by the operators with the objectives currently required of Reclamation or DWR set forth in Tables 1, 2, and 3 on pages 181 to 187 of State Water Board Revised Decision 1641 (D-1641), or any future State Water Board order to decision implementing Bay-Delta water quality objectives at those plants, including compliance with the various plans required under D-1641 as prerequisites for the use of the Joint Points of Diversion by Reclamation and DWR. Rediversion of water at the Jones Pumping Plant and the Banks Pumping Plant pursuant to this order is also subject to compliance by the operators with all applicable biological opinions and any court orders applicable to these operations.

Compliance: No Interim Flows water was rediverted at Jones or Banks pumping plants pursuant to the Order.

3.18 Condition 17

By January 15, 2011, Reclamation shall provide to the Deputy Director for Water Rights a compliance report describing compliance with the requirements of this order. This report shall include the following information:

- a. *The average daily rates of rediversion of water pursuant to the order at both the Clifton Court Forebay and the Jones Pumping Plant,*
- b. *The daily and monthly volumes of water rediverted at both the Clifton Court Forebay and the Jones Pumping Plant,*
- c. *Daily releases from Friant Dam,*
- d. *Daily rediversions at all authorized points of rediversion, and*
- e. *Compliance with all other conditions of this order.*

Compliance: This report is the report required under this condition. Compliance with the subsections of this condition is described below.

- a. Interim Flows made it to the Delta. However, when these flows were in the Delta, pumping restrictions, biological requirements, and other CVP obligations precluded Reclamation from being able to redivert Interim Flows at the Clifton Court Forebay or at Jones Pumping Plant. No water was rediverted at Clifton Court Forebay or at Jones Pumping Plant pursuant to the Order.
- b. No water was rediverted at Clifton Court Forebay or at Jones Pumping Plant pursuant to the Order.
- c. Daily Interim Flows releases from Friant Dam are provided in **Attachment 3**.
- d. Daily rediversions at authorized points of rediversion in Condition 1 are included in the flow records in **Attachment 3** and the Daily Operations Spreadsheet provided in **Attachment 7**. **Table 7** provides a summary of where to find this information in the Daily Operations Spreadsheet.
- e. Compliance with all other conditions of the Order is described in this report.

Table 7.
Summary of Daily Rediversion Information in the Daily Operations Spreadsheet

Point of Rediversion	Daily Operations Spreadsheet Location
A. Mendota Dam i. Main Canal ii. Outside Canal iii. Columbia Canal iv. Helm Ditch v. Firebaugh Water District Canal	San Luis Credit Rediversions of water released pursuant to the Order at points i-v from the Mendota Pool were reported during Daily Operations Coordination (see Attachment 7).
B. Arroyo Canal	No Interim Flows were rediverted at the Arroyo Canal during WY 2010.
C. Sand Slough Control Structure	Rediversion of Interim Flows from the San Joaquin River into the Sand Slough Bypass was assumed to be equal to flow at the San Joaquin River near Dos Palos (SDP) gage (see Attachment 3).

Table 7.
Summary of Daily Rediversion Information in the Daily Operations Spreadsheet

Point of Rediversion	Daily Operations Spreadsheet Location
D. East Side Bypass (at Lone Tree Unit, Merced National Wildlife Refuge)	No rediversion at this location.
E. Mariposa Bypass Control Structure	No rediversion at this location.
F. Along the East Side Bypass	No rediversion at this location.
G. Jones Pumping Plant	No water was rediverted at the Jones Pumping Plant pursuant to the Order.
H. Banks Pumping Plant	No water was rediverted at the Banks Pumping Plant pursuant to the Order.
I. San Luis Dam	No Interim Flows were rediverted at San Luis Reservoir. San Luis Reservoir water received in exchange for recaptured Interim Flows at Mendota Pool was recirculated to Friant long-term contractors under other CVP permits.

3.19 Condition 18

This order does not authorize any act that results in taking of a threatened or endangered species, or any act that is now prohibited, or becomes prohibited in the future, under the federal Endangered Species Act (16 U.S.C.A. sections 1531 and 1544). If a “take” will result from any act authorized under this Order, Reclamation shall obtain authorization for an incidental take permit prior to construction or operation. Reclamation shall be responsible for meeting all requirements of the Endangered Species Act for the temporary change authorized under this order.

Compliance: Reclamation prepared the WY 2010 Interim Flows Project Biological Assessment (BA) in compliance with Section 7 of the Endangered Species Act. The BA was sent to USFWS and NMFS on May 22, 2009 to initiate consultation. USFWS responded on July 15, 2009 to inform Reclamation that blunt-nosed leopard lizard (BNLL) survey reports would have to be submitted for USFWS to have sufficient information to make a decision regarding concurrence on any effects to BNLL. Following review of BNLL survey results, USFWS sent a second, final concurrence letter on September 24, 2009. NMFS responded to Reclamation’s May 22, 2009 letter on June 30, 2009 requesting additional information deemed necessary to determine the level of effect from the Proposed Action on listed fish and their habitats. Reclamation responded to the request for additional information, and on September 23, 2009, NMFS concurred that the WY 2010 Interim Flows Project was not likely to adversely affect listed fish species and their habitats. These letters concluded consultation under Section 7 of the Endangered Species Act and the Magnusen-Stevens Fishery Conservation and Management Act. The BA, BA transmittal letters, and USFWS and NMFS concurrence letters are included in **Attachment 9. Table 8** summarizes compliance actions taken to fulfill requirements in the concurrence letters.

Reclamation met requests for agency consultation by conducting weekly Streamflow and Water Quality coordination calls during Interim Flows releases. The notes from these calls are included

in **Attachment 10**. Reclamation has met all requirements of the Endangered Species Act for the temporary change authorized under the Order.

Table 8.
Summary of the Requirements in the USFWS and NMFS Concurrence Letters and Associated Compliance Actions Taken

Summary of Requirements in the Concurrence Letters	Associated Compliance Actions Taken
Coordination with NMFS to ensure that effects on listed species will be minimized when Interim Flows are going past the confluence of the Merced River	This coordination was completed through weekly Streamflow and Water Quality conference calls. The summary notes from these calls are provided in Attachment 10 .
Modify releases in coordination with NMFS as needed to ensure that impacts are not greater than anticipated in the BA	No concerns related to impacts to listed species being greater than were anticipated in the BA were identified by NMFS during the Streamflow and Water Quality conference calls and thus, no flow changes were needed.
Fulfill project monitoring and salvage component by redirecting Central Valley steelhead that move into the Restoration Area	No Central Valley steelhead were identified in the Restoration Area, and thus, none were salvaged.
Be aware of any change in status of species outlined in the USFWS concurrence letter	There were no changes in the status of the species outlined in the USFWS concurrence letter during the WY 2010 Interim Flows.
Submit survey reports for blunt-nosed leopard lizard to USFWS	Reclamation transmitted blunt-nosed leopard lizard field survey reports to USFWS during 2010.
Discontinue any implementation of activities that cause "take" of a federally listed species and notify USFWS immediately	Reclamation coordinated with the USFWS and the other Implementing and regulatory agencies on the weekly Streamflow and Water Quality conference call. No activities were identified that would cause "take" of a federally listed species on these calls or during Reclamation's implementation of the WY 2010 Interim Flows Project. No modifications were required to avoid species "take" under ESA.

3.20 Condition 19

The State Water Board reserves jurisdiction to supervise the temporary urgency [sic] change under this Order, and to coordinate or modify terms and conditions, for the protection of vested rights, fish, wildlife, instream beneficial uses as future conditions may warrant or as appropriate to respond to information provided by the monitoring programs required under this order.

Compliance: The State Water Board did not make modifications to the terms and conditions of the Order and maintained supervisory jurisdiction.

3.21 Condition 20

Reclamation shall comply with the attached flow schedule.

Compliance: Friant Dam is Reclamation’s point of control for making operational changes to the San Joaquin River. Flow changes at Friant Dam are not reflected instantaneously at downstream locations. Travel time from Friant Dam depends on location and varies for different flow rates.

Reclamation released water from Friant Dam for both Interim Flows and holding contracts upstream of Gravelly Ford. Reclamation has historically met a 5 cfs flow requirement past Gravelly Ford with Friant Dam releases, and during Interim Flows compliance with the Settlement is also determined at Gravelly Ford. Between Friant Dam and Gravelly Ford, uncertainties for Reclamation include riparian diversions, seepage losses, local inflows, and other factors. These uncertainties as well as accuracy limitations inherent to available flow measurement methods make achieving Gravelly Ford targets with Friant Dam releases a considerable challenge.

The purpose of Interim Flows is to provide an opportunity to collect information needed to develop the scientific basis for operating Friant Dam in support of SJRRP. The WY 2010 Interim Flows did at times exceed the estimated maximums in the Order, but flow schedules were based on previously untested assumptions. Reclamation was able to collect data and gain experience to refine these assumptions and inform management of Friant Dam operations. **Table 8** includes monthly explanations when flows exceeded the estimated maximums in Table 4 of the Order.

**Table 8.
Friant Dam Operations and San Joaquin River Conditions When Flows Exceeded
Estimated Maximums in Table 4 of the Order**

WY 2010	Friant Dam Operations and San Joaquin River Conditions
October	Friant Dam release exceeded 350 cfs on 9 days, but by a maximum of 2 cfs. This value is exceeded by accuracy limitations of available flow measurements methods.
November	<p>The flow change from 700 cfs to 350 cfs was made the morning of the 11th, resulting in a daily average of 499 cfs. Flows exceeded the estimated maximum on the 10th, and 15th-19th by values within the measurement accuracy limitations. The flow change from 350 cfs to 120 cfs was made the morning of the 21st, resulting in a daily average of 216 cfs.</p> <p>Flows exceeded the following estimated maximums as Interim Flows released from Friant Dam gradually routed through the San Joaquin River system:</p> <ul style="list-style-type: none"> • Gravelly Ford (235 cfs max), 11th-15th • Gravelly Ford (5 cfs max), 21st-30th • Bifurcation (155 cfs max), 11th-14th • Bifurcation (0 cfs max), 21st-25th
December	No Interim Flows were released. Friant Dam releases in excess of estimated maximums were within measurement accuracy limitations. Flows exceeding maximums at Gravelly Ford and the Bifurcation resulted from lower than expected riparian diversions and/or local inflows.
January	Refer to December comments above.
February	On the 11 th Reclamation ramped the Friant Dam release from 350-400 cfs because 350 cfs release was insufficient to achieve the 255 cfs Gravelly Ford flow target specified in the Settlement. Gravelly Ford flows exceeded 255 cfs from the 25 th -28 th due to a large storm which resulted in local inflows

WY 2010	Friant Dam Operations and San Joaquin River Conditions
	from Cottonwood Creek and Little Dry Creek.
March	Estimated maximums were exceeded at Gravelly Ford and the Bifurcation from the 1 st -15 th due to significant local inflows from Cottonwood Creek and Little Dry Creek. Friant releases were within measurement accuracy limitations. Reclamation began ramping the Friant release from 500-1500 cfs more slowly than expected (over the course of several weeks) to facilitate monitoring activities and management of seepage conditions.
April	No flows exceeding estimated maximums.
May	Flows exceed estimated maximum at Gravelly Ford on the 5 th due to local inflows .
June	No flows exceeding estimated maximums.
July	Friant releases were within measurement accuracy limitations. Flows in excess of estimated maximums at Gravelly Ford and the Bifurcation for the majority of the month resulted from lower than anticipated riparian diversions.
August	Refer to July comments above.
September	Refer to July comments above.

Reclamation complied with the flow schedule included as **Table 4** of the Order subject to existing operational constraints and river conditions described above. Daily flows at specified locations are included in **Attachment 3**.

3.22 Condition 21

Reclamation and the Department of Water Resources shall monitor red sesbania, salt cedar, giant reed, Chinese tallow, and sponge plant along affected portions of the San Joaquin River and bypass system (before and after WY 2010 interim flows) and control and manage these species as specified in the Invasive Species Monitoring and Management Plan, included in Appendix F of the Environmental Assessment and Fining of No Significant Impact/Initial Study and Mitigated Negative Declaration.

Compliance: Reclamation conducted vegetation monitoring during the summer of 2008. Mapped results of these surveys are on the DFG website at www.dfg.ca.gov/biogeodata/gis/imaps.asp, and a summary map has been included in **Attachment 11**.

During spring 2010, Reclamation acquired multiple sets of aerial imagery of the project area. These aerials will help focus future vegetation monitoring and management efforts. Reclamation is preparing to conduct monitoring and management of the required species during summer 2011.

3.23 Condition 22

Reclamation shall conduct baseline information to evaluate potential impacts to Mendota National Wildlife Refuge and other resource associated with the temporary transfer. For

this effort, Reclamation shall collect sediment and water quality information at the locations and for the parameters specified in Table 1. Samples shall be collected at least one week before interim flows reach the respective monitoring station to capture baseline data. If sediment sample concentrations are below criteria identified by the Deputy Director for Water Rights, then no additional sediment, organo-chlorine or pyrethroid sampling shall be required during the fall 2009 interim flow. If samples exceed the proposed criteria, Reclamation shall continue all sampling specified in Table 2 developed by the Central Valley Regional Water Quality Control Board (Central Valley Water Board) and Reclamation. Approximately one week after interim flows reach the respective monitoring station, water samples shall be collected at each location and analyzed for organic and inorganic water quality parameters as specified in Table 2. Reclamation shall compile real-time data from sites listed in Table 3 to monitor flow and physical parameters during the study period.

By January 1, 2010, Reclamation shall develop a monitoring plan, acceptable to the Deputy Director for Water Rights, for the releases beginning after February 1, 2010. Prior to submitting the plan to the Division of Water Rights, Reclamation shall obtain the written comments of the Central Valley Water Board, U.S. Fish and Wildlife Service, and the California Department of Fish and Game. The plan is subject to review, modification and approval by the Deputy Director for Water Rights.

Until approval of a final monitoring plan, samples collected as part of this project must include field duplicates at a rate of 5% of the total project sample count at sites that includes all parameters to be analyzed. Additional quality assurance samples may be required by specific analytical methods.

Results from all water quality monitoring must be submitted to the Central Valley Water Board and Division of Water Rights within two months of data collection. Results shall include: laboratory name where results were analyzed, analytical result, analytical method, field duplicate results, and laboratory quality control, including laboratory blanks, reference material, matrix spikes, and laboratory duplicates.

At a minimum, analyses for each parameter group will include the following:

- *TSS= total suspended solids*
- *Nutrients: TN, NH₄, NO₂, NO₃, TKN, TP, PO₄, chlorophyll*
- *TOC/DOC: total and dissolved organic carbon*
- *Bacteria: Fecal coliform and E. coli*
- *Trace Elements/minerals: cations (Ca, Mg, K, Na); anions (Cl, CO₄, HCO₃); total TE (copper, chromium, lead, nickel, zinc, arsenic, mercury)*
- *Pesticides: water column pre-release scans (carbamates and organophosphates); post-release scans (carbamates, organophosphates, and dependent on sediment results addition of organochlorines and pyrethroids)*
- *Bed Sediment: TOC, Trace elements (copper, chromium, lead, nickel, zinc, arsenic, mercury) organochlorine scan, pyrethroid scan, toxicity*

Compliance: Reclamation held weekly Streamflow and Water Quality conference calls whenever Interim Flows were released from Friant Dam. The calls were attended by representatives from the SJRRP Implementing Agencies and agencies with regulatory authority over the WY 2010 Interim Flows Project. Reclamation and DWR provided updates regarding flow releases, monitoring, environmental documentation, and potential regulatory concerns to the other agencies.

During fall 2009, Reclamation collected sediment and water quality baseline samples within one week of Interim Flows reaching the monitoring locations and parameters listed in Table 1 of the Order. None of the samples exceeded the criteria identified by the Deputy Director of Water Rights.

Reclamation submitted the first set of water and sediment quality results to the Central Valley Regional Water Quality Control Board (Regional Board) and Division of Water Rights on January 22, 2010. Reclamation sought to distribute results through the Streamflow and Water Quality group as quickly as completion of laboratory analysis would allow.

Real-time water quality data for the locations and parameters required in Table 3 of the Order were made available continuously on the CDEC website at www.cdec.water.ca.gov. Links to these CDEC stations were provided on Reclamation's website at www.restoresjr.net.

A group of representatives from Reclamation, USFWS, DWR, DFG, and the California EPA coordinated through the Streamflow and Water Quality group met in Fresno on December 2, 2009 to start development of the 2009-2013 Water Quality Plan (Plan). The agencies provided input to Reclamation in meetings as the Plan was developed and Reclamation received comments on the Plan from the Regional Board, USFWS, and DFG. The comments were incorporated into the final version of the Plan.

On December 24, 2009, Reclamation requested an extension for submittal of the Plan, which the Division of Water Rights granted. On January 11, 2010, Reclamation submitted the Plan to the Division of Water Rights. On January 26, 2010, the Regional Board identified some outstanding concerns that had not been addressed from prior comments. Reclamation worked with the Regional Board to address these concerns. Reclamation has continued to submit monitoring data to the Regional Board and Division of Water Rights.

The Streamflow and Water Quality conference call notes are included in **Attachment 10**. **Attachment 12** includes the formal correspondence and agency comments related to Reclamation's compliance with Condition 22. Reclamation submitted water quality data prior under separate cover.