COMMENT LETTER

Felix E. Smith
(FS)

March 16, 2009

Joseph C. McGahan
Drainage Coordinator
San Luis & Delta-Mendota Authority
P.O. Box 2157, Los Banos, CA 93635

FAX 1-209-826-9698
E-mail <jmcgahan@summereng.com

Ms. Judi Tapia
Bureau of Reclamation
South-Central California Area Office
1243 N. Street
Fresno, CA 93721

FAX 1-559-487-5397
E-mail <jtapia@mp.usbr.gov

Subject: Draft Environmental Impact Statement / Environmental Impact Report for Continuation of the Grassland Bypass Project, 2010 –2019, SCH# 2007121110. Noticed by letter of December 19, 2008 to the State Clearinghouse, agencies and interested parties.

Attached are my comments on the Draft Environmental Impact Statement / Environmental Impact Report for the Continuation of the Grassland Bypass Project, 2010 –2019. The Draft EIS / EIR addresses the potential environmental effects / impacts that would result from implementing a new Use Agreement for the Grassland Bypass Project (GBP) for the period 2010 to 2019.

Use of the Drain allows the separation of drainage water from the supplies to Nation Wildlife Refuges, State wildlife management areas and private wetlands. An agreement allows the Drainers to continue to irrigate about 97,000 areas of uplands. The associated salt and selenium-contaminated drainage would be conveyed to the San Luis Drain from where the drainage would flow north and discharged to Mud Slough, then flow to the San Joaquin River and on to the Sacramento- San Joaquin Delta.

Please include these comments in to the record of the subject project / activity.

Sincerely,

Felix E. Smith
4720 Talus Way
Carmichael, CA 95608
916-966-2081
cc: interested parties.

Comments of Felix E. Smith on the Draft Environmental Impact Statement / Environmental Impact Report for the Continuation of the Grassland Bypass Project, 2010 –2019, SCH# 2007121110. Noticed by letter of December 19, 2008 to the State Clearinghouse, agencies and interested parties.

The Draft EIS / EIR addresses the potential environmental effects / impacts that would result from implementing a new Use Agreement for the Grassland Bypass Project (GBP) for the period 2010 to 2019.

The purpose and objectives of the project are:

1. To allow the use of the Drain by the Grassland Drainers so they can continue to farming about 97,400 acres plus an adjacent 1,100 acres and have more time to develop a water treatment technology or obtain a federal buy out.
2. Continue to use the Drain to separate unusable selenium contaminated drainage from the water being supplied to National Wildlife Refuges and State Wildlife Management Areas and private wetlands of the Grassland Water District.
3. To facilitate drainage management to improve the water quality of the San Joaquin River.

This agreement allows the irrigation of uplands and the continued disposal of selenium contaminated drainage in the San Luis Drain, a Central Valley Project facility. This drainage would then flow north and discharged into Mud Slough where it will then flow to the San Joaquin River and on to the Sacramento- San Joaquin Delta.

The subject analysis is focused on what is called the “zone of primary influence”. This primary zone includes Mud Slough north to the San Joaquin River and then to Crows Landing for the selenium drainage water impacts. The socioeconomic analysis includes Fresno, Madera and Merced Counties.

The focus of the biological impacts and the socioeconomic analysis is too narrow. The water that becomes “Drainage” has biological and water quality impacts that occur far from the “zone of primary influence” of Fresno, Madera, and Merced Counties. Resource and socioeconomic impacts extend over hundreds of miles and impact many resources, uses and environmental values protected by the public trust.

One can follow the water from its watershed of origin to its place of use. Some of the water delivered to the San Luis Unit originates in the Trinity County (Trinity River watershed, Trinity Dam and Clair Engle Lake). It then flows to and through Whiskytown Lake and then to the Sacramento River and to the Sacramento / San Joaquin Delta Estuary. This water is then pumped out of the Delta. It then travels many miles in a canal, is delivered to lands of the San Luis Unit on the west side of the San Joaquin Valley. A portion of the water applied to the land becomes agricultural runoff and drainage contaminated with selenium and salts. This selenium-laced drainage

FS-1

manifests itself in a contaminated aquatic ecosystem and food chain for both fish and wildlife of the San Joaquin River and Delta as well as contaminating the ground water of the area. (See Presser and Luoma –2006.) Because of the integrated operations of the Central Valley Project, one can trace water delivered to the San Luis Unit not only Trinity County and Trinity River, but to Shasta Dam -Sacramento River watershed and Folsom Dam and American River watershed.

The selenium and contaminated drainage impacts at both the local and watershed level, requires considering the unique characteristics of the water's area of origin, the route of this to the service area and associated resources, uses and values in route. The watersheds of origin include those of the Trinity, Sacramento and American Rivers. Such watersheds are habitat for a multitude of wildlife species including threatened and endangered birds, mammals, fish, plants and other wildlife. In the Trinity River watershed, Clair Engle Lake (Trinity Reservoir) severely impacted resident and migratory deer herds. The CVP reservoir operations have impacted and continue to impact such unique species such as steelhead, spring and winter-run Chinook salmon and silver salmon. FS-1

In the Delta, the Delta smelt is listed as threatened under the Federal Endangered Species Act, the Green sturgeon is listed as threatened and the Sacramento Splittail is a species of concern. The Longfin smelt was recently listed as threatened while the Delta smelt as endangered under the California Endangered Species Act. The Delta smelt and the longfin smelt are lived and are impacted by reduction of outflows, export pumping as well as poor water quality. The Green sturgeon and the Sacramento Splittail are relatively long lived. Because of this and the assumption that sturgeon are as sensitive to selenium as aquatic birds and other fish, it is highly probable that this species are reproductively impaired due to selenium uptake via their diet. This is amplified by their long life and because a portion of the population spawn and rear in the Delta leaves them exposed to selenium, heavy metals and pesticides. Splittail are also likely to be vulnerable to selenium contamination because of their bottom feeding habits and the bioaccumulation of selenium food sources, i.e. Asian clams and mollusks (U.S. Fish and Wildlife Service –1995, Beckon and Maurer, March –2008.) FS-2

Within the San Luis Unit impacts to natural resources, associated uses and values can be tied to unwise land use practices. Impacts to water quality occur from agricultural runoff and drainage carrying various salts and trace elements (selenium, boron, etc.) that are and will continue to impact down slope surface and ground water resources and aquatic ecosystems. Impacts to water quality also occur from the use of agricultural chemicals. Impacts to trust resources, uses and values, such as fish and wildlife and associated terrestrial and aquatic ecosystems; impacts to scenic and line of sight, to ecosystems, to water quality impacting the use of water, the limitation on recreational uses, health warnings or other restrictions on eating sport caught fish and wildfowl all must be considered as important public values.

It is recognized that a forest fire destroys other societal values than just trees (i.e. watershed, fish and wildlife habitat, water quality and recreational values, etc.)

However such values are usually not captured in any socio-economic analysis of losses. In the same sense selenium-contaminated drainage can damage or destroy a multitude of resources, uses, unique resource, ecosystems and societal values that are not fully appreciated in the commodity / market place, nor are captured in the socio-economic analysis for this project. The associated societal and public trust values lost or foregone as a result of this project and related activity must be considered and included in any socioeconomic analysis (Smith-1996.)

The State Water Resources Control Board (State Water Board), in 1984 stated, "Failure to take appropriate measures to minimize excess application, excess incidental losses, or degradation of water quality constitutes unreasonable use of water." In 1985 the State Water Board found that agricultural drainage and wastewater reaching Kesterson Reservoir resulted in dead and deformed hatchlings of migratory birds. The State Water Board then stated that the agricultural pollution "is creating and threatening to create conditions of pollution and nuisance" at Kesterson. The State Water Board warned if Kesterson like situations continue to occur, irrigating saline seleniferous soils could constitute an unreasonable use of water. The State Water Board, both staff and Board members, realized the potential damage selenium contamination could do to surface and ground water and especially aquatic ecosystems. The noted scientist, Dr. Joel Hedgpeth stated to me, "That selenium could kill the Valley". FS-2

Selenium in the aquatic environment

Studies by the State Water Board and others have demonstrated that considerable agricultural drainage and wastewater has entered and continues to enter San Joaquin Valley groundwater and surface waters. Salt Slough and Mud Slough (north) are the major carriers agriculturally polluted drainage, wastewater and spillage water to the San Joaquin River. These Sloughs accounted for 57% of the salt load, 71% of the boron load and 86% of the selenium load per year to the San Joaquin River during water years 1993 and 1994. During the years 1987 –1992 a drought period, selenium loading to Mud Slough and the San Joaquin River decreased from the 1986 peak of 14, 601 pounds as measured at Vernalis. With near full irrigation and a return to normal rainfall, selenium loading from the Drainage Project Area increased to 11,875 pounds with a peak load at Vernalis measured at 17,238 pounds. While there has been a decrease in selenium loading there still are 1,000's of pounds of organically active selenium being added to the San Joaquin River and Delta ecosystem each year. (See CRWQCB – CVR, 1998 and 1999 Water Quality Monitoring, and Crader –2003, CRWQCB-CVR. Also see Beckon, et. al.-2008.) Selenium loading tends to be lowest fall through mid winter with the highest selenium loading during March through May, starting with pre-irrigation and lasts through the summer. A drought period usually results in lower selenium loading. Rains add to the drainage amounts. Spring and summer are biologically active months for selenium uptake although it occurs throughout the year. FS-3

During water years 1993 and 1994 the mean monthly selenium concentration of 5 ppb (Federal EPA Standard) in the San Joaquin River was violated 21 of the 24 months of record or 87% of the time (CRWQCB-CVR, January 1995.) Grader –2003, reports that

selenium concentrations regularly exceed the 5 ug/L in the reach of Mud Slough (north) downstream of the Drain outfall.

In 1997 follow-up studies of selenium in fish tissues from the Greater Grassland Area were conducted by the USGS. The highest concentrations of selenium in green sunfish and bluegill sampled were found in the San Luis Drain (in green sunfish 12-23 ppm Se) where seleniferous drainage is most concentrated. The second highest was in North Mud Slough at Highway 140, (Se in green sunfish was 7.6 to 17 ppm, while bluegill was 14 to 18 ppm). This site is, downstream of the San Luis Drain outfall. An unexpected findings was the relatively high body burdens of selenium found in fish from South Mud Slough (in bluegill 7.7 to 8.8 ppm Se), Salt Slough at the San Luis NWR (in green sunfish 3.4 to 6.4 ppm Se; in bluegill 2.1 to 4.1 ppm Se) and North Mud Slough upstream of the San Luis Drain outfall (in green sunfish 2.4 to 11 ppm Se; and in bluegill 9.2 ppm Se). It was at these locations that selenium concentrations in fish were expected to decrease after the Grassland Bypass Project was implemented in September 1996. Also selenium concentrations in bluegill sampled from the San Joaquin River at Hiway 140 were expected to decline, instead data show selenium concentrations increased. Fish samples containing selenium body burden exceeding 4 ppm (Saiki 1998) may be at increased risk of suffering from selenium toxicity (i.e. mortality of juveniles and reproductive failure) as well as being hazardous to fish and wildlife that feed on them (Lemly-1993.) Plankton and clam samples taken show selenium contamination up to 5-ppm selenium (CSWRCB 1991.) FS-3

Chinook salmon and steelhead (also rainbow trout) are among the most sensitive fish species to selenium. Steelhead young generally spend one to two years in freshwater before immigrating to the ocean. Chinook salmon usually spend up to 3 months in fresh water, but can spend 2 years in the freshwater environment. Selenium toxicity is the accumulation of selenium in tissue of fish from the selenium in their diet. They are especially vulnerable during juvenile life stages when they are migrating thru or rearing in selenium-contaminated habitat such as the Lower San Joaquin River and Delta on their way to the Ocean. The longer these young salmon and steelhead rear in selenium-tainted habitat, the greater the risk of selenium bioaccumulation to levels of concern. Selenium apparently can affect smoltification. It is realized that the Delta is a black hole for Central Valley Chinook salmon and steelhead migrating to San Francisco Bay on their way to the Pacific Ocean feeding grounds. Selenium in the San Joaquin River remains above the salmon effect level of about 3.3 ug/L at Hills Ferry (Beckon and Maurer- Nov. 2008.)

Selenium in Chinook salmon from the Stanislaus, Tuolumne and Merced Rivers was .65 to 1.4 ug/g and while in the Lower San Joaquin River the selenium concentration increased to 1.2 to 3.2 ug/g. Saiki (1991) indicated that bioaccumulation to levels about 3 ug/g whole body weight these fish would suffer 25 percent mortality or die off.

Selenium concentration in drainage and the San Joaquin River has decreased since the peak years of 1995 when the loading was estimated at 17,238 pounds at Vernalis (CRWQCB-CVR – 2001.) Given the relationship between selenium in water and young salmon and steelhead there remains a substantial ongoing risk to migrating juvenile

Chinook salmon and steelhead in the San Joaquin River and Delta (Beckon and Maurer –2008). The mortality may be 10 to 20 percent today with a 1.84 ug/g selenium whole body dry weight (Beckon and Maurer, Nov. 2008.) Mud Slough Mosquito fish continue to accumulate selenium to a higher concentration than the toxicity threshold of 4 mg/kg with concentrations ranging from 4.0-to 16.4 mg/kg selenium (Beckon, et.al. –2008.)

A population that suffers 10 to 25 percent mortality attributed to contaminated habitat and food chain cannot be called “in good condition” nor can such a population be called sustainable. A population / ecosystem collapse will surely follow. The most sensitive specie / organism must become the standard for resource protection, not the most tolerant species / organism.

Research findings indicate that the dietary toxicity threshold for selenium in fish and wildlife is only 3 ppm. Because of this, food chain organisms containing 3 ppm dry weight or more should be viewed as potentially lethal to fish and aquatic birds that consume them (Lemly 1993.) Therefore selenium residues in fish tissues and that of other aquatic life in excess of 3 ppm should be considered hazardous to the health of fish life and aquatic life and should be considered as presumptive evidence of significant contamination of the aquatic ecosystem.

Research indicates that waterborne selenium of 2 ppb or greater is considered hazardous to the aquatic ecosystem and to the health and long-term survival of fish and wildlife populations because of bioaccumulation of selenium in food-chain organisms. The extremely narrow margin between "safe" and "toxic" selenium levels in tissue, along with the propensity for it to accumulate in the aquatic food web, underscores the biological importance of even slight increases of selenium in the environment (Lemly 1993). The most sensitive indicator of selenium toxicity in fish and aquatic birds is partial or complete reproductive failure. Such failure can occur with little or no mortality or visible symptoms in adults (Lemly et al. 1993.) The subtle effects of reduced or failed reproduction can have devastating long-term consequences for aquatic biota (LeBlanc-1995, Skorupa, et al 1996.)

FS-3

The thought process to justify the Grasslands Bypass Project appears to be about how much selenium there can be in an aquatic ecosystem before there is specie die off / kill or ecosystem collapse. The question should not be, “What is an acceptable risk for public trust resources, uses and values to suffer so the Westside drainers can continue to use the Drain and the San Joaquin River to dispose of selenium contaminated drainage? That question should not be part of the equation. The question must be refocused to “How best can the stress, harm and toxicity / mortality to Chinook salmon, steelhead, other fish and wildlife and impacts to beneficial uses of water, be prevented?

In drainage and runoff water that carries selenium, selenium contaminates the food chain from the lowest algae and plankton to invertebrates (mollusks and insects), to prey and forage fish to predator fish and wildlife (birds and mammals). Concentration of selenium can commonly reach levels that have killed embryos, deformed young and killed adults. There could a loss of millions of Chinook salmon fingerlings or striped bass larva and no one would see any visual sign or evidence. Young salmon and

steelhead moving through such waters are exposed to selenium-contaminated foods. They are also suffering metabolic stress from a low level of toxicity, or suffering low level but on going mortality. In addition, the continued heavy selenium loading of the Lower San Joaquin River could impair the efforts to restore the Chinook salmon run in the San Joaquin River upstream of the Merced River.

FS-3

The number of pesticides present along with selenium may have importance from a toxicological standpoint. The U.S Geological Survey found concentrations of 33 pesticides (25 herbicides and 8 insecticides) found in Salt Slough (Dubrovsky et al. 1998.) Salt and Mud Sloughs are composed mostly of agricultural drainage including both surface irrigation return flows and sub-surface drainage (shallow ground water). The number of pesticides detection is consistently high in Mud and Salt Sloughs during the irrigation season when such waters receive irrigation return flows and drainage (SWRCB –2000.) The synergistic effects of some pesticides could result in greater toxicity when combined with other toxic compounds and selenium than when individually present. Researchers from the Northwest Fisheries Science Center and Washington State University (Laetz, et al. 2009) report study findings that when salmonid fishes are exposed to carbamate (carbaryl and carbofuran) and organophosphate (diazinon, malathion and chlorpyrifos) agricultural chemicals, the affect is “synergistic” rather than additive, meaning that when test salmon were exposed to combinations of pesticides, the effects were more lethal than could be anticipated from simply adding the effects of the separate chemicals together. These chemicals are known to inhibit the enzyme “acetylcholinesterase” thereby interfering with cholinergic neurotransmission in fish as well as humans. Impacts to the immune system require long-term studies that to my knowledge have not been done.

About 29 miles of Mud and Salt Sloughs and the lower 100 miles of the San Joaquin River are impaired in quality and have a toxicity the source of which is unknown according to the 2000 California 305 (b) Report on Water Quality (SWRCB-October 2000) and remain so today. The findings by Laetz, et al. (2009) should shed light on a possible source of the unknown mortality in Salt and Mud Sloughs and the lower San Joaquin River. The above waters are the defacto San Joaquin Valley drain. These waters are a witch's brew of agricultural chemicals, trace elements and various chloride and sulfate salts carried by drainage and wastewater. Elevated concentrations of many elements and salts including selenium, boron, molybdenum and chloride and sulfate salts are commonly observed. Water quality was a concern then and remains a concern in the south Delta as poor water quality from the San Joaquin River impacts the entire Delta ecosystem. Agricultural chemicals and selenium-contaminated drainage no doubt is playing a roll in the Delta’s Pelagic Organism Decline.

FS-4

Because of selenium’s bioaccumulation properties via the aquatic food chain, Presser and Piper (1998) strongly argue that the assimilation capacity of receiving water for selenium cannot be based on a dilution model. Allowable selenium loading needs to be determined by using a mass balance approach that recognizes the cumulative loading of selenium in water, sediment and biota, including past loading (e.g. in bed sediments). Although not all the ramifications of selenium cycling are known, a mass balance approach to understanding selenium transport and fate would contribute to establishing

limits of bioaccumulation of selenium in relation to such important variables as flow and speciation. These data are necessary for the design of management strategies that try to optimize selenium concentrations and loading and also comply with regulatory commitments that adequately protect the environment and assure the renewability of aquatic resources and other interests covered by public trust protection. FS-4

Bureau of Reclamation public trust obligations.

The Bureau of Reclamation delivers water to the San Luis Unit of the Central Valley Project. It is well recognized that the Central Valley Project and the water it delivers to agriculture is subsidized by the Federal taxpayer (LeVeen-1986, Rennie – 1996.)

Drainage and wastewater resulting from irrigating saline seleniferous soils is a pollutant. With continued irrigation the selenium leachate will continue to move through the soil, and into the groundwater and to surface water causing new and continuing damage each day creating a nuisance. The Reclamation Act of June 17, 1902, states in Section 8, that the Secretary of the Interior, in carrying the provisions of this Act, shall proceed in conformity with State law. Because of selenium's toxic effects and its ability to bioaccumulate in biota, such discharges are expressly prohibited by at least 3 state statutes, Fish and Game Code sections 5650 and 5937 et seq.; Health and Safety Code section 5410 et seq.; and Water Code section 13000 et seq. Fish and Game Code section has remained fundamentally unchanged since 1870. This law was a way to protect streams and rivers from the destructive effects of the gold miners.

Today corporations and their board of directors, the land owners, water purveyors and farm operators responsible for the selenium-laden drainage and wastewater, should be held accountable for the toxic wastes and nuisance impacts. This would include administrators from US Bureau of Reclamation (and all water right permits and licenses) and the Department of Water Resources. It includes managers of Westlands Water District and other irrigation or drainage districts receiving CVP water, such as Broadview Water District, Firebaugh Canal Water District, Pacheco Water District, Panoche Drainage District, Camp 13 Drainers within the Central California Irrigation District, Widren Water District, and Charleston Drainage District. This should also include landowners (including lending institutions) and farm operators irrigating highly saline - seleniferous soils or otherwise causing drainage problems. These people are known or can be quickly identified. They are the responsible parties and should be held accountable for their actions and damages to water quality, trust resources and beneficial uses. (See *Newhall Land and Farming Co. v. Superior Court,* 19 Cal. App. 4th; 23 Cal. Rptr. 2d 377 Oct. 1993.) FS-5

Water borne selenium is the single and best predictor of pollution of the aquatic system. The continued irrigation of saline / seleniferious soils of the San Joaquin Valley with its selenium contaminated discharges to the San Joaquin River constitute a waste and unreasonable use of the State's water and is also a nuisance. When a use of water that so degrades the sustainability of a downstream ecosystem or a component of that ecosystem making it unsuitable for sustaining viable agriculture, populations of wildlife,

fish and other aquatic life, or which results in fish unsuitable for human consumption, or which is a hazard to other fish and wildlife, or which degrades ecological, aesthetic, recreational uses, and scenic values; it is inconsistent with public trust protection and the reasonable use of water, it is a waste of water and is therefore a nuisance. When selenium enters the bodies of mothers of childbearing age or children, or enters the domestic or wildlife food supply to toxic levels without our consent, it is a trespass.

FS-5

State Water Resources Control Board

A public trust duty of the State Water Board is not only to protect the beneficial uses of water, but also to also protect and preserve the State's waters as habitat for fish, wildlife, for fishing, swimming, recreation and ecological values as well as a water supply. This in essence was the rulings in the Federal and State Court decisions in the hydraulic mining cases in 1884, i.e. *Woodruff v North Bloomfield Mining Co.*, 18 F – 1884, and *People v Gold Run Ditch and Mining Co*., 66 Cal.138 -1884.

The 1884 Federal and State rulings were followed by a 1895 ruling by a California Court in *People ex rel Ricks Water Co. v Elk River Mill and Lumber Company* (40 Pac Rpt 486-1895.) In this case the owner of a lumber mill and ranch enterprise was allowing filth from cows, hogs, stables, other debris and fetid matter to enter and contaminate Elk River which was a water supply for people and other interests downstream including the City of Eureka. Clearly this was not a wholesome setting. The *Court* found the pollution a nuisance and an unreasonable use of the waters of the stream. The *Court* reasoned that the acts enjoined are equivalent to actually putting the polluting material directly into the water. The *Court* further stated if the conformation of the defendant's land is such that he cannot carry on a dairy without putting such filth directly into the water, then he must find some other use for the land (emphases added.)

FS-6

Casting the meaning of the *Gold Run* and the *Elk River Mill* decisions in an agricultural drainage and wastewater context, the decision could read "Farming and other agricultural entities / corporations did not gain any right through custom, to dump their wastewater, drainage or other material, sediment, debris, etc., into State waterways. The disposal of such agricultural wastewater and other wastes is a public nuisance, an invasion of public rights, and therefore unlawful. The act of disposing of such agricultural drainage, wastewater and other wastes can be enjoined. The ruling would impact the entire agricultural community and associated corporations. Each entity can continue to farm, but cannot dump or allow their wastewater, drainage and other debris to enter the waters and waterways of the State.

The *Audubon Court* (*National Audubon Society v. Department of Water and Power, City of Los Angeles,* 1983, (also called Mono Lake decision) 33 Cal 3d 419, 658 P2d 709, 189 Cal Rpt 346, modified at 22 Cal 3d 426.) discussed the taking issue. The Court stated, "Once again we reject the claim that the establishment of the public trust constituted a taking of property for which compensation was required-". Holders of water rights (either permit or license) hold them subject to the public trust (189 Cal Rpt. 346 at 360- 1983.) Since protecting the public trust was a pre-condition of any water

right permit or license issuance, the water necessary to protect the public trust was never transferred and therefore there is no taking issue.

Protecting the public trust interests and beneficial uses of water is a pre-condition of any discharge permit issuance. Therefore any discharge that is found to be or result in an unreasonable use of water or a nuisance, the discharge permit can be with drawn, the discharged enjoined and there is no taking issue (*Audubon* – 1983.)

FS-6

Water Management and Policy

The following questions regarding public policy and water management must be openly answered regarding this project and similar project that discharge selenium contaminated drainage and wastewater that enters California's aquatic ecosystems, surface and groundwater.

1. Is it good public policy and a good investment of public and private funds to irrigate saline - seleniferous soils?

   Response. No. With today's knowledge about the extent of selenium in soils on the Westside of San Joaquin Valley and the long-term environmental impacts resulting from selenium contaminated drainage and wastewater on beneficial uses of water and the public trust, it is not good public policy. It is also not a good investment of public and private funds to continue to irrigate saline seleniferous soils that are the source of the selenium drainage and wastewater because of its toxic impacts and destruction of beneficial uses of water, associated resources, uses and values.

2. Is it good public policy to dam Northern California Rivers and divert massive amounts of such waters to irrigate selenium containing lands, when the drainage and wastewater from this activity results in poisoning fish, birds, mammals, reptiles and other wildlife and renders their habitats toxic; killing the soil thru salinization as well as degrading or destroying beneficial uses of water?

   Response. No. It is not good policy nor is it wise use of our water resources to dam Northern California rivers and divert massive amounts of water to irrigate saline seleniferous soils which results in drainage and discharges that degrade water quality, poison the soil, kill fish and wildlife and render wetland habitats toxic and destroying beneficial uses of the State surface and groundwater.

3. Is it a reasonable and wise use of our limited water resources to continue to irrigate saline-seleniferous soils to grow surplus crops in a near desert environment when other options are available?

   Response. No. It is not reasonable to use our limited high quality water resources to irrigate saline seleniferous soils to grow surplus crops. In addition with today's knowledge such an irrigation use is not sustainable. In addition

FS-7

species listed under the Federal Endangered Species Act are being impacted in the area of origin as well as in the area of use, i.e. the San Joaquin Valley.

4. Have we pushed the assimilative capacity of Central Valley rivers and the Delta to the point where the water quality is detrimental to the sustainability of fish and other aquatic life, water dependent species, migratory birds, recreation and other beneficial uses of such waters?

   Response. Yes. From the evidence the State Water Board may have pushed the assimilative capacity of the San Joaquin River, its valley tributaries and the Delta beyond its ability to recover. The synergistic effects and the safe limits of selenium coupled with boron, molybdenum, and a variety of salts and dozens of agricultural chemicals (many herbicides, insecticides, volatile organic compounds and fertilizers) found in Valley waters are unknown. The Pelagic Organism Decline in the Delta may be a real warning sign.

This EIS / EIR and the San Luis and Delta Mendota Water authority should refer to the California Court's *Audubon* decision and to State Water Board's Mono Lake Basin Water Right Decision 1631 for guidance in how to manage public trust assets. The *Audubon* Court stated that the public trust is more than affirmation of State's power to use public property for public purposes with any surrendering that right of protection only occurring in rare cases when abandonment of that right is consistent with the purposes of the trust. The *Audubon* Court also said parties acquiring rights in trust property (in *Audubon* it was freshwater), hold those rights subject to the public trust and can assert no vested right to use those rights in a manner harmful to the trust. One must conclude that protecting the public trust is a pre-condition of any water right permit or license or any discharge permit issued by the State. FS-7

Racanelli (*U.S. v. State Water Resources Control Board*, 227 Cal Rptr. 161, at 195) ordered the State Water Board to set water quality standards to protect all beneficial uses. Racanelli also told the State Water Board that it must take a global view, i.e. watershed and consider all storage, diversions and discharges. The *Racanelli* decision (at 200) also stated the State Water Board has a mandate under state and federal law to set water quality standards to protect fish, wildlife and ecological values.

The *Audubon* Court tied public trust protection to the maintenance of natural resources for the innate value and not to private beneficial uses of water. Under *Audubon* the Water Board's first task was to determine the water requirements necessary to protect trust uses in the Mono Lake Basin. In the State Water Board's Mono Lake Decision 1631, the effort was to establish standards to protect Mono Lake and tributaries for many natural values and beneficial uses before water could be exported out of the Basin (Koehler, Cynthia L.-1995.) The continued irrigation of the seleniferous soils of the Grassland Drainers with water imported from northern California Rivers apparently requires the continued use of the Drain to dispose of the selenium contaminated drainage. It doesn't correct the problem; it just moves the toxic problem to another area to Mud Slough and the San Joaquin River to the Delta.

The availability of subsidized CVP water encouraged Westside farmers to develop lands that could not be farmed for lack of water and to irrigate marginal lands that could not be farmed at a profit (LeVeen-1986, Rennie- 1996.) In 1978, the Federal subsidy (public investment) was put at $770 million, or a value of $1,540 per acre for the San Luis Unit, CVP. The value of the land has increased about $800.00 per acre while the project cost was $1,540.00 per acre. This is about a $2.00 dollar cost to $1.00 dollar benefit ratio. This does not include the annual subsidized cost of water and power that is used to pump water through the various pump lifts and canals. The annual water and power subsidy per acre of Westlands was estimated at $217.00 per irrigated acre (see pages 38 & 39 – Task Force Report -USBR 1978.) Using the Cost of Living Calculator, the $1,540.00 value in 1977 is $5,227.00 per acre in 2007.

This does not include the damages to public trust resources (several races of Chinook salmon, Coho salmon and steelhead), uses and ecological values in the watersheds of origin of the water supply such as the Trinity, Sacramento and American Rivers. The subsidy value does not include damages to trust interests of the Grasslands, degraded surface and ground-water supplies, the cost of replacement water supplies or any clean-up and allied costs associated with selenium damages, or the more than $150 million drainage water studies.

Today the value of the uplands containing selenium source or the contaminated bottomlands would be far less than the $800.00 figure of 30 years ago. Without Federally subsidized water along with crop subsidies, much of the developed farmed land, the source of the selenium drainage, would not be irrigated. Such lands on the open market would be nearly worthless without subsidized water and crop subsidy payments (LeVeen -1985, Rennie – 1996.) Madera, Merced and Fresno Counties (which includes the Drainers), received about $132 million in farm subsidies in 2006. Trinity County received $585.00. (USDA data in Environmental Working Group Website, Feb. 16, 2009.)

FS-7

Human health advisories have been issued yearly against consuming selenium contaminated fish tissues (bluegill and largemouth bass) and of migratory birds (ducks and coots) from the Grasslands. Women of childbearing age and children are cautioned against eating any such tissues.

Waterborne selenium is the single best predictor of pollution that it can and will continue to have an adverse affect on the aquatic ecosystem, associated fish and wildlife resources, uses and values (Saiki, et al-2001.) While the selenium loading of the San Joaquin River has decreased in the past few years, there is still a substantial loading occurring. The continued use of the San Luis Drain to carry drainage and then dumping this drainage into Mud Slough where it can flow to the San Joaquin River and on to the Sacramento- San Joaquin Delta is just another taxpayer subsidy to those farming seleniferous soils.

Summary

Public trust properties and interests have been degraded and the viability of aquatic ecosystems tributary to the San Joaquin River and the River itself are impaired. This pollution has degraded public trust assets and beneficial uses. Such pollution has multiple long-term problems for water supply, water quality and the sustainability of aquatic resources and ecosystems. A least a partial cause of the Delta's Pelagic Organism Decline could be traced to selenium and pesticide contaminated environment.

Central Valley Chinook salmon and steelhead are among the most sensitive of fish and wildlife to selenium exposure. They are especially vulnerable during juvenile life stages when they migrate and rear in selenium-contaminated Central Valley Rivers and the San Francisco Bay/Delta estuary. Rivers and sloughs that carry agricultural drainwater, concentration of selenium in invertebrates (insects and mollusks), small (prey) fish, and larger predatory fish commonly reach levels that could kill a substantial portion of young salmon. If Chinook salmon and steelhead young are exposed to selenium-laden food supply long enough on their downstream migration, they could bioaccumulate selenium to toxic levels. Based on existing water quality data for selenium in specific reaches of the San Joaquin River, there remains a substantial ongoing risk to migrating juvenile Chinook salmon and steelhead in the San Joaquin River. The continued selenium loading of the Lower San Joaquin River plus the effects of agricultural chemicals could impair the efforts to restore the Chinook salmon run in the San Joaquin River upstream of the Merced River as well as impacting existing runs in the Stanislaus, Tuolumne and Merced Rivers. FS-8

A use of water that so degrades the sustainability of a aquatic ecosystem or a component of that ecosystem to make it unsuitable for sustaining viable agriculture, wildlife, fish and other aquatic life, or which makes fish unsuitable for human consumption, or which is a hazard to other fish and wildlife, or which degrades ecological, aesthetic, recreational uses, small craft navigation, and scenic values, <u>is inconsistent with public trust protection, the reasonable use of water and is therefore a nuisance</u>. <u>When chemicals enter the bodies of adults or children, or enter the domestic or wildlife food supply to toxic levels without our consent, it is a trespass.</u>

Respectively Submitted

Felix E. Smith

ComGrasslandBypasPj2010-20196thD.
March 16, 2009

Selected references

Beckon, W.N., M.C.S. Eacock, and A.G. Gordus. 2008. Biological effects of the Grassland Bypass Project, January 1, 2004 – December 31, 2005. Chapter 7, pages 93-167 in the Grassland Bypass Project Annual Report 2004-2005. San Francisco Estuary Institute.

Beckon, William and Thomas C. Maurer – 2008. Potential Effects of Selenium Contamination on Federally Listed Species Resulting from the Delivery of Federal Water to the San Luis Unit. U.S. Fish and Wildlife Service, Sacramento Fish and Wildlife Office. For U.S. Bureau of Reclamation, March 2008

Beckon, William and Thomas C. Maurer – 2008. Toxicity of Selenium to Salmonids. U.S. Fish and Wildlife Service, Sacramento, CA. November 20, 2008

Brown Larry R. 1998. Assemblages of Fish and Their Associations with Environmental Variables, Lower San Joaquin River Drainage, California. U.S. Geological Survey, Open-file Report 98-77.

California State Water Resources Control Board. 1982. Water quality Inventory for water years 1980 and 1981. Water Quality Monitoring Report No. 82-1 TS.

California Regional Water Quality Control Board-Central Valley Region. 2001. Total maximum Daily Load for Selenium in the Lower San Joaquin River. August 2001

California State Water Resources Control Board. 1982. Water quality Inventory for water years 1980 and 1981. Water Quality Monitoring Report No. 82-1 TS.

_____. 1984. Agricultural Water Management for Water Purveyors. Division of Water Rights. September 1984, at pg.1.

_____. 1985. State Board Order No. WQ 85-1, Feb. 5, 1985.

_____. 2000. 2000 California 305(b) Report on Water Quality, October 2000.

Crader, Phillip G. Water Quality Monitoring. In Grasslands Bypass Project. Central Valley Regional Water Quality Control Board, January 1, 2003 – December 31, 2003

Dubrovsky, Neil M., Charles R. Kratzer, Larry R. Brown, JoAnn M. Gronberg, and Karen R. Burow. 1998. Water Quality in the San Joaquin -Tulare Basins, California, 1992-95. U.S. Geological Survey Circular 1159.

Laetz, Cathy A., David H. Baldwin, Tracy K. Collier, Vincent Hebert, John D. Stark, and Nathaniel L. Scholz. 2009. Synergistic Toxicity of Pesticide Mixture: Implication for Risk Assessment and the Conservation of Endangered Pacific Salmon. Environmental Health Perspective, Volume 117, No. 3, pg 348 –353, March 2009.

Koehler, Cynthia L. 1995. Water Rights and the Public Trust Doctrine: Resolution of the Mono Lake Controversy. University of California, Berkeley, Ecology Law Quarterly Vol. 22, No. 3 at 541.

LeBlanc, Gerald A. 1995. Subtle effects: Devastating Consequences. In SETAC News. Society of Environmental Toxicology and Chemistry, May 1995 at pp 31-31.

Lemly, Dennis A., 1985. Toxicology of Selenium in a Freshwater Reservoir: Implications for Environmental Hazard Evaluation and Safety. In Ecotoxicology and Environmental Safety 10, 314-338. 1985.

Lemly, A. Dennis. 1993. Guidelines for evaluating selenium data from aquatic monitoring and assessment studies. Environmental Monitoring and Assessment Vol. 28:83-100 at pg.88.

Lemly, A Dennis, S.E. Finger and M.K. Nelson. 1993. Sources and impacts of irrigation drainwater contaminants in arid wetlands. Environmental Toxicology and chemistry, Vol.12, pp. 2265-2279

LeVeen, Phillip, 1985. Kesterson as a Turning Point for Irrigated Agriculture. In Selenium and Agricultural Drainage: Implications for San Francisco Bay and the California environment. Proceedings of the Second Selenium Symposium, March 23, 1985. Pp 104-117. The Bay Institute of San Francisco, 1986.

Presser, Theresa S. and Samuel N. Luoma. –2006. (Also USGS Report) Forecasting Selenium Discharges to the San Francisco Bay-Delta Estuary; Ecological Effects of a Proposed San Luis Drain Extension". U.S. Geological Survey, Professional Paper 1646.

Presser, Theresa S. and David Z. Piper. 1998. Mass Balance Approach to selenium cycling through the San Joaquin Valley: From Source to River to Bay. In Environmental Chemistry of Selenium, Edited by William T. Frankenberger, Jr. and Richard A. Emgberg, Marcel Decker, Inc 1998.

Rennie, Scott M., 1996. Selenium in San Joaquin Valley Agricultural Drainage: A Major Toxic Threat to Fish and Wildlife Inadequately Addressed by the Central Valley Project Improvement Act. Pacific Law Journal, Vol. 27, No. 2, 1996. McGeorge School of Law, University of the Pacific.

Saiki, Michael K., 1998. Grassland Bypass Project, Final Report of Work Accomplished. Prepared by the U.S. Geological Survey for the U.S. Fish and Wildlife Service.

Saiki, Michael J., Barbara A. Martin, Steven E. Schwarzbach, and Tom W. May. 2001. Effects of an Agricultural Drainwater Bypass on Fishes Inhibiting the Grassland Water District and the Lower San Joaquin River. In North American Journal of Fisheries Management, Vol. 21:624-635, 2001

Skorupa, Joseph P., Sarah P. Morman and Judy S. Sefchick-Edwards. 1996. Guidelines For Interpreting Selenium Exposures of Biota Associated with Non-Marine Aquatic Habitats. Prepared for The National Irrigation Water Quality Program by Sacramento Field Office, U.S. Fish and Wildlife Service, March 1996.

Special Task Force Report on the San Luis Unit, Central Valley Project, CA Public Law 94-46. 1978. U.S.B.R., U.S. Government Printing at pg. 38-40.

Smith, Felix E. 1996. The Kesterson Effect: Reasonable use of Water and the Public Trust. San Joaquin Agricultural Law Review. Vol. 6, No. 1, pg 45 –67,1996. San Joaquin College of Law.

U.S. Fish and Wildlife Service. 1995. Sacramento- San Joaquin Delta Native Fishes Recovery Plan. U.S. Fish and Wildlife Service. Portland, Oregon.

This Page Intentionally Left Blank

RESPONSE FS

Felix E. Smith March 16, 2009

FS-1

The zone of primary influence extends from the GDA to the San Joaquin River at Crows Landing. The Basin Plan specifies water quality standards based on beneficial uses including aquatic life and human health. The concentration of selenium in the river at Crows Landing has met the current standard (5 ppb 4-day average). The concentration will diminish further with the Proposed Action (completion of the GBP). See the attached Figure 1 and tables from the GBP annual report. Groundwater effects are within the GDA and are described in Section 5.2.3.2.1. That analysis indicates, as compared to existing conditions, no impact for drainage production; a positive effect on bare-soil evaporation rates; a significant beneficial impact regarding uncontrolled seepage and discharges; and a beneficial effect with regard to subsurface flows.

The balance of the comments deal with general CVP operations. The Proposed Action will not alter CVP operations, especially diversions from the Delta. The Proposed Action will diminish the loads of selenium and salts in Mud Slough (north) and the San Joaquin River and will eliminate all discharge of runoff and contaminated drainage from the GDA.

FS-2

This comments regarding public trust concerns about drainage produced from irrigation of the San Luis Unit are noted and considered. However, we do not agree with many opinions, characterizations and legal conclusions as expressed by the commenter.

The Proposed Action deals with the Grassland Drainage Area, a small portion of the San Luis Unit. The rest of the San Luis Unit does not drain to the San Joaquin River, and this area is not part of the Proposed Action. The GDA also has never drained into Kesterson Reservoir.

We acknowledge the 2009 study by Kaufman, et. al., that indicates that green sturgeon are particularly sensitive to dietary selenium, as well as studies by Beckon and others relating to potential bioaccumulation in food organisms utilized by various fish species, although this response does not undertake a study by study evaluation of the material cited by the commenter. However, the Proposed Action will continue to diminish the loads of selenium and salts in the San Joaquin River, over time will diminish loads in Mud Slough (north) and will eliminate all discharge of runoff and drainage containing selenium from the GDA. Water quality data also indicate that the selenium objective at Crows Landing is being met. The concentration of selenium measured at the Jones Pumping Plant is consistently below detection level (0.4 ppb), well below the 2ppb level of concern for selenium.

Instead of ignoring the problems cited by the State Water Board in 1984, the focus of the Project has been the control and reduction of selenium discharged from the Grassland Drainage Area. It has removed agricultural subsurface drainage from the GDA from the adjacent wetland areas and conducted careful monitoring and management of drainwater reuse. The participating Districts and the Grassland Area Farmers have implemented projects to recycle agricultural runoff and reduce subsurface drainage through improved irrigation technologies and lining of ditches. The

Proposed Action would lead to elimination of discharges from irrigation in the GDA to the Grasslands basin by 2019.

FS-3

The comment that agricultural drainage enters the San Joaquin River and its tributaries and that selenium causes risks to fish is noted and has been considered. However, we do not agree with many opinions, characterizations and legal conclusions as expressed by the commenter. The attached tables summarize annual data for Water Years 1986 to 2007. The loads of salts, boron, and selenium in Mud and Salt Sloughs and the San Joaquin River have diminished in recent years compared to pre-project conditions. The proposed action will continue to reduce and eliminate this contamination.

The 5 ppb, four-day average standard for selenium in the San Joaquin River below the Merced River in wet and above normal years was specified in the Basin Plan on October 1, 2005. Figure 1 in the attachment shows that this standard has been met since that date. The concentration of selenium in Mud Slough below the San Luis Drain currently does exceed the 5 ppb, 4-day average set to take effect on October 1, 2010.

The Proposed Action will continue biological monitoring in Mud Slough, Salt Slough, and the San Joaquin River.

CDFG data, published in the GBP annual reports, indicate that the concentrations of selenium in mosquitofish collected at Hills Ferry are below the 4 mg/kg level of concern. The concentration of selenium is well below the 2 mg/kg (wet weight) level of concern for human health in carp muscle tissue. The rationale for establishing levels of concern and toxicity for various species and media are explained in Chapter 7 of the GBP annual reports.

FS-4

Comments on Se in the aquatic environment are noted and considered. However, we do not agree with many opinions, characterizations and legal conclusions as expressed by the commenter. The Proposed Action will continue regional water quality monitoring, including measurements of selenium, salinity, boron, and molybdenum. Under the Proposed Action, the GDA must meet water quality objectives set to protect the aquatic environment, including any objectives that change based upon newly developed information on bioaccumulation. The causes of Pelagic Organism Decline are complex and under study by DWR and others.

FS-5

Comments on public trust obligations are noted. However, we do not agree with many opinions, characterizations and legal opinions as expressed by the commenter.

FS-6

Comments on the State Water Board are noted. However, we do not agree with many opinions, characterizations and legal conclusions as expressed by the commenter.

FS-7

Comments on public policy and water management are noted. Most of these deal with general management of water across the entire state of California. Also, we do not agree with many opinions, characterizations and legal conclusions as expressed by the commenter.

The Proposed Action will not alter water operations conducted by the Central Valley Project and will continue to diminish and eliminate contamination of Mud Slough and the San Joaquin River.

The Proposed Action does not include lands within Westlands Water District.

The Proposed Action will continue biological monitoring in the sloughs and San Joaquin River. CDFG data indicate that selenium in whole body fish and carp muscle tissue collected at Hills Ferry remain below levels of concern and human health criteria.

FS-8

Summary comments are noted. However, we do not agree with many opinions, characterizations and legal opinions as expressed by the commenter.

The Proposed Action will continue biological and water quality monitoring in the sloughs and San Joaquin River. This monitoring will be coordinated with the San Joaquin River Restoration Program that will also be administered by Reclamation staff in Fresno.

Figure 1. San Joaquin River at Crows Landing
4-Day Average Concentration of Selenium

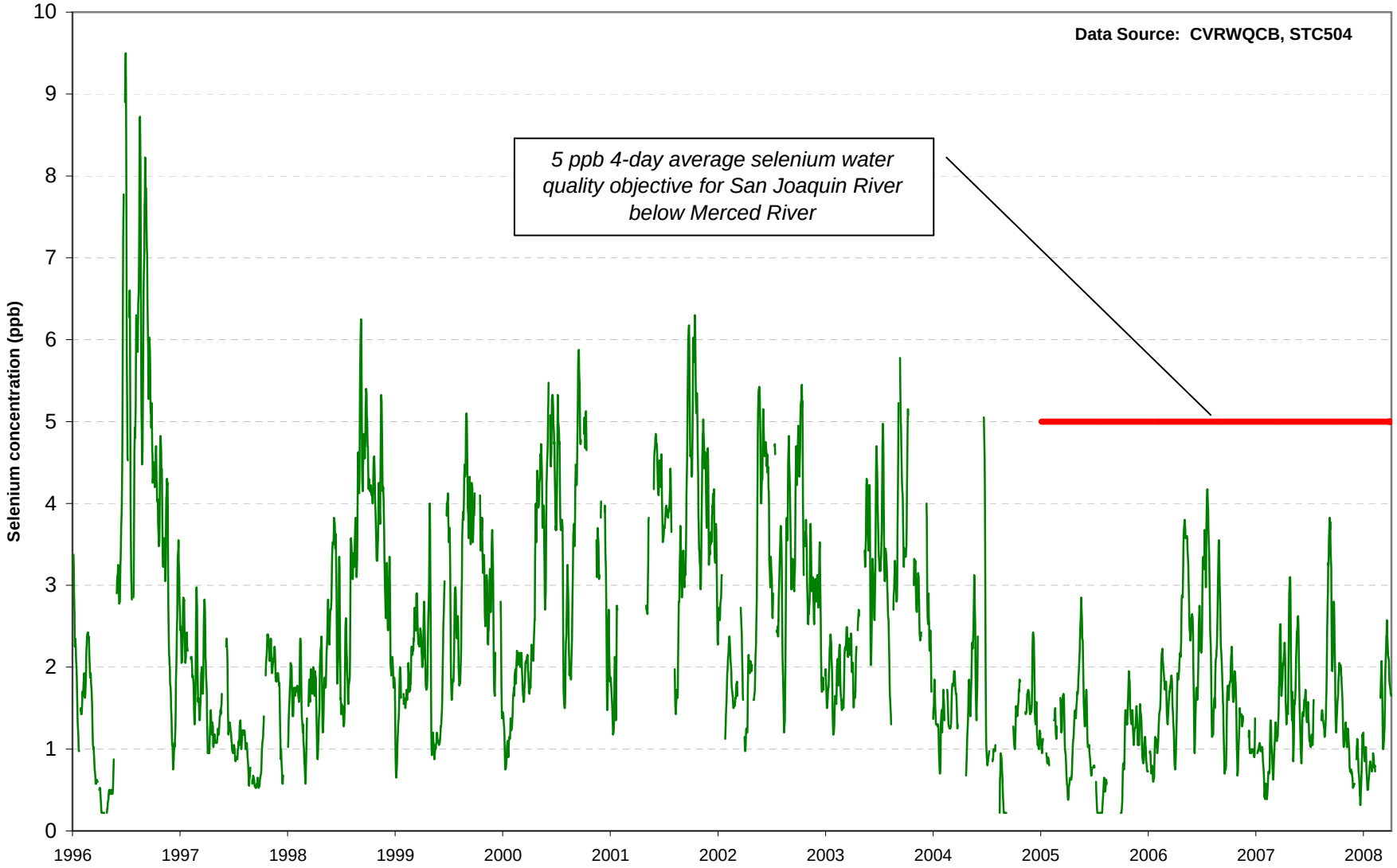


Table 5. Grassland Drainage Area - Water Years 1986 - 2007

Water Year (1)	Flow Weighted Loads				Flow Weighted Concentration				
	Flow acre-feet	Selenium pounds	Boron 1000 pounds	TDS tons	Selenium µg/L	Boron mg/L	EC µS/cm	TDS mg/L	Reference
WY 1986	67,010	9,524	787	214,250	52.3	4.3		2,351	(2)
WY 1987	74,900	10,959	889	241,526	53.8	4.4		2,371	(2)
WY 1988	65,330	10,097	821	236,301	56.8	4.6		2,660	(2)
WY 1989	54,190	8,718	743	202,420	59.2	5.0		2,747	(2)
WY 1990	41,660	7,393	672	171,265	65.2	5.9		3,023	(2)
WY 1991	29,290	5,858	544	129,899	73.5	6.8		3,261	(2)
WY 1992	24,530	5,083	435	110,327	76.2	6.5		3,307	(2)
WY 1993	41,200	8,856	730	183,021	79.0	6.5		3,267	(2)
WY 1994	38,670	8,468	645	171,495	80.5	6.1		3,261	(2)
WY 1995	57,570	11,875	868	237,530	75.8	5.6		3,034	(2)
WY 1996	52,980	10,034	723	197,526	69.6	5.0		2,742	(3)
Pre-Project Averages	49,760	8,806	714	190,510	67.4	5.5		2,910	
WY 1997	37,800	7,418	772	176,750	67.5	7.3	4,480	3,315	(4)
WY 1998	43,570	8,436	868	211,340	70.6	7.7	4,838	3,580	(4)
WY 1999	30,510	5,178	620	143,910	65.3	7.7	4,820	3,567	(4)
WY 2000	29,330	4,685	583	135,250	61.3	7.4	4,614	3,414	(4)
WY 2001	27,050	4,509	538	125,080	62.8	7.4	4,605	3,408	(4)
WY 2002	25,820	3,815	509	111,220	58.3	7.4	4,397	3,254	(4)
WY 2003	25,250	3,865	543	113,600	61.6	8.1	4,552	3,368	(4)
WY 2004	25,370	3,813	513	110,700	60.9	7.6	4,445	3,290	(4)
WY 2005	27,540	3,701	613	126,990	49.0	8.2	4,584	3,392	(4)
WY 2006	23,080	3,612	508	111,070	58.2	8.1	4,782	3,538	(4)
WY 2007	16,480	2,581	309	77,140	57.3	7.0	4,660	3,449	(4)
Project Averages	28,350	4,692	580	131,190	61.2	7.6	4,616	3,416	

References:

(1) Water Year: October - September

(2) CVRWQCB, February 1998. Loads of Salt, Boron, and Selenium in the Grassland Watershed and Lower San Joaquin River, October 1985 to September 1995; Volume I: Load Calculations. Table 16.

(3) CVRWQCB, December 1998. Agricultural Drainage Contribution to Water Quality in the Grassland Watershed of Western Merced County, California: October 1995 - September 1997 (Water Years 1996 and 1997). Table 20

(4) Concentrations and loads calculated from data for GBP Site A

Table 6. Grassland Watershed (Mud and Salt Sloughs) - Water Years 1986 - 2007

Water Year (1)	Flow Weighted Loads				Flow Weighted Concentration				
	Flow acre-feet	Selenium pounds	Boron 1000 pounds	TDS tons	Selenium µg/L	Boron mg/L	EC µS/cm	TDS mg/L	Reference
WY 1986	284,316	6,643	1,368	494,544	8.6	1.8		1,279	(2)
WY 1987	233,843	7,641	1,265	438,904	12.0	2.0		1,380	(2)
WY 1988	230,454	8,132	1,301	455,959	13.0	2.1		1,455	(2)
WY 1989	211,393	8,099	1,139	389,325	14.1	2.0		1,354	(2)
WY 1990	194,656	7,719	1,121	380,564	14.6	2.1		1,438	(2)
WY 1991	102,162	3,899	912	221,542	14.0	2.2		1,595	(2)
WY 1992	85,428	2,919	522	197,352	12.6	2.3		1,699	(2)
WY 1993	167,955	6,871	1,066	336,522	15.0	2.3		1,473	(2)
WY 1994	183,546	7,980	1,116	379,408	16.0	2.2		1,520	(2)
WY 1995	263,769	10,694	1,459	499,339	14.9	2.0		1,392	(2)
WY 1996	267,948	9,491	1,299	477,725	13.0	1.8		1,311	(3)
Pre-Project averages	202,320	7,281	1,143	388,290	13.4	2.1		1,450	
WY 1997	287,010	7,428	1,391	446,690	12.4	2.2	1,794	1,231	(4)
WY 1998	378,670	8,648	1,871	627,420	10.6	2.2	1,972	1,350	(4)
WY 1999	253,130	5,668	1,214	401,340	9.2	1.9	1,749	1,198	(4)
WY 2000	235,490	3,952	1,122	372,340	7.5	2.0	1,788	1,223	(4)
WY 2001	226,750	4,902	1,086	382,900	9.7	1.9	1,912	1,311	(4)
WY 2002	180,160	3,913	952	327,460	9.7	2.1	2,015	1,381	(4)
WY 2003	216,140	4,020	2,315	374,000	8.1	3.8	1,887	1,294	(4)
WY 2004	210,520	3,928	1,011	350,600	8.2	2.0	1,879	1,290	(4)
WY 2005	265,880	4,847	1,341	436,320	7.4	2.0	1,794	1,230	(4)
WY 2006	284,900	3,864	1,667	435,330	5.5	2.0	1,631	1,120	(4)
WY 2007	183,500	2,509	676	271,510	6.6	1.6	1,770	1,210	(4)
Project Averages	247,470	4,880	1,331	402,360	8.6	2.2	1,836	1,258	

References:

(1) Water Year - October - September

(2) CVRWQCB, February 1998. Loads of Salt, Boron, and Selenium in the Grassland Watershed and Lower San Joaquin River, October 1985 to September 1995; Volume I: Load Calculations. Table 17.

(3) CVRWQCB, December 1998. Agricultural Drainage Contribution to Water Quality in the Grassland Watershed of Western Merced County, California: October 1995 - September 1997 (Water Years 1996 and 1997) Table 21.

(4) Loads and concentrations calculated from data for GBP Sites D and F

Table 7. San Joaquin River at Patterson and Crows Landing - Water Years 1986 - 2007

Water Year (1)	Flow Weighted Loads				Flow Weighted Concentration				
	Flow acre-feet	Selenium pounds	Boron 1000 pounds	TDS tons	Selenium µg/L	Boron mg/L	EC µS/cm	TDS mg/L	Reference
WY 1986	2,676,764	10,568	2,563	991,086	1.5	0.4		272	(2)
WY 1987	662,135	8,857	1,681	715,301	4.9	0.9		794	(2)
WY 1988	549,412	9,330	1,854	731,877	6.2	1.2		980	(2)
WY 1989	438,398	7,473	1,305	543,916	6.3	1.1		912	(2)
WY 1990	404,163	6,125	1,142	537,896	5.6	1.0		979	(2)
WY 1991	291,223	3,548	760	419,457	4.5	1.0		1,059	(2)
WY 1992	304,151	3,064	740	391,336	3.7	0.9		946	(2)
WY 1993	891,230	8,209	1,588	686,212	3.4	0.7		566	(2)
WY 1994	562,301	7,270	1,260	584,834	4.8	0.8		765	(2)
WY 1995	3,504,034	14,291	2,296	1,236,981	1.6	0.2		260	(2)
WY 1996	1,445,730	10,686	1,765	805,600	2.7	0.5		410	(3)
Pre-Project Averages	1,066,320	8,129	1,541	694,950	4.1	0.8		720	
WY 1997	3,452,870	12,329	2,706	928,880	3.2	0.6	820	508	(4)
WY 1998	4,904,910	15,821	3,072	1,511,480	1.4	0.4	601	373	(4)
WY 1999	1,015,480	6,708	1,591	680,120	2.7	0.7	902	559	(4)
WY 2000	1,027,440	6,353	1,630	703,910	2.5	0.7	976	605	(4)
WY 2001	653,430	5,595	1,396	623,560	3.2	0.8	1,162	720	(4)
WY 2002	533,960	4,056	1,227	517,360	3.1	0.9	1,202	745	(4)
WY 2003	546,130	4,149	4,666	576,340	2.9	3.0	1,244	771	(4)
WY 2004	554,550	4,078	1,341	564,500	2.8	0.9	1,226	760	(4)
WY 2005	1,721,000	5,297	1,895	881,460	1.3	0.5	722	448	(4)
WY 2006	3,437,650	5,652	1,862	947,330	1.0	0.4	569	353	(4)
WY 2007	607,230	2,997	1,064	538,700	1.8	0.7	1,103	684	(4)
Project Averages	1,677,700	6,640	2,041	770,330	2.3	0.9	957	593	

References:

(1) Water Year - October - September

(2) CVRWQCB, February 1998. Loads of Salt, Boron, and Selenium in the Grassland Watershed and Lower San Joaquin River, October 1985 to September 1995; Volume I: Load Calculations. Table 18.

(3) CVRWQCB, December 1998. Water Quality of the Lower San Joaquin River: Lander Avenue to Vernalis, October 1995 - September 1997 (Water Years 1996 and 1997) Table 12.

(4) Concentrations and loads calculated from data for GBP Site N

Grassland Bypass Project
Table 1. Summary Data

Water Year (1)	Grassland Drainage Area (2)				Mud & Salt Sloughs				San Joaquin River at Patterson/ Crows Landing			
	Flow	Selenium	Boron	TDS	Flow	Selenium	Boron	TDS	Flow	Selenium	Boron	TDS
	acre-feet	pounds	1000 pounds	tons	acre-feet	pounds	1000 pounds	tons	acre-feet	pounds	1000 pounds	tons
WY 1986	67,010	9,524	787	214,250	284,316	6,643	1,368	494,544	2,676,764	10,568	2,563	991,086
WY 1987	74,900	10,959	889	241,526	233,843	7,641	1,265	438,904	662,135	8,857	1,681	715,301
WY 1988	65,330	10,097	821	236,301	230,454	8,132	1,301	455,959	549,412	9,330	1,854	731,877
WY 1989	54,190	8,718	743	202,420	211,393	8,099	1,139	389,325	438,398	7,473	1,305	543,916
WY 1990	41,660	7,393	672	171,265	194,656	7,719	1,121	380,564	404,163	6,125	1,142	537,896
WY 1991	29,290	5,858	544	129,899	102,162	3,899	912	221,542	291,223	3,548	760	419,457
WY 1992	24,530	5,083	435	110,327	85,428	2,919	522	197,352	304,151	3,064	740	391,336
WY 1993	41,200	8,856	730	183,021	167,955	6,871	1,066	336,522	891,230	8,209	1,588	686,212
WY 1994	38,670	8,468	645	171,495	183,546	7,980	1,116	379,408	562,301	7,270	1,260	584,834
WY 1995	57,570	11,875	868	237,530	263,769	10,694	1,459	499,339	3,504,034	14,291	2,296	1,236,981
WY 1996	52,980	10,034	723	197,526	267,948	9,491	1,299	477,725	1,445,730	10,686	1,765	805,600
Pre-Project Averages	49,760	8,806	714	190,510	202,320	7,281	1,143	388,290	1,066,320	8,129	1,541	694,950
WY 1997	37,800	7,418	772	176,750	287,010	7,428	1,391	446,690	3,452,870	12,329	2,706	928,880
WY 1998	43,570	8,436	868	211,340	378,670	8,648	1,871	627,420	4,904,910	15,821	3,072	1,511,480
WY 1999	30,510	5,178	620	143,910	253,130	5,668	1,214	401,340	1,015,480	6,708	1,591	680,120
WY 2000	29,330	4,685	583	135,250	235,490	3,952	1,122	372,340	1,027,440	6,353	1,630	703,910
WY 2001	27,050	4,509	538	125,080	226,750	4,902	1,086	382,900	653,430	5,595	1,396	623,560
WY 2002	25,820	3,815	509	111,220	180,160	3,913	952	327,460	533,960	4,056	1,227	517,360
WY 2003	25,250	3,865	543	113,600	216,140	4,020	2,315	374,000	546,130	4,149	4,666	576,340
WY 2004	25,370	3,813	513	110,700	210,520	3,928	1,011	350,600	554,550	4,078	1,341	564,500
WY 2005	27,540	3,701	613	126,990	265,880	4,847	1,341	436,320	1,721,000	5,297	1,895	881,460
WY 2006	23,080	3,612	508	111,070	284,900	3,864	1,667	435,330	3,437,650	5,652	1,862	947,330
WY 2007	16,480	2,581	309	77,140	183,500	2,509	676	271,510	607,230	2,997	1,064	538,700
WY 2008	13,210	1,740	281	55,280	152,610	1,810	664	263,020	580,500	2,233	1,036	493,370
Project Averages	28,350	4,692	580	131,190	247,470	4,880	1,331	402,360	1,677,700	6,640	2,041	770,330

Table __.Contribution of the Grassland Drainage Area to the Regional Watershed

	Mud & Salt Sloughs				San Joaquin River at Patterson/ Crows Landing			
	Flow	Selenium	Boron	TDS	Flow	Selenium	Boron	TDS
	acre-feet	pounds	1000 pounds	tons	acre-feet	pounds	1000 pounds	tons
WY 1986	24%	143%	58%	43%	3%	90%	31%	22%
WY 1987	32%	143%	70%	55%	11%	124%	53%	34%
WY 1988	28%	124%	63%	52%	12%	108%	44%	32%
WY 1989	26%	108%	65%	52%	12%	117%	57%	37%
WY 1990	21%	96%	60%	45%	10%	121%	59%	32%
WY 1991	29%	150%	60%	59%	10%	165%	72%	31%
WY 1992	29%	174%	83%	56%	8%	166%	59%	28%
WY 1993	25%	129%	68%	54%	5%	108%	46%	27%
WY 1994	21%	106%	58%	45%	7%	116%	51%	29%
WY 1995	22%	111%	59%	48%	2%	83%	38%	19%
WY 1996	20%	106%	56%	41%	4%	94%	41%	25%
Pre-Project Averages	25%	121%	63%	49%	5%	108%	46%	27%
WY 1997	13%	100%	56%	40%	1%	60%	29%	19%
WY 1998	12%	98%	46%	34%	1%	53%	28%	14%
WY 1999	12%	91%	51%	36%	3%	77%	39%	21%
WY 2000	12%	119%	52%	36%	3%	74%	36%	19%
WY 2001	12%	92%	50%	33%	4%	81%	39%	20%
WY 2002	14%	97%	53%	34%	5%	94%	41%	21%
WY 2003	12%	96%	23%	30%	5%	93%	12%	20%
WY 2004	12%	97%	51%	32%	5%	93%	38%	20%
WY 2005	10%	76%	46%	29%	2%	70%	32%	14%
WY 2006	8%	93%	30%	26%	1%	64%	27%	12%
WY 2007	9%	103%	46%	28%	3%	86%	29%	14%
WY 2008	9%	96%	42%	21%	2%	78%	27%	11%
Project Averages	11%	96%	44%	33%	2%	71%	28%	17%

Sources of Data:

Pre-Project Data:

CVRWQCB, February 1998. Loads of Salt, Boron, and Selenium in the Grassland Watershed and Lower San Joaquin River, October 1985 to September 1995; Volume I: Load Calculations. Table 16.

CVRWQCB, December 1998. Agricultural Drainage Contribution to Water Quality in the Grassland Watershed of Western Merced County, California: October 1995 - September 1997 (Water Years 1996 and 1997). Table 20

GBP Data:

San Francisco Estuary Institute, May 2008. Grassland Bypass Project 2004-2005 Report

San Francisco Estuary Institute, April 2009. Grassland Bypass Project Monthly Reports Jan 2005 - Dec 2009.

(1) Water Year: October - September

(2) Concentrations and loads calculated from data for GBP Site A

COMMENT LETTER

San Joaquin Raptor Rescue Center (and Others) (SJRRC)

---oOo---

REPORTER'S TRANSCRIPT OF

GRASSLAND BYPASS PROJECT, 2010-2019,

FRESNO AND MERCED COUNTIES, CA

PUBLIC COMMENTS FOR DRAFT ENVIRONMENTAL IMPACT REPORT

---oOo---

DATE:	Monday, February 10, 2009
TIME:	2:10 p.m.
LOCATION:	San Joaquin River Exchange Contractors Water Authority 541 H Street Los Banos, CA 93635
REPORTED BY:	Peter D. Torreano, CSR, CRR Certified Shorthand Reporter License Number C-7623

A P P E A R A N C E S:

San Luis & Delta-Mendota Water Authority
By: JOESPH C. McGAHAN, Drainage Coordinator
Post Office Box 2157
Los Banos, CA 93635

Entrix
By: SUSAN HOOTKINS, Senior Planner
shootkins@entrix.com
2300 Clayton Road
Suite 200
Concord, CA 94520
(925) 935-9920

Also present:

Dennis Falaschi
Jose Faria
Bill Hatch
Lydia Miller
Jeff Bryant
Rudy Schnagl
David Cory
Maureen McCorry
Gail Cismowski
Phil McMurray
Charyce Hatler
M. Chris Eacock

Los Banos, California February 10, 2009

P R O C E E D I N G S

(Whereupon, after a presentation not herein reported, the following proceedings were held:)

MS. HOOTKINS: What we'll do at this point is open it up for public comment and I'll just call on people. And if you could come towards the front and be sure that you spell your name for Peter we'll go ahead and get started.

Does anybody want to comment today?

MS. MILLER: I do.

MR. McGAHAN: Okay.

MS. MILLER: I have some questions actually. Can I sit?

MR. McGAHAN: Sure.

MS. MILLER: Okay. Lydia Miller. San Joaquin Raptor Rescue Center, Protect Our Water, Merced, California.

I had a couple of questions in the area of wildlife. In relationship to the hazing programs, that seems to be a problematic, I guess, use. Are there any other type of alternatives being offered as far as hazing or discouraging wildlife from foraging-nesting? SJRRC-1

MR. McGAHAN: Yeah, you bet. The area -- water is conveyed currently, or at least it was before

we took it over, in open drains and this water is high in selenium. So it's an exposure opportunity.

We found through our monitoring that that was a way that birds could get exposed to selenium. And so we then embarked on a program to discourage that in several ways. We started out by netting because we needed to do something right away. We figured out which drains we didn't need actually -- well, two things going on.

The ones we needed we actually initially netted and some of them are still netted out there. So that prevents exposure. Some of the ones we didn't need we closed, actually closed the drains, closed them as there is no water, there is no exposure. And then currently we're in the process of piping those that we do need. So the netting was temporary. We're piping and, again, it reduces exposure.

So those are -- you know, those are our primary hard things that we're planning to do.

Hazing will still be necessary because there are, you know, just some areas that are open. When we irrigate our fields we do flood irrigate. We pull the water off at the end so it doesn't stand, but during the time you're irrigating there is some water there and so we can -- we haze, we'll continue to haze.

MR. FALASCHI: Hey, Joe. Let me respond to that, too.

I'm Dennis Falaschi, general manager of Panoche Drainage District. We operate the reuse area.

The most important thing really for us as a mitigation on that site is to eventually get all of those open drains piped. That's our goal. The problem we have now is funding. You know, we just -- we don't have the funds to pipeline those open drains. So in the interim we are doing some netting. We have done some netting. That's a temporary measure.

Hazing is probably the least effective thing we can do. Birds get used to hazing. You pop a gun. They fly 500 feet and land. So we only do that as kind of a -- we're doing that now as kind of a recommendation from Fish and Wildlife Service, but, you know, the real goal is as aggressively as we can either enclose or pipeline those drains.

MS. MILLER: Okay.

MR. McGAHAN: And we do have the mitigation, also, as a part of that. We take land outside of our reuse area and we pond with fresh water, develop some islands that we wouldn't normally do and so that there is an opportunity for birds to go there. Like I said, last year we had six pair on our 6,000 acres. This

takes 45 minutes to drive from one side to the other and there were only six pairs and they really weren't on our project. In our mitigation area we had like 15 pair.

MS. MILLER: I guess that takes me to my next question, which is how does -- how do you assure wildlife connectivity, movement? Because you're -- that is a large amount of area. So is there assurance? Are you discouraging all wildlife movement?

SJRRC-2

MR. McGAHAN: Like?

MS. MILLER: A kit fox.

MR. EACOCK: Kit fox.

MR. McGAHAN: I didn't mention it, but because we're -- this is a federal project, it requires a biological opinion by Fish and Wildlife Service. And so there is a -- there is a separate process to do that and certainly they are concerned about kit fox, which, by the way, we've done surveys out here and never found kit fox, although it is -- could be a habitat for kit fox -- we don't think there are any out there -- as well as giant garter snake. We also have done surveys for giant garter snake and haven't found any, although the habitat could be susceptible to that.

So there will be, you know, measures in this

biological opinion that will assure that we're not doing anything to hinder, I think what you're saying, the connectivity, the ability for them to roam around, if they are out there.

MS. MILLER: Is the biological opinion going to be part of the EIR? Is that going to be made available or is that going to come after the process?

MS. HOOTKINS: Reclamation is preparing to be biological.

MS. MILLER: Will we be able to see it within the context of this responding time?

MR. McGAHAN: They will be available by March 23rd.

MR. EACOCK: It will be finished before the record of decision.

MR. McGAHAN: Yeah, right.

MS. MILLER: Would that be made available online?

MR. McGAHAN: You can look it up, I'm sure.

MR. EACOCK: Joe, would you just mention the biological monitoring that you do routinely.

MR. McGAHAN: Sure. We do have a monitoring component now and will continue that where we -- we monitor egg levels for various things, selenium and boron, and we have instigated a tiered contaminant

monitoring program where we take mice to see if there are levels of concern, and we're just in the middle stage of that.

If the mice show their level of concern, we might go up to the next level which probably would be a coyote and do sampling on a coyote. So we do have a significant two-component program going on. As well whenever we do construction we have to abide by the garter snake compliance, the avoidance measures which we also do and which were the reason we did some surveys out there for garter snake.

MS. MILLER: Okay. Creation -- you were talking about -- I assume you were talking about creation. The mitigation that you're talking about is creation, you're creating islands. Are you talking about restoration where you're going to go in and you're going to redo -- you know, redo some type of wetlands that has been impacted?

MR. McGAHAN: No. We do have mitigation -- there's two kinds of mitigation I talked about. One of them we're actually going to mitigate for the footprint of Mud Slough. So this will be to go into current state and federal refuge land on land that's not wetlands now, it's basically open land, and create wetlands of an area equal to the footprint of mud

slough.

So that's one thing. And the other thing on these mitigation islands, that's a separate thing. Near our reuse area is to develop these mitigation islands with fresh water. And so that's on land that's not a wetland currently. So it's new land.

MS. MILLER: But was it historically wetland?

MR. McGAHAN: No, it's farmed, farmed. See, currently we're doing it in rice fields. There are some rice fields down there outside of our project area that, you know -- rice fields are flooded during the summertime. The rice grows up through the water. We put in islands in those rice fields so the birds could kind of attract there.

MS. MILLER: So with this offsite mitigation, would that become some type of an easement to cover that we'd be assured that there won't be impacts to it down the line?

MR. McGAHAN: Well, it's required under our project and so, you know, the state and federal permits we have for our project will require us to do that. So it's up to them -- you know, the oversight would be by the federal and state agencies.

MS. MILLER: So that we're not --

MS. HOOTKINS: Fish and Wildlife and Fish and

Game.

MS. MILLER: So there's not at this point any type of discussion of putting easements on it for conservation easements?

MR. McGAHAN: No.

MR. FALASCHI: You might, for instance, go from one site completely to a different site in 50 years. So it may be in our best interests not to have the easements in any one place because we may want to move that site around.

The farmer may change his mind. He may say, "I'm not going to plant rice there this year. So you have to move your mitigation site somewhere else."

MS. HOOTKINS: We'll take your questions and then elaborate on the response, you know, in writing when we've got all the folks that are involved in the project weighing in.

MS. MILLER: It's such a smaller group. I thought, you know --

MS. HOOTKINS: It's okay.

MS. MILLER: Okay. Well, then I'll --

MS. HOOTKINS: And there is information on this in the EIR. It's in the project description and in section 6.

MS. MILLER: I was kind of confused, though,

because it's not clear on some of my points in there. Okay.

MS. HOOTKINS: Okay.

MS. MILLER: Okay. I have some other questions is that -- let me see. The reuse area, I'd certainly like to know where the crops are going to. Are they for human consumption, are they for feed or are they going fallow? And what happens if they do exceed a certain safety level? How are they treated? Are they disked under or how are they eliminated? SJRRC-3

The other question I have is the incentive fee, who's monitoring that, collecting that, and also what if -- there needs to be timelines that those incentive fees have to be used so that they are not banked and not utilized. SJRRC-4

A question as far as how this project -- is it in the county's enterprise zone? Are there areas that the county has identified and it's going through that right now, enterprise zones for commercial use. They are scattered all in the rural areas of Merced County and so how -- how -- if a commercial zone is in this area, how would it be impacted? SJRRC-5

Let me see. The other question I have is how is new town's runoff? How is that going to be affected versus ranchettes? We have out in these areas a lot of SJRRC-6

ranchettes going in and land use changes. And so have any -- that's very difficult to -- to control that water on top.

So are there assureties that a ranchette isn't going to go out into these areas?

MR. McGAHAN: By a ranchette you mean multiple houses or just a single house --

MS. MILLER: It could be.

MR. McGAHAN: -- or just a single house?

MS. MILLER: Could be.

MR. McGAHAN: You know, typically if you're talking about a storm water runoff from housing is just not a -- not a problem.

MS. MILLER: Okay. How about commercial then?

MR. McGAHAN: There are some commercial sites within our prime ag area, but they are large and I'm sure they have their own storm water retention system.

Don't they?

MR. FALASCHI: Yeah, we --

MR. McGAHAN: Ponds that that storm water goes to?

MR. FALASCHI: Do you want me to answer those questions?

MS. MILLER: No, you don't have to.

SJRRC-6

MS. HOOTKINS: That's something we'll took into.

MS. MILLER: That's okay. And I think that's about it. I just have a few questions. I guess the other is our concern -- let me see. Well, I guess our other concern is that this -- is that there's a mechanism for -- and, again, I haven't looked at this. I did go online and I went through it quickly and we followed this over the years, but 2019 seems like an awful long time.

SJRRC-7

There certainly seems to need to be another level of public review and agency review. That's a long time.

MR. McGAHAN: Yes. There actually are some interim products that are required that are public products. So there is some of that built in with these stakeholders, but as I -- you know, the loads we -- the amount we can discharge is -- restricts so much in the future that, yes, it's a ten-year project, but practically it's much less than that.

MS. MILLER: Okay. And if I can just have the CD. If we can have a couple of CDs, that would be great.

Did you guys have any questions?

MR. FALASCHI: It's probably outside of this

forum, but --

MS. HOOTKINS: Anybody else going to take any today?

MR. FALASCHI: It's probably outside of this forum, but what I would like to offer as one of the representatives of the Grassland Bypass project is that anybody that wants to come and have a look-see and a tour, I'll leave my cards here and you're certainly welcome to contact me. And a lot of the questions that you're asking I think you could get answered just if you see the project.

MS. MILLER: Okay.

MR. FALASCHI: This is outside probably the scope of it, but we would offer that.

MS. MILLER: Terrific. Thank you.

MS. HOOTKINS: And, Dennis, you gave your name. Spell it, please.

MR. FALASCHI: F-A-L-A-S-C-H-I.

MS. HOOTKINS: Okay. Anyone else?

MR. EACOCK. One other sort of follow-up comment that really didn't come up in the presentation is that there is an ongoing monitoring program that's conducted by Reclamation, Geological Survey, Fish and Wildlife Service, Fish and Game, the regional board that are keeping track of day-to-day operations in the

wetlands and in the river and that covers all sorts of parameters of water quality, even biological features.

There are monthly data reports published. There are monthly goals and, you know, annual goals and, you know, occasional annual reports as well, you know, all these geniuses getting their act together. But there's a lot of information available, readily available on request. We can get you up to date, but there's an incredible amount of scrutiny being, you know, conducted on this project.

MS. MILLER: Okay. Thank you.

MS. HOOTKINS: Okay. Jose?

MR. FARIA: This is more of a --

MS. HOOTKINS: Name?

MR. FARIA: Jose Faria, Department of Water Resources.

Can we go back to that slide that shows the reduction water as you go through that that, please.

MS. HOOTKINS: The flowchart you mean?

MR. FARIA: The flow chart that you started to reuse and go down to 4,000 acre feet. There we go.

This is mostly something to think about, I guess, how this can be achieved, but one of the things that I think that could be done with this project is instead of taking the treatment of water at the end

SJRRC-8

point of 4,000 acre feet. The treatment plant could be placed before it gets into the reuse project, the San Joaquin River improvement project, because of the relationship between the salinity and the cost of treating the water.

If you can get the water -- as you mentioned before it's about 5,000 TDS and, if you start treating that water at the end point, it's going to cost a lost less to treat it, treating it at the end when it gets, you know, fifteen, twenty thousand TDS. And you'll find out the costs are much more affordable because it takes a lot less energy and because it's more affordable.

And with the current treatment technology you can -- I bet you can reclaim at least half of that water up front and reduce it for farming or whatever use you want. SJRRC-8

And you're still going to have -- if you use that 50 percent, the concentrated comes out of the process, you still can use it to irrigate crops in the reuse area and you have plenty of land to use this -- this water on those crops. And I bet that we'll reduce significantly the amount of water at the end of the year you'll have to treat there and the amount of selenium and salt loads.

So it's something to think about. Now that the body of the water is so high because of the drought, you know, farmers are paying up to 600, $700 an acre because of the situation. So I think it makes sense to start treating off water.

I would have said that five, six years ago, you know, it didn't make any sense, but now with the situation that we're having with drought, it makes sense to start reclaiming this brackish water. So it's food for thought.

SJRRC-8

MS. HATLER: I'm Charyce Hatler with the Department of Water Resources. I noticed on your last slide you talked about the decision process and you showed that for the EIR process you are were going to certify the document and then you had a slash and a record of decision for the federal.

They're actually going to certify it. San Luis & Delta Mendota Water Authority is going to say, yes, we think this is an adequate CEQA document and that's your certification, but when you go to make your decision, your approval on the project you're actually going to file a notice of determination with the state clearing house.

You have an NOD/ROD which would be your approval package, not a certification and an ROD.

SJRRC-9

Sometimes that gets skipped.

MS. HOOTKINS: Yeah. We just plumb missed it, yeah.

MR. EACOCK: Did we run out of letters?

MS. HOOTKINS: The concept was that typically Reclamation will wait on its record of decision until the CEQA process is done and they want to see that EIR certification before they then do the record of decision.

So the notice of determination, yes, that's part of the process, but it's not as critical to Reclamation. So that was why we did it that way. But good point, good point.

MS. HATLER: As long as you impose your statute of limitations on the NOD.

MS. HOOTKINS: Yeah. Okay? Any other additional comments?

MR. EACOCK: Do you have any idea what type of treatment process you will be investing in in the next five years?

MR. McGAHAN: Sure. We'd like to mention we have a pilot study that we've selected.

MR. FALASCHI: You've got one sitting right next to you right there. Jose is going to come on board. We're going to put his treatment facility up in

SJRRC-9

SJRRC-10

front of the 4,000 acre feet and make him perform.

MR. FARIA: Well, we're going to -- it's time to start putting in the practical --

MR. FALASCHI: Yeah, it is.

MR. FARIA: The amount of money that we're investing with UCLA and doing research.

MR. FALASCHI: That's right. They built us a pilot plan and we want to see them perform in the field. We're as excited as you are to see that coming into the field and they applied all they have been learning through the years how to treat this water properly.

MS. HOOTKINS: Okay. Are there any other formal comments here before I close the public hearing? Going once, going twice.

Okay. At this point the public hearing is closed. And some of us will continue to hang out here for any discussion.

MR. McGAHAN: Yes, we will.

MS. HOOTKINS: Okay. Thanks for coming, everyone.

(Whereupon, the proceedings concluded at 2:31 p.m.)

---oOo---

CERTIFICATE OF REPORTER

I, PETER TORREANO, a Certified Shorthand Reporter in and for the State of California, certify that the foregoing is a full, true and correct transcript of the Grassland Bypass Project Public Comments for Draft Environmental Impact Report held on February 10, 2009, reported to the best of my ability and transcribed under my direction.

_____, 2009 _____
Date PETER TORREANO, CSR 7623

RESPONSE SJRRC

San Joaquin Raptor Rescue Center (and Others)
Public Hearing Transcript February 10, 2009

SJRRC-1 *Lydia Miller, San Joaquin Raptor Rescue Center*
The response is contained on pages 3-5 of the transcript. In summary, the methods used to reduce exposure of birds to selenium are netting over the drains, closure of unneeded drains, piping of open drains, and hazing. The goal is to pipeline all open drains. We also develop islands outside of the reuse area for bird habitat as mitigation.

SJRRC-2 *Lydia Miller, San Joaquin Raptor Rescue Center*
The comment was how to ensure wildlife connectivity across the Grassland Drainage Area and SJRIP. The Proposed Project will follow established protocols for dealing with listed species like San Joaquin kit fox and giant garter snakes. The Project will not discourage the movement of wildlife across the Project Area. However, the Project will reduce wildlife exposure to agricultural drain water and eliminate contamination from the GDA in the Grasslands water supply channels.

SJRRC-3 *Lydia Miller, San Joaquin Raptor Rescue Center*
Concerning the crops grown at the reuse area, some are used for animal feed (wheat grass) and some could be used for human consumption (pistachios). None of the crops contain selenium in excess of what is safe for consumption by humans and animals.

SJRRC-4 *Lydia Miller, San Joaquin Raptor Rescue Center*
Concerning the incentive fee, the monitoring and collection of fees is by Reclamation as outlined in the Use Agreement in Section IV (Appendix A).

SJRRC-5 *Lydia Miller, San Joaquin Raptor Rescue Center*
The GBP is not located in Merced County's enterprise zone for commercial use.

SJRRC-6 *Lydia Miller, San Joaquin Raptor Rescue Center*
The GBP would not produce storm water runoff that would affect ranchette or new town development. The reuse area is located in an agricultural area planned for agriculture and is not adjacent to lands proposed development. Commercial sites within the larger agricultural area would have their own storm water management systems.

SJRRC-7 *Lydia Miller, San Joaquin Raptor Rescue Center*
Besides the Final EIS/EIR, there are interim products for public review (monitoring reports) that will be placed on the Grassland Bypass Project web page maintained by Reclamation: www.usbr.gov/mp/grassland.

SJRRC-8 *Jose Faria, Department of Water Resources*
Comment regarding water reclamation is noted, and Mr. McGahan will follow up with Mr. Faria.

SJRRC-9 *Charyce Hatler, Department of Water Resources*
The question was answered during the meeting. The slide was overly abbreviated. The Notice of Determination is part of the CEQA process. Reclamation usually waits for EIR certification and the NOD to be completed before it completes its Record of Decision (ROD).

SJRRC-10 *Chris Eacock, Bureau of Reclamation, SSCAO*
Concerning the comment about treatment process, a pilot study using the concept explained by Mr. Faria will be conducted.

COMMENT LETTER

The Bay Institute (TBI)

By email and hardcopy

February 19, 2009

Joseph McGahan
San Luis & Delta-Mendota
Water Authority
P.O. Box 2157
Los Banos, CA
93635

Judi Tapia
U.S. Bureau of Reclamation
South-Central California Area Office
1243 N St.
Fresno, CA
93721

RE: GRASSLANDS EXTENSION DRAFT EIS/R

Dear Ms. Tapia and Mr. McGahan,

This letter is submitted as the comments of the Bay Institute (TBI) regarding the December 2008 draft Environmental Impact Statement/Report (DEIS/R) for the continuation of the Grasslands Bypass Project (GBP), 2010 – 2019. These comments are specifically focused on potential impacts to migratory salmon and steelhead that are likely to occur as a resulting of extending the GBP to 2019.

As you know, TBI has been involved in the development of all of the GBP Use Agreements, including the proposed new Agreement to continue through 2019, and has supported the efforts of the Grasslands dischargers to reduce and ultimately eliminate selenium loading to the San Joaquin River. We continue to support these efforts. However, we have only recently become aware of new information developed by the U.S. Fish and Wildlife Service on the impacts of selenium on cold water fish like salmon and steelhead. The Service's analysis

TBI-1

strongly suggests that the GBP will cause a significant environmental impact on salmon and steelhead, an impact that is not analyzed in the DEIS/EIR. We therefore request that further analysis of this data be prepared and incorporated into a revised EIS/EIR, and if the data shows that a significant impact will result, that additional mitigation measures be required to reduce this impact to a less than significant level. TBI-1

As the DEIS/EIR notes, steelhead and Chinook salmon are found in the San Joaquin River system downstream of the Hills Ferry Barrier, including at Crows Landing, and steelhead may enter the project area from January to June. DEIS/EIR at 6-21, 6-26; *see also* presentation by NMFS to the State Water Resources Control Board dated September 17, 2008, available online at http://www.waterrights.ca.gov/baydelta/docs/sanjoaquinriverflow/noaapresentation.pdf (as many as 38 steelhead caught in the Mossdale trawl). Moreover, the EIS/EIR does not acknowledge, in the cumulative effects analysis, that the San Joaquin River Restoration Program will reintroduce spring run Chinook salmon to the San Joaquin River starting in 2012. Chinook salmon and steelhead are currently found in the project area (primarily between Crows Landing and the Hills Ferry Barrier), are listed species protected under the federal Endangered Species Act, and are likely to be found throughout the San Joaquin River in a few years. Because the effects of the project are measurable downstream, the project has the potential to affect these listed species, both at present and after the re-establishment of spring run Chinook salmon. We are particularly concerned regarding impacts to reintroduced spring run prior to the period starting in 2014 when flow releases from Friant Dam begin in full. TBI-2

The DEIS/EIR provides little analysis of the effects of the project on cold water fish like steelhead, salmon, and trout. Indeed, the ecological risk guidelines for selenium used in the body of the EIS/EIR do not include cold water fish. *See* DEIS/EIR at 6-26. In the Appendix, the DEIS/EIR assumes a toxicity threshold (EC_{10}) of 9 mg/kg for coldwater fish, but acknowledges that "this threshold may not fully protect sensitive cold water species" because the analysis that generated this standard disregarded mortality data and did not incorporate reproductive impairment. DEIS/EIR Appendix E.2-4. TBI-3

William Beckon of the U.S. Fish and Wildlife Service has reanalyzed the data on which the 1990 standard was based, and calculated that the LC_{10} for Chinook salmon (the level causing 10% mortality) and other cold water fish should be 1.84 mg/kg. *See* Attachment 1. Beckon's study suggests that this body tissue concentration equates to selenium concentrations in water of 3.3 g/kL in the San TBI-4

Joaquin River. *Id*. The information in the DEIS/EIR indicates that the project is likely to result in selenium concentrations that exceed this level for potentially significant durations. *See* DEIS/EIR at 6-41; Appendix C-43 to C-56; *see also* Attachment 2. As seen in the data covering the 2012 – 2014 period excerpted in Attachment 2, selenium concentrations at Crows Landing (Station N) would be expected to exceed the 3.3 g/kL threshold on several occasions. However, it is important to remember that Station N selenium concentrations have been diluted by Merced River inflows. Selenium concentrations in the water column in the three miles upstream of the Merced – a water column almost entirely composed of the GBP discharges and other agricultural return flows – can be expected to be approximately twice as high as those predicted at Station N. If Station N concentrations represent approximately half of the concentrations expected upstream of the Merced, then exceedances of the selenium threshold for cold water fish would be expected to occur frequently. The portion of the river between Mud Slough and the Merced confluence could be highly toxic to migrating salmonids.

TBI-4

TBI-5

This new information strongly suggests that the project as currently designed may cause significant mortality of Chinook salmon and steelhead. This impact was not adequately analyzed in the DEIS/EIR, and additional modeling and studies should be done to evaluate the magnitude of the impact (e.g., lag times and bioaccumulation rates based on the duration of salmon and steelhead in the river) and mitigation measures to reduce this impact to a less than significant level. Mitigation measures could include such actions as improving flow conditions in the mainstem San Joaquin River; improving physical channel conditions and riparian habitat; and/or modifying selenium load limits.

TBI-6

This new information also suggests the importance of collecting more accurate data on selenium concentrations in the San Joaquin River upstream of the Merced confluence. The DEIS/R states that Station N "represents the downstream extent of the Project Area and represents conditions that salmon and steelhead might encounter during their migrations through the San Joaquin River." DEIS/R at 6-25. Given the influence of the Merced River on selenium concentrations at Station N and the pending reintroduction of Chinook salmon to the mainstem above the Merced, this is clearly not the case. The DEIS/R should be revised to use data collected on a weekly basis by the Central Valley Regional Water Quality Control Board from Station H at Hills Ferry on the San Joaquin upstream of the Merced to better evaluate the potential water quality impacts of continuing the GDP to 2019. Reinstatement of the use of Station H as a water quality monitoring station for implementation of the continued use of the GBP

TBI-7

should also be evaluated. The GBP stopped monitoring regularly at this site after October 1999. TBI-7

Thank you for considering these comments regarding the DEIS/R. We look forward to working with the parties to the GBP Use Agreements to ensure that this worthwhile effort does not adversely affect our precious – and vulnerable – cold water fishery resources. Please contact me at 415-878-2929 x 25 or bobker@bay.org if you have any questions.

Sincerely,

Gary Bobker
Program Director

Attachment 1: William Beckon, USFWS. Toxicity of Selenium to Salmonids. PowerPoint presentation at CALFED Science Conference, October 2008.

Attachment 2: Excerpted data from DEIS/R Appendix 3 and field data

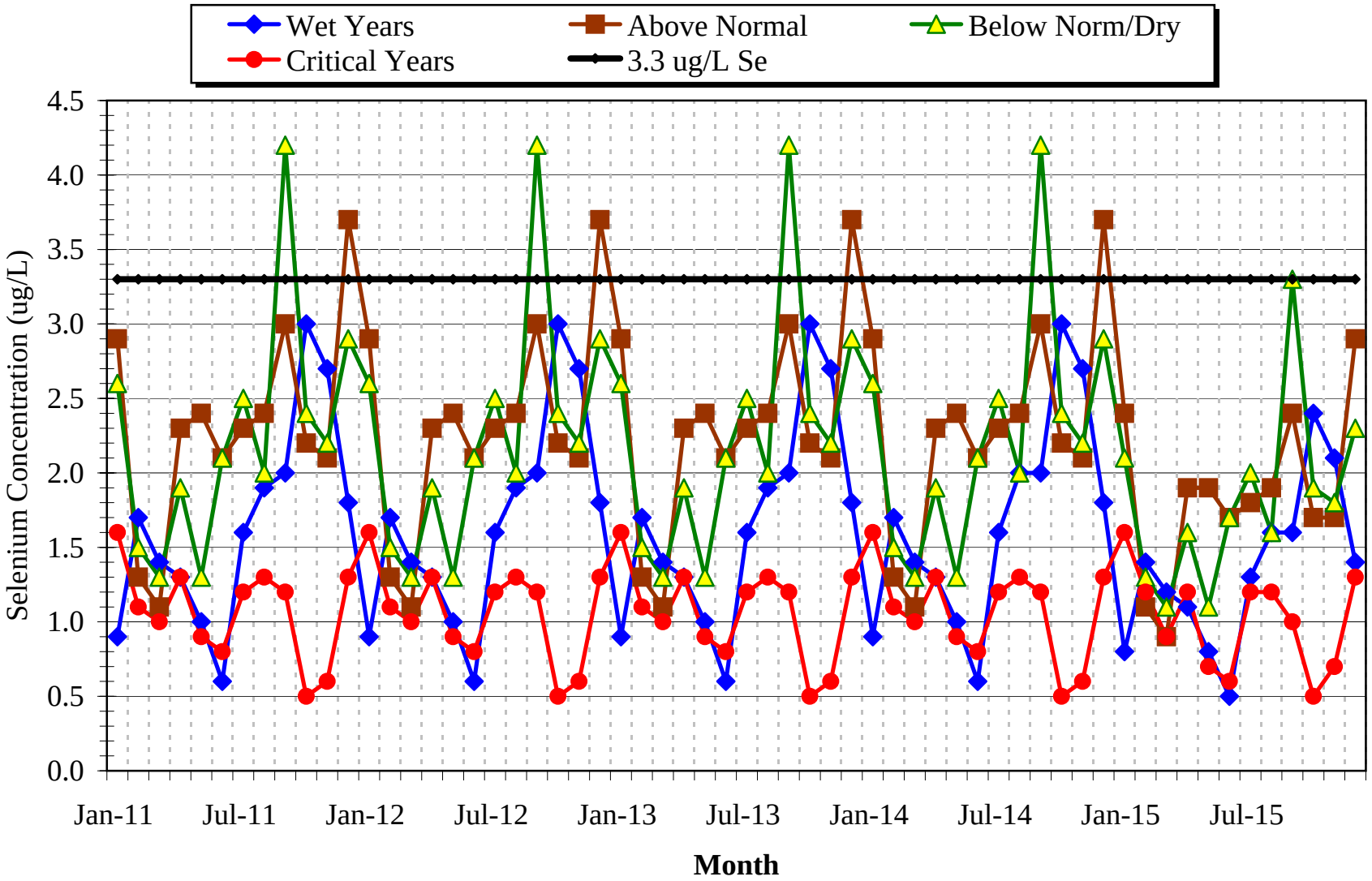
cc: William Beckon, U.S. Fish and Wildlife Service
Douglas Hampton, National Marine Fisheries Service
Terry Young

Modeled Selenium Concentrations (ug/l)
San Joaquin River at Crows Landing (Station N in Draft EIR/EIS)

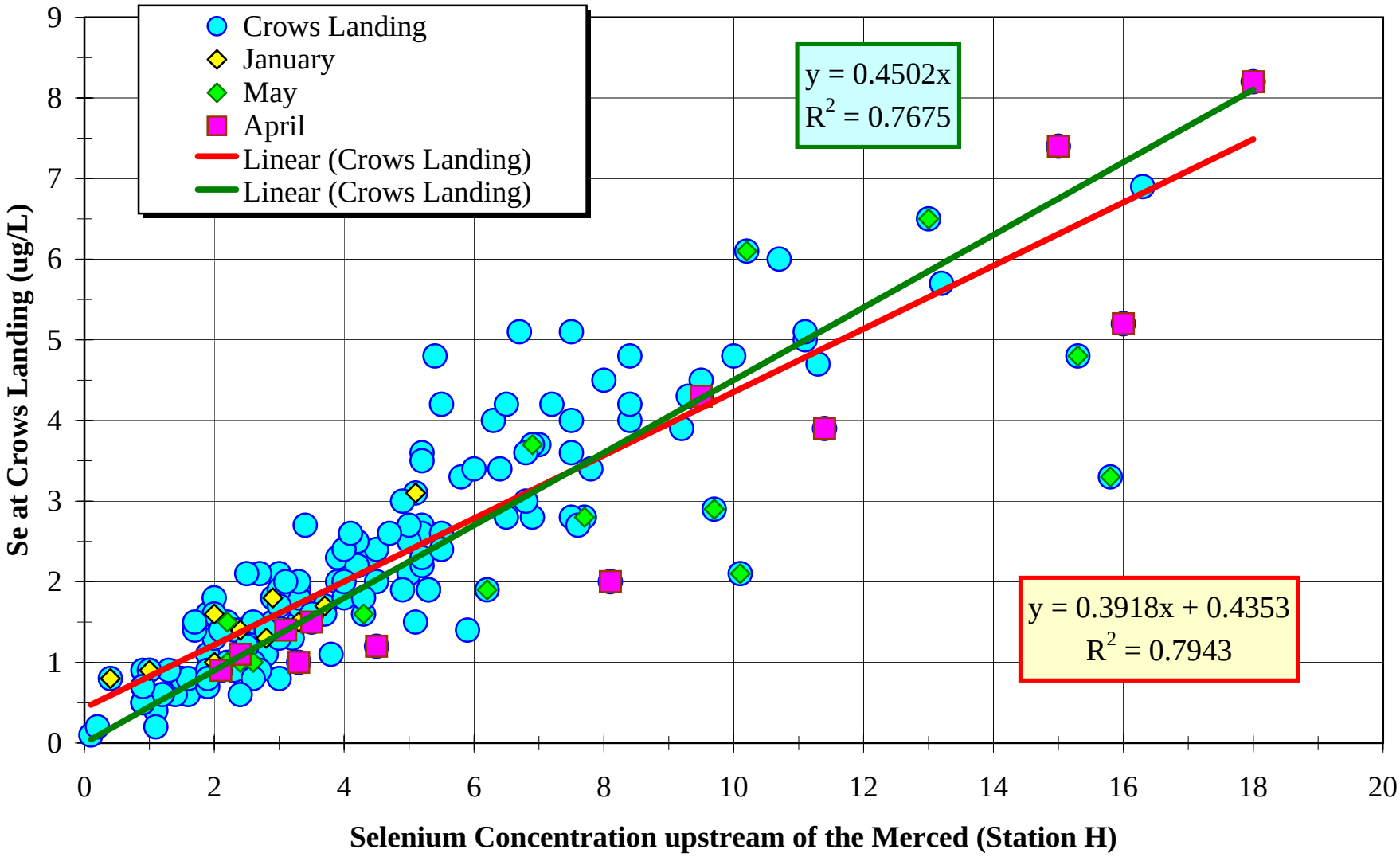
	Wet	A Norm	BN/Dry	Crit
Month	Station N	Station N	Station N	Station N
Jan-12	0.9	2.9	2.6	1.6
Feb-12	1.7	1.3	1.5	1.1
Mar-12	1.4	1.1	1.3	1.0
Apr-12	1.3	2.3	1.9	1.3
May-12	1.0	2.4	1.3	0.9
Jun-12	0.6	2.1	2.1	0.8
Jul-12	1.6	2.3	2.5	1.2
Aug-12	1.9	2.4	2.0	1.3
Sep-12	2.0	3.0	**4.2**	1.2
Oct-12	3.0	2.2	2.4	0.5
Nov-12	2.7	2.1	2.2	0.6
Dec-12	1.8	**3.7**	2.9	1.3
Jan-13	0.9	2.9	2.6	1.6
Feb-13	1.7	1.3	1.5	1.1
Mar-13	1.4	1.1	1.3	1.0
Apr-13	1.3	2.3	1.9	1.3
May-13	1.0	2.4	1.3	0.9
Jun-13	0.6	2.1	2.1	0.8
Jul-13	1.6	2.3	2.5	1.2
Aug-13	1.9	2.4	2.0	1.3
Sep-13	2.0	3.0	**4.2**	1.2
Oct-13	3.0	2.2	2.4	0.5
Nov-13	2.7	2.1	2.2	0.6
Dec-13	1.8	**3.7**	2.9	1.3
Jan-14	0.9	2.9	2.6	1.6
Feb-14	1.7	1.3	1.5	1.1
Mar-14	1.4	1.1	1.3	1.0
Apr-14	1.3	2.3	1.9	1.3
May-14	1.0	2.4	1.3	0.9
Jun-14	0.6	2.1	2.1	0.8
Jul-14	1.6	2.3	2.5	1.2
Aug-14	2.0	2.4	2.0	1.3
Sep-14	2.0	3.0	**4.2**	1.2
Oct-14	3.0	2.2	2.4	0.5
Nov-14	2.7	2.1	2.2	0.6
Dec-14	1.8	**3.7**	2.9	1.3

Data from Appendix C, Tables C-33 through C-36
Draft EIS/EIR, December 2008

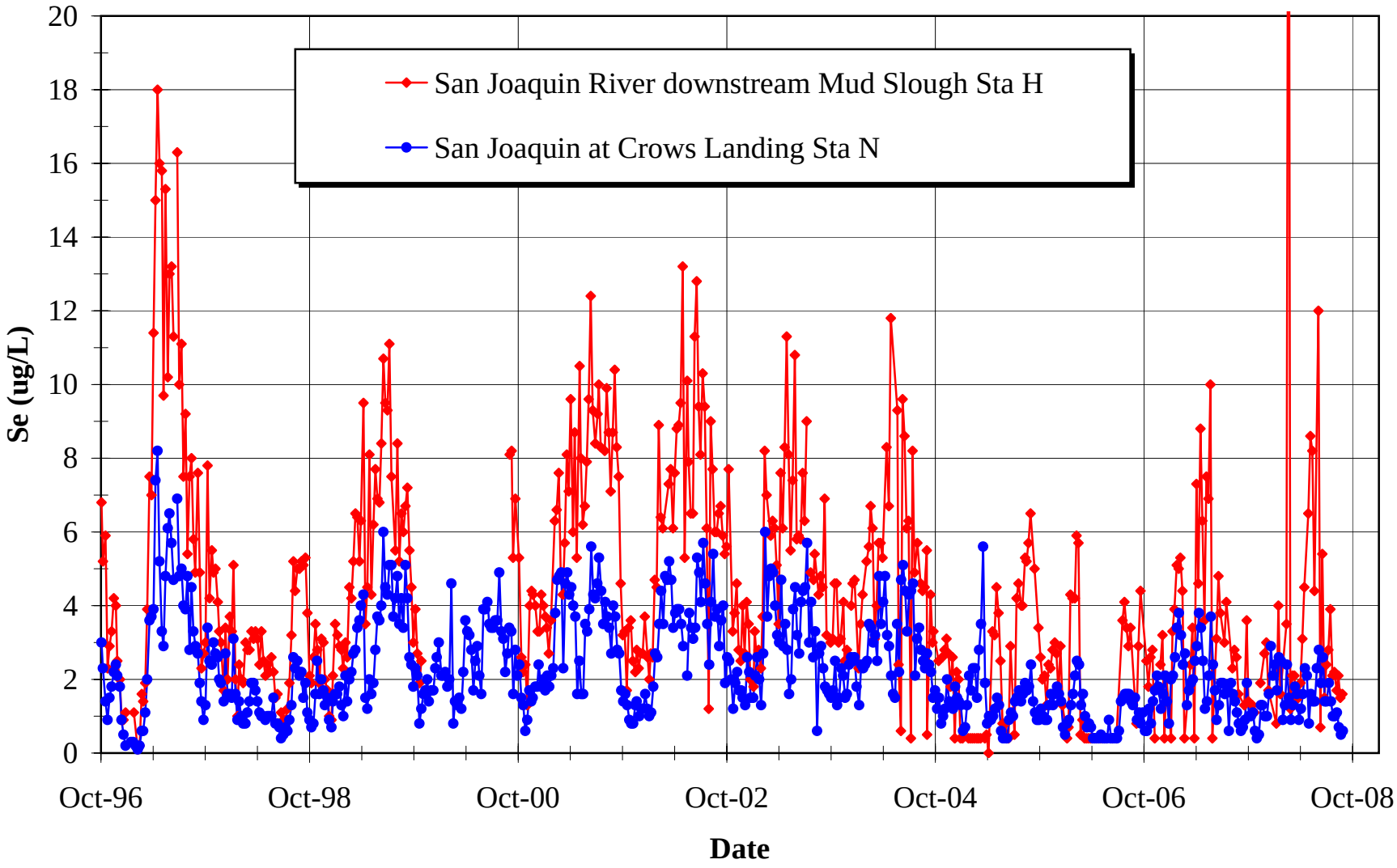
Modeled Crows Landing Selenium Concentrations



Actual Measured Selenium Concentrations (SFEI Data)



Actual Measured Selenium Concentrations (SFEI Data)



Actual Measured Selenium Concentrations (SFEI Data)

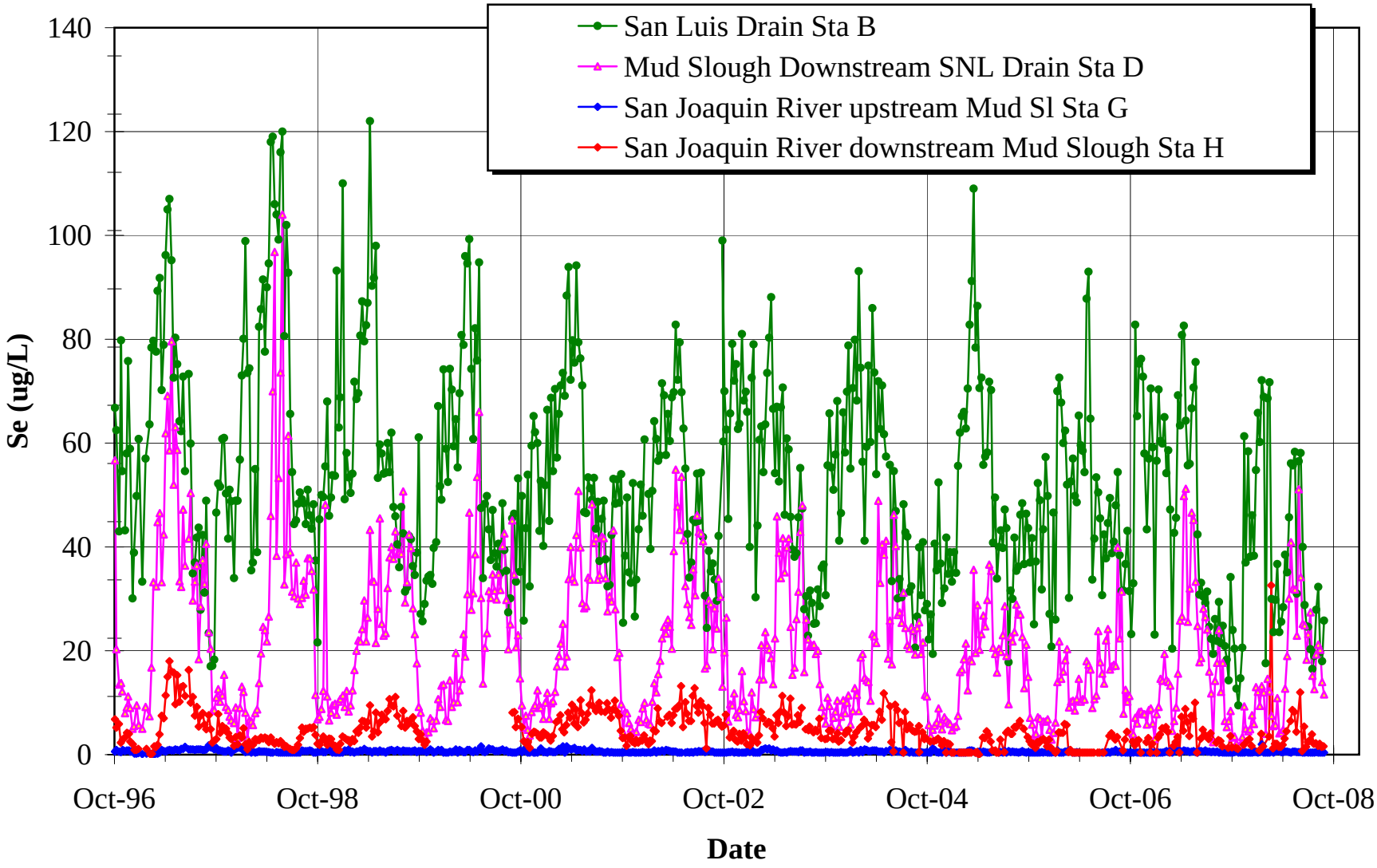


Figure 1. Map of the Grassland Bypass Project

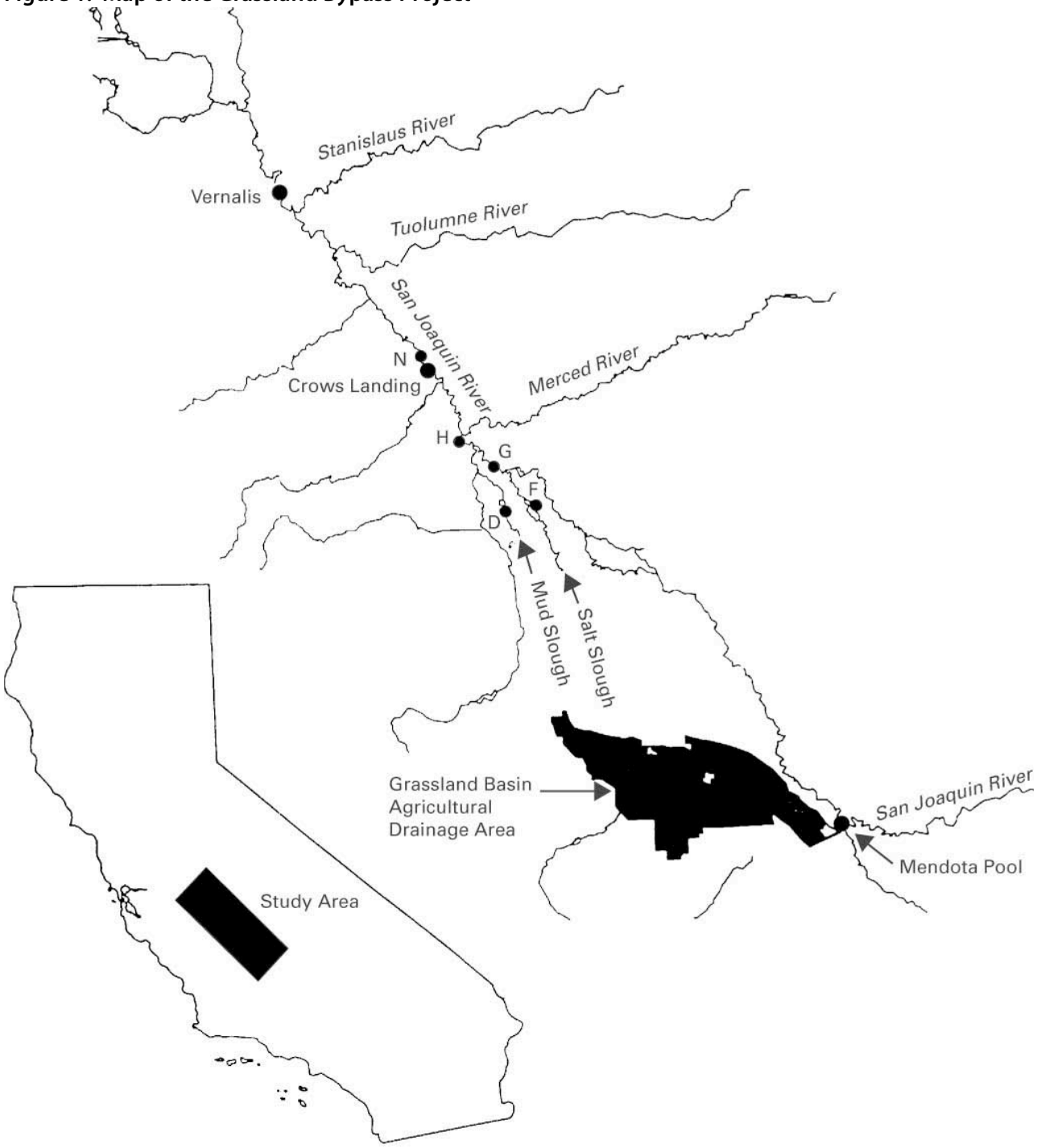
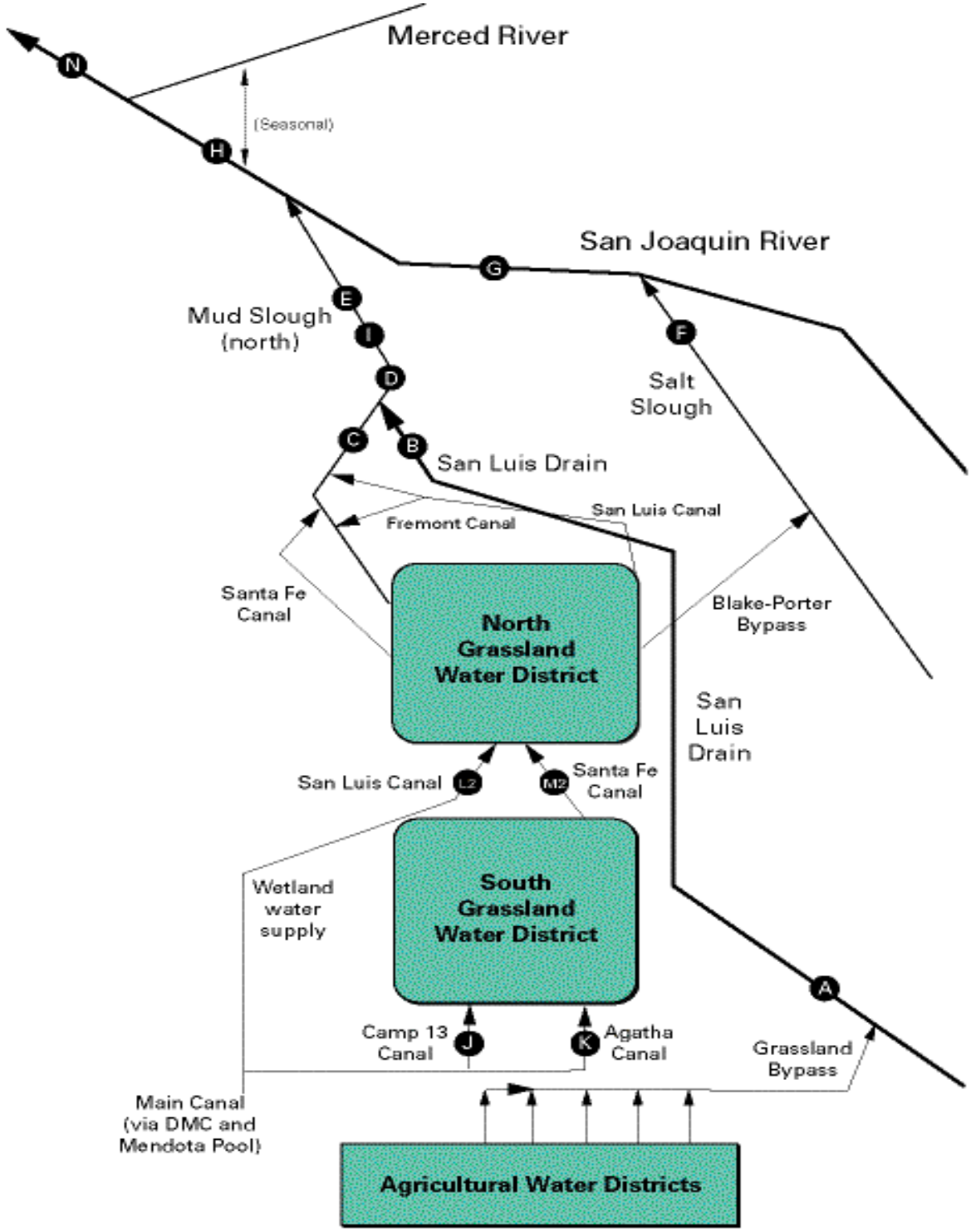


Figure 2. Grassland Bypass Project - Schematic Diagram Showing Locations of GBP Monitoring Sites Relative to Major Hydrologic Features of the Study Area



This Page Intentionally Left Blank

RESPONSE TBI

The Bay Institute
Gary Bobker, Program Director February 19, 2009

TBI-1
These comments on potential impacts to salmon and steelhead and other comments are similar to or consistent with comments raised by the USFWS. Therefore, see responses to their comment letter of March 23, 2009, in particular USFWS-10.

TBI-2
Comment noted and considered. See response USFWS-10.

TBI-3
Comment noted and considered. See response USFWS-10.

TBI-4
Comment noted and considered. See response USFWS-10.

TBI-5
Comment noted and considered. See response USFWS-10.

TBI-6
Comment noted and considered. See response USFWS-10.

TBI-7
See response USFWS-10. Site H data are already included in Section 4 and are used in the analysis done in response to USFWS comment 10 and comments from The Bay Institute.

This Page Intentionally Left Blank