From: John Kessler
To: Docket Optical System
CC: Angela Hockaday; Ken Celli; Robert Worl
Date: 10/24/2008 4:21 PM
Subject: Fwd: Sentinel - Staff's proposed revisions to the Soil & Water COCs
Attachments: Sentinel Water COC edits by staff (10-24-08).doc

Dear Docket Staff:

Could you please docket this email and the attached file as one document to Sentinel (07-AFC-3) and include the phrase in the file name, "Staff's Proposed Revisions to the Sentinel FSA Soil & Water Conditions".

We will distribute this to the POS on Monday, unless someone can do so electronically today.

Thank you,

John

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>>> John Kessler 10/24/2008 4:13 PM >>>
Hello All:

As we indicated at the Prehearing Conference on Monday, October 21st, we are providing our proposed revisions to the Sentinel FSA Soil & Water Conditions of Certification. We plan to include these in our filing of Additional Testimony on Monday, October 27th, and would welcome any comments you may have by Noon on Monday.

Thank you,

John

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CPV SENTINEL ENERGY PROJECT (07-AFC-3)

Energy Commission Staff's Proposed Revisions to the Soil and Water Conditions of Certification

PROJECT GROUNDWATER USE

SOIL&WATER-8: The CPV Sentinel project shall use groundwater produced by the on-site wells identified in **SOIL&WATER-3** for all non-potable plant construction and process uses during operation including cooling and landscape irrigation.

a. Prior to the use of groundwater for commercial operation, the project owner shall install and maintain metering devices as part of the water supply and distribution system to document project process water use as required to monitor and record in hundreds of cubic feet per month the total volume(s) of water supplied to the CPV Sentinel project from this water source. The metering devices shall be operational for the life of the project. Each ~~of the five wells~~ well to be constructed will be metered separately or provisions will be made to ensure water use from each well can be identified and documented.

b. The amount of groundwater that can be used for project process needs shall be limited as follows:

   1. No more than 1,100 acre-feet may be consumed in any calendar year; and

   2. In any given month, the amount of water that may be consumed is the total amount of water that has been recharged (pursuant to **SOIL&WATER-10**) ~~25~~ 16 months or more prior to that month, minus the cumulative amount of water previously pumped for project process needs since the commercial operation date.

c. The project owner shall submit to the CPM an annual summary of daily groundwater use for project process needs, including monthly subtotals and an accumulation of all project groundwater use since the commercial operation date, and the accumulation of groundwater recharged in accordance with **SOIL&WATER-10.**

d. If insufficient water has been recharged for project process needs pursuant to **SOIL&WATER-10**, the project shall not operate, unless the CPM determines that:

   1) circumstances beyond the project owner's control have temporarily prevented delivery of water purchased for project process needs to Desert Water Agency's spreading grounds; and

2) implementation of conservation measures in the Mission Creek Sub-basin pursuant to SOIL&WATER-15 has resulted in conservation of water in an amount equal to or greater than that proposed to be used for project process needs 16 months or more in advance of the month in which it is to be used for project process needs.

The period of time during which conserved water may be used to meet the requirements of this condition is limited to the duration of when water delivery was precluded by circumstances beyond the project owner's control.

Verification: The project owner shall prepare an annual summary, which will include identification of the well or wells used, daily groundwater usage in gallons per day, maximum and minimum daily usage ~~in~~ for each month~~,~~ and annually, and total volume of groundwater used on a monthly and annual basis in acre-feet. For years subsequent to the initial year of operation, the annual summary will also include the yearly maximum and minimum and yearly average water use by source. Calculations shall be performed on a calendar year basis.

At least sixty (60) days prior to commercial operation of the CPV Sentinel project, the project owner shall submit to the CPM evidence that metering devices have been installed and are operational for process water supply and distribution.

SOIL&WATER-9: (Omitted)

~~TRANSMISSIVITY INVESTIGATION – EVALUATION OF HYDROGEOLOGIC CONDITIONS IN THE MESQUITE HUMMOCKS CONSERVATION AREA~~

~~**SOIL&WATER-9:** The project owner may complete an investigation that determines subsurface geology, groundwater levels, and aquifer properties (i.e., transmissivity and storage properties) in the Mesquite Hummocks Conservation Area located in the Mission Creek Groundwater Sub-basin. This investigation shall consist of the following:~~

~~1. Submit a scope of work (the Work Plan) to the CPM. This Work Plan shall contain a detailed discussion proposing the approach, methods, and timeframe for the hydrogeologic investigation.~~

~~2. Obtain CPM approval of the Work Plan prior to starting the investigation.~~

~~3. Complete the investigation as described in the approved Work Plan.~~

~~4. Submit a report of results that documents the methods used, data collected, analyses conducted and study conclusions regarding hydrogeologic conditions in the Mesquite Hummocks Conservation Area.~~

~~If the report demonstrates that hydrogeologic conditions and aquifer properties in the Mesquite Hummocks Conservation Area support the~~

~~hypothesis that transmissivity is greater than mapped by Tyley (1974), the project owner may, upon receipt of written CPM approval, request use this transmissivity value in the calculation of the pre-charge schedule and in the calculation of potential well interference at private wells.~~

~~**Verification:** The project owner shall:~~

~~1. At least 60 days before conducting the investigation, the project owner shall submit to the CPM, for approval, a Work Plan describing in detail the scope of work proposed for the hydrogeologic study.~~

~~2. At least 12 months before project operation, the project owner shall submit to the CPM a report of results documenting the aquifer properties in the Mesquite Hummocks Conservation Area, and if the transmissivity value is greater than that mapped by Tyley (1974), obtain CPM approval, if desired, to use this transmissivity value in calculating the pre-charge schedule and potential well interference at private wells.~~

GROUNDWATER RECHARGE

SOIL&WATER-10: The project owner shall ensure that its recharge of groundwater complies with the following:

1. Recharge shall occur at the Desert Water Agency's (DWA's) Mission Creek Spreading Grounds;

2. Water purchased by the project owner for recharge shall be in addition to State Water Project (SWP) supplies acquired by DWA under its entitlements as a State Water Project contractor (including DWA's Table A allocation and any surplus SWP purchases) for its groundwater replenishment program;

3. The initial water used for recharge shall be the 8,350 acre-feet of Exchanged North Kern water (hereafter referred to as North Kern water) water secured from North Kern Water Storage District pursuant to the Water Supply Agreement between CPV Sentinel and DWA, dated August 19, 2008. Recharge of additional water must comply with subdivisions a) and b) of this condition and must be approved pursuant to **SOIL&WATER-11**; and

4. The applicant shall provide to the CPM an annual accounting of cumulative water recharged on a monthly basis throughout the operating life of the project as part of the Annual Compliance Report, and in coordination with the annual reporting requirements in **SOIL&WATER-16**.

If recharge of other water is approved by the CPM pursuant to **SOIL&WATER-11**, the project owner shall, within 60 days of that approval, submit to the CPM copies of final agreements between the purchaser ~~it~~ and the seller of the other water, between it and DWA, and between DWA and MWD (if water is to be delivered through an exchange with MWD) that ensure that the other water will be delivered to the ~~DWA~~ Mission Creek spreading grounds.

APPROVAL OF NEW RECHARGE WATER SOURCES

SOIL&WATER-11:

1. The project owner shall submit a Water Supply Plan identifying additional water for recharge to the CPM for review and approval when**,** following delivery of 6,700 acre-feet of North Kern water, the amount of water available for project process needs is reduced to 1,650 acre-feet as calculated in **SOIL&WATER-8**.

2. Any Water Supply Plan submitted pursuant to this Condition shall include the following:

   A. Identification of the water source;

   B. Demonstration of the project owner's legal entitlement to the water;

   C. Demonstration of CEQA compliance; and

   D. An estimated schedule for delivery to the DWA's Mission Creek Spreading Grounds, including applicable agreements with water supply, transfer and conveyance entities.

3. The project shall not utilize water other than North Kern water unless the CPM has approved the Water Supply Plan submitted pursuant to this Condition.

Verification: The project owner shall submit a Water Supply Plan that meets the requirements of this condition.

WATER SUPPLY CONVERSION OF PALM SPRINGS NATIONAL GOLF COURSE

SOIL&WATER-14: In accordance with the Water Conservation Funding Agreement, dated July 15, 2008, the project owner will fund construction of the water supply conversion of the PSNGC from groundwater use to recycled water use, and comply with the following requirements:

1. The project owner shall pay $1,000,000 to the DWA for enhancements and improvements to DWA's reclaimed water system intended to maximize the availability of reclaimed water to DWA costumers;

2. The project owner shall pay $300,000 to DWA for fees and construction costs to enable delivery of the recycled water from DWA's South Murray Canyon Drive service main to the PSNGC.

3. The project owner shall, in each calendar year following the start of commercial operation, ensure that the maximum available supply of DWA's recycled water that can be beneficially used by PSNGC will be delivered and used by PSNGC. ~~At least 1,100 AFY of recycled water supply must be made available to PSNGC for irrigation.~~

4. The project owner shall obtain records from DWA showing the volume of recycled water used and report, in acre-feet, ~~daily~~ the monthly and annual water use ~~in gallons per day, and monthly and annual totals in acre-feet~~ in the Annual Compliance Report. If any groundwater is used for irrigation of PSNGC, the project owner shall also obtain records showing the ~~daily water use in gallons per day, and~~ monthly and annual totals in acre-feet in the Annual Compliance Report and provide an explanation of why irrigation with groundwater was necessary.

5. In the event the PSNGC no longer requires recycled water service, the project owner shall notify the CPM within 10 days and shall comply with the requirements of **SOIL&WATER-16**.

Verification: The project owner shall do all of the following:

No later than 60 days prior to the start of the PSNGC water supply conversion project construction the project owner will provide the CPM with an agreement and schedule demonstrating the PSNGC conversion project will be constructed and operational prior to pumping groundwater for use on the CPV Sentinel project. ~~The conversion project agreement and schedule must be reviewed and approved by the CPM prior to conversion project construction. The CPV Sentinel project may not operate until the PSNGC conversion project is operational.~~

No later than ~~90~~ 60 days prior to the start of conversion project operation, the project owner will provide to the CPM a copy of the agreement between DWA and PSNGC that ensures they will take delivery of recycled water for all their irrigation needs as soon as it is available. The CPV Sentinel project may not operate until the PSNGC conversion project is operational.

The project owner shall prepare an annual summary to be included in the annual compliance report, which will include the ~~monthly~~ range and ~~monthly~~ average of monthly ~~daily~~ recycled and groundwater use in acre-feet~~gallons per day~~, and total water used on a monthly and annual basis in acre-feet. For years subsequent to the initial year of operation, the annual summary will also include the yearly range and yearly average water use by source. Calculations shall be on a calendar year basis.

IRRIGATION CONTROLLER PROGRAM

SOIL&WATER-15: In accordance with the WSP, the project owner will fund installation by DWA of irrigation controllers in existing residences and businesses in DWA's service area to achieve fresh water conservation consistent with the WSP. ~~The program will include provisions for education and outreach, demonstration programs, and installation of the controllers by DWA.~~ The project owner shall:

1. Contribute funding sufficient for DWA's installation of 4,800 irrigation controllers in its services area at existing businesses or residences to conserve ~~between~~ an estimated 480 to 706 acre-feet of groundwater per

year~~. Installation shall be completed no later than the end of the 7th year following the start of construction~~; and

~~2. Contribute funding for DWA to provide long-term maintenance or periodic replacement of the irrigation controllers to ensure that they are effective for a minimum of 30 years;~~

3. Cause DWA to complete an evaluation of the effectiveness of the irrigation controller program using methods similar to those used by CVWD in their Final Report dated June 21, 2007 or other methods to be approved by the CPM.~~; and~~

~~If the installation of irrigation controllers does not result in fresh water conservation of at least 480 acre-feet each year, the project owner shall comply with **SOIL&WATER-16**.~~

Verification: The project owner shall do all of the following:

1. ~~No later than thirty (30) days after the CPV Sentinel project certification, the project owner will provide to the CPM an executed agreement with DWA to fund an irrigation controller management program to with the following elements included: purchasing and installing at least 4,800 irrigation controllers for water conservation to DWA's existing residential and business customers. The agreement will include a commitment from DWA showing they will conduct the necessary education and outreach, and demonstration projects to ensure that 4,800 controllers are installed within 7 years following start of CPV Sentinel construction~~

2. No later than one year after funding implementation of the irrigation controller program the project owner shall develop and submit to the CPM for approval a methodology and outline for a report to evaluate the effectiveness of the irrigation controller program and estimate the water savings in the Upper Coachella Valley Groundwater Basin. The methodology shall address how to account for the number of controllers that remain in use over time as well as the amount of savings per controller installed.

3. Each year after initiating the irrigation controller program, and annually thereafter, for the life of the project, the project owner shall analyze the effectiveness of the irrigation controller program using the approved methods and report on the total water conservation achieved. The report should be included in the Annual Compliance Report for approval by the CPM.

4. Submit to the CPM, as part of the Annual Compliance Report documentation, the following:

   - The annual invoice paid to the DWA, in accordance with the Water Conservation Funding Agreement dated July 15, 2008. This shall include proof of invoice payment to the DWA;
   - The estimated total and average water conservation achieved based on the number of controllers; and

- The accounting of the project owner's contributions to DWA's Irrigation controller Program over the life of the program.~~; and~~
- ~~A plan for maintaining and replacing as necessary the irrigation controllers over 30 years starting with CPV Sentinel's first year of commercial operation;~~

Calculations shall be on a calendar year basis.

REPORTING AND VERIFYING THE FRESH WATER CONSERVATION PROGRAM BENEFITS

SOIL&WATER-16: The project owner shall perform the following:

1. Provide annual reporting to ~~ensure that~~ assess whether the fresh water conservation benefits ~~to be~~ achieved by implementation of **SOIL&WATER-14** and **SOIL&WATER-15** ~~shall meet~~ have met the following requirements:
   A. Achieve 1,000 AFY in fresh water conservation benefits by the end of the first full calendar year following the project commercial operation date, increasing by 100 AFY annually over the subsequent 5 years to 1,500 AFY by the end of the 6th full calendar year following the commercial operation date.
   B. Achieve minimum cumulative water conservation benefits of 1,500 AFY for each year following the 6h full calendar year following the commercial operation date for the life of the project.

2. If the fresh water conservation benefits of the water supply conversion of the PSNGC and the irrigation program projects identified in 1.A and B above cannot be sustained for any reason ~~according to 1) and 2) above~~, the project owner shall submit a revised Water Conservation Plan within 6 months of the annual report, obtain CPM approval of the revised plan, and implement additional fresh water conservation projects on the schedule identified in the approved plan that will achieve fresh water conservation that will include the makeup of any deficits in meeting the water conservation requirements of 1.A and B ~~1) and 2)~~ of this condition.

Verification: For each year following the commercial operation date, the project owner shall provide an Annual Compliance Report, an accounting of fresh water conservation benefits for the previous calendar year, and a summary of annual fresh water conservation quantities since inception. If the water conservation benefits are not in conformance with the fresh water performance measures included in this condition, the project owner shall submit:

1. A revised Water Conservation Plan within 6 months of the annual report;

2. Obtain CPM approval of the revised plan; and

3. Implement additional fresh water conservation projects on the schedule identified in the approved plan that will achieve fresh water conservation that will include the makeup of any deficits in meeting the water conservation requirements of 1.A and B ~~1) and 2)~~ of this condition.