

## ANALYSIS

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\*The Implementation Committee met April 6<sup>th</sup> to continue discussion of the evaluation of projects submitted. At that time project sponsors of the Thousand Springs Pumpback Project outlined the numerous phases of the Project. Phase 1 was limited to identifying and building pumpback projects utilizing NSCC wastewater before it leaves the NSCC boundaries. This water would be delivered to lands irrigated with groundwater to eliminate the need for aquifer withdrawals. With respect to Phase 1 the presentation identified that the sponsors were continuing the evaluation of the J8 project and other wastewater pumpback projects consistent with Phase 1. Specifically, the J8 was renamed N-10/J8 to reflect automation to provide the opportunity for water savings up-gradient from the J8 pond as originally identified. At the April 29<sup>th</sup> Implementation Committee meeting, the Committee recommended the original Thousand Springs Pumpback Phase 1 project, which included only the J8 Pond project that was submitted by the Governor's deadline. The submitted proposal included project costs of \$2,270,849, with requested state funds of \$908,340 – 40%. Also at this April 29<sup>th</sup> meeting, the Pumpback project sponsors proposed additional sub-projects to Phase 1 ( S-Coulee, W-9 and S-19) which would take advantage of additional wastewater at the end of the NSCC system. The Implementation Committee commented that the additional sub-projects appear to be valuable, but wanted to revisit these projects in a future year in order to evaluate additional information and so that the Governor's deadlines were met. Subsequently, Phase 1 was refined by the project sponsors for the Water Smart application in order to receive federal funding for elements of the Pumpback project. Some federal funding has already been approved. The Implementation Committee, on the May 17<sup>th</sup> teleconference, indicated that they are ready to move forward with the Thousand Springs Pumpback as it is now described in the Water Smart application in order to implement projects that are likely to benefit the ESPA, but continue to want additional information. The Committee would like to review modeling and analysis of the additional sub-projects and want IDWR staff to review the applicable water rights – the same process that projects submitted by the Governor's deadline were subject to. Finally, the implementation of these sub-projects is subject to negotiations with individual property owners involved/impacted by the sub-projects. These negotiations are outside of the Implementation Committee process and are ongoing or not yet initiated.

*The following document, other than the project description, outlines the benefits/impacts/modeling analysis, etc. of only the J8 project that was originally submitted by the Governor's deadline for project submissions. For additional information on the sub-projects, please see the Water Smart application. This analysis document will be updated when the IWRB Staff has completed the additional analysis requested by the Implementation Committee.\**

**Project Name: PUMPBACK AT THOUSAND SPRINGS – PHASE 1**

**Project Sponsor(s):**

North Snake Groundwater District, Magic Valley Groundwater District, Clear Springs Foods, North Side Canal Company (NSCC)

### **Project Description**

The NSCC proposal for water management, water quality improvement and reductions in aquifer depletion includes four parts identified as, the J8/N10, S-Coulee, W-9 and S-19. Each of these parts or sub-projects, of the overall plan, entails the utilization of operational spill or waste currently being spilled from the NSCC canal system to improve water management on the open channel system. The project will allow for greater efficiency in the delivery and use of water diverted through the NSCC system through the improvement of water supplies to NSCC lands as well as the conversions of ground water irrigated acres to surface water irrigated acres.

All of the sub-projects depend upon the implementation of state-of-the-art SCADA equipment including field water level and discharge sensors and a central computer control to be installed under the J8/S10 subproject. It is estimated that approximately 14,200 acre feet of operation spill can be developed with the total project with a potential for converting approximately 3,406 acres of ground water irrigated land using the developed operational spill. Conversions of the 3,406 acres of ground water irrigated land will decrease depletion from the ESPA by approximately 14,200 acre-feet per year. The projects will improve spring flows, water quality in the Snake River and its tributaries, and help to meet TMDL goals as well as enhance habitat for ESA listed snail species in the Thousand Springs area.

Improved water management and utilization of operation spill will improve the NSCC's ability to provide more adequate and timely deliveries in the S-Coulee system which is near the downstream end of the service area, provide flexibility in distribution throughout the system, and can potentially decrease requirements for storage use from reservoirs in the Upper Snake River system above Milner Dam (American Falls, Palisades, and Jackson Lake Reservoirs).

In addition, it is estimated that the energy savings as a result of conversion of ground water irrigated lands could be as much as \$168,327 per year.

\*Additional information on the sub-projects can be found in the Water Smart application.

### **Cost Estimates and Funding**

Total Project Costs:	\$1,197,789.16
Potential Sponsor Funding* Contribution (60%):	\$160,000 (NSCC)
<i>Proposed ESPA CAMP Contribution (40%):</i>	<i>\$438,894.58</i>
<i>(Preliminary project costs were provided by the sponsor)</i>	

\*Identified Sponsor funding sources: The sponsor proposes to provide up to 33% of total project costs with private party funds and in-kind services. Private parties will seek funding assistance from state and federal grants.

### **Benefits (positives)**

Hydrologic: The attached hydrologic analysis evaluates the reduction in consumptive use from reduced ground water pumping on the proposed 920 acres as a result of wastewater reused

through the J8 Pond. It assumes a full supply of surface water is available for irrigation of the proposed acres. The modeled steady state analysis indicates 49% and 26% of the reduced pumping will return to the Buhl to Thousand Springs and Devils Washbowl to Buhl reaches respectively. Most of the water is expected to return within six months. Evaluation of the transient response over twenty years of operation indicates flows may increase up to 0.9 cfs and average 365 acre-feet per year in the Buhl to Thousand Springs reach, and flows may increase up to 0.4 cfs and average 185 acre-feet per year in the Devils Washbowl to Buhl reach. Modeled hydrographs of four monitoring wells in the vicinity of the targeted 920 acre conversion project demonstrate a water level rise of approximately 0.024 to 0.034 feet over a twenty year period (see Hydrologic Analysis below).

As identified in the project proposal, the project is intended to provide a reliable surface water supply to land historically irrigated with ground water (wells were intended to be locked or disabled in accordance with the approved 2009 Mitigation Plan). It could reduce the need for storage water at the 920 converted acres, making water available for other water uses.

Environmental: The reduction in ground water pumping through the proposed project could improve water quality in the form of increased springs flows, which could also result in downstream water quality benefits depending on the location and use of the increased spring flows. Additionally, increased spring outflow may help secure flows in Box Canyon.

Other: Project provides an opportunity to offset litigation at Box Canyon.

### **Impacts (negatives) or Potential Issues**

Hydrologic: No negative hydrologic impacts were identified as a result of the project as proposed. Impacts to hydropower activities on the Snake River were discussed by the Implementation Committee, but it is assumed impacts will be minimal once spring discharge has stabilized with continued operation of the project.

Availability of water through the J8 Pond has not been clearly established. Information necessary to evaluate the potential water supply at the J8 Pond was not available at the time of this review and is not a discriminator in recommending this project.

Environmental: Comments have not been obtained from other agencies or organizations at this time, and the CAMP Implementation Committee Environmental Working Group has not had the opportunity to review this proposal.

Scheduling: The sponsor indicated the project could be constructed in 2010. At the time of this review, new information - about the Sponsor's ability to secure 60% of the estimated project costs was not provided. The original project proposal indicates the sponsor is prepared to provide up to 33% of total project costs. Private parties will seek additional funding from state and federal grants.

Contracting/Project Ownership: Expectations for long-term operation and maintenance obligations and project ownership must be clarified.

## **Consistency with CAMP**

The proposed project promotes a reduction in ground water pumping in the ESPA and attempts to provide a reliable supply of surface water to irrigation lands. The project appears to be consistent with the goals of the ESPA CAMP.

## **Water Rights**

The lands identified in the proposal to receive wastewater from the J8 pond are within the NSCC boundary and it does not appear that the number of acres authorized for irrigation under existing NSCC water rights will be exceeded through this project. The Idaho Fish and Game (IDFG) owns a water right for irrigation use from the wastewater in the J8 Pond. Reuse of water by NSCC does not conflict with the priority of the IDFG water right.

## **Long-term O&M**

The proposed project will have ongoing operation and maintenance obligations related to pumping plant, pond and laterals. The Implementation Committee anticipates responsibilities and ownership issues will be clarified in an agreement between the IWRB and the project sponsor.

## **Recommendation**

The Implementation Committee recommends that the Thousand Springs Pumpback be considered for funding because this project as proposed is consistent with the goals of the ESPA CAMP. The project provides hydrologic, environmental and legal benefits to the reach, and there are no identified impacts once increased spring flows are realized. The availability of water at the proposed site must be clearly established, and long-term operation and maintenance obligations and the viability of a sponsor funding match must be clarified.

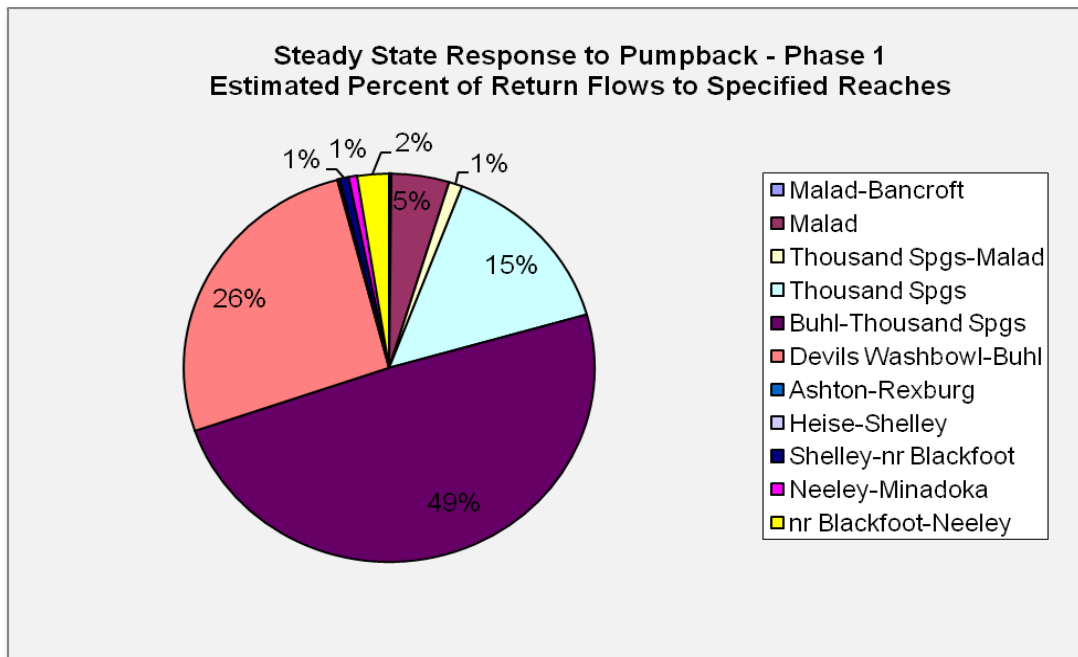
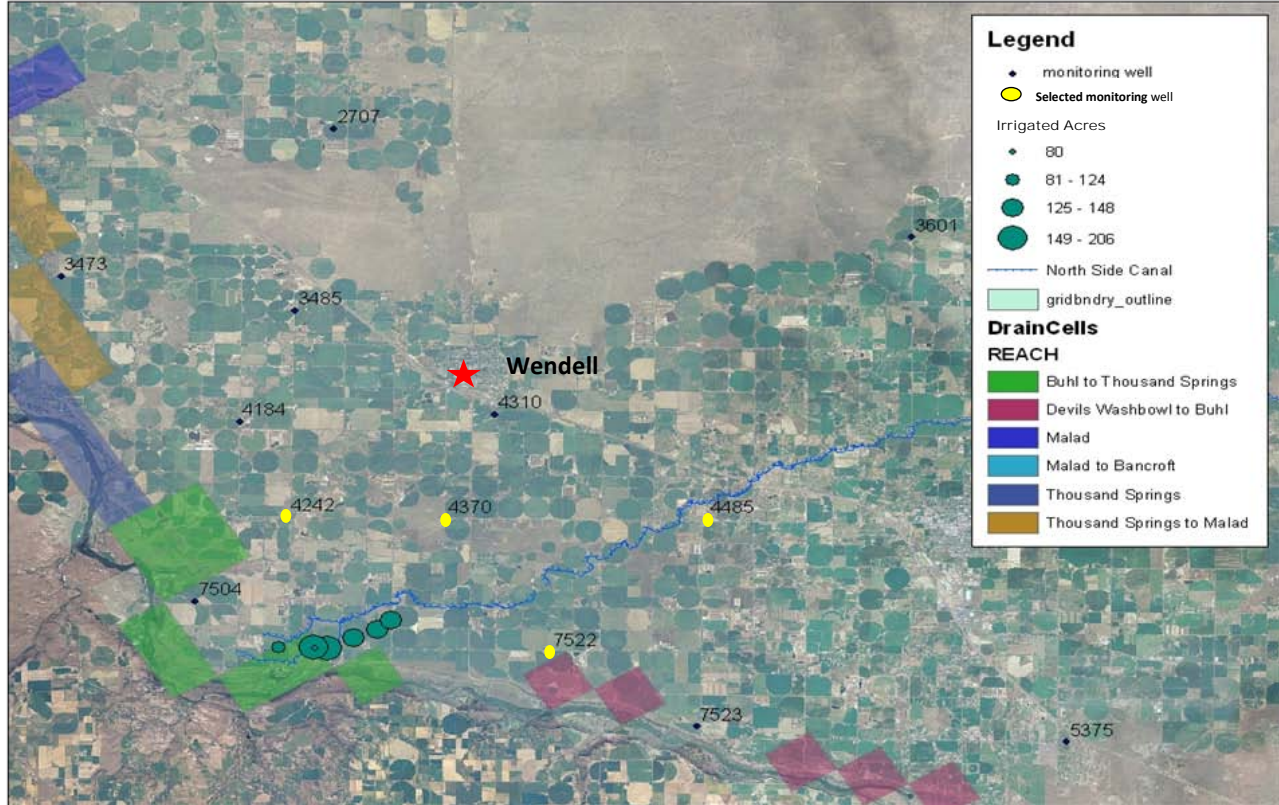
\*At the April 29<sup>th</sup> Implementation Committee meeting, the Committee recommended the Thousand Springs Pumpback Phase 1, which included the J8 Pond. The submitted proposal included project costs of \$2,270,849, with requested state funds of \$908,340 – 40%. Also at the meeting, the Pumpback project sponsors proposed additional sub-projects to Phase I (N10 elements added to J8, S-Coulee, W-9 and S-19). The Implementation Committee commented that the additional sub-projects appear to be valuable, but wanted to revisit these projects in a future year in order to evaluate additional information and so that the Governor's deadlines were met. Subsequently, Phase 1 was refined by the project sponsors for the Water Smart application in order to receive federal funding for the Pumpback. The Implementation Committee, on the May 17<sup>th</sup> teleconference, indicated that they are ready to move forward with the Thousand Springs Pumpback as it is now described in the Water Smart application, but continue to want additional information. The Committee would like to review modeling and analysis of the additional sub-projects and want IDWR staff to review the applicable water rights. Finally, the implementation of these sub-projects is subject to negotiations with individual

property owners involved/impacted by the sub-projects. These negotiations are outside of the Implementation Committee process and are ongoing or not yet initiated.

The proposal submitted by the projects sponsors included subsequent phases. In regards to additional phases of the Pumpback, the Implementation Committee felt that the Phase 1 project was the most shovel-ready for 2010. These additional phases are not recommended for implementation in 2010, but the projects sponsors are encouraged to submit them again in future years.

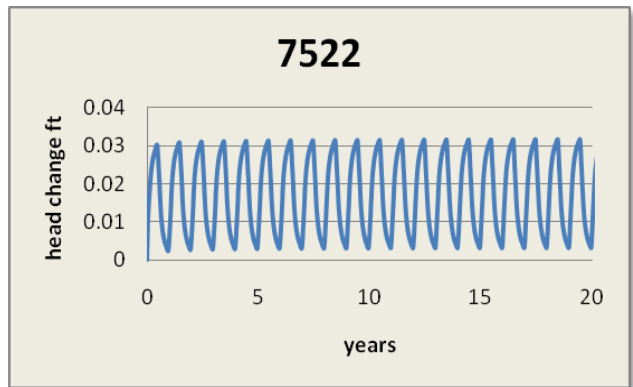
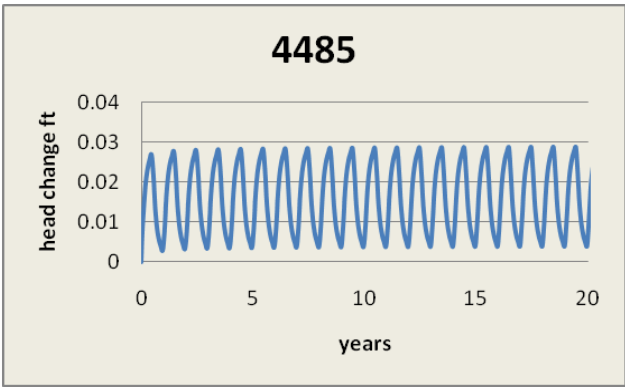
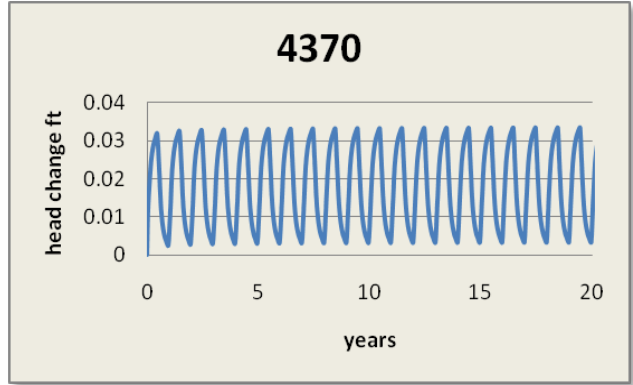
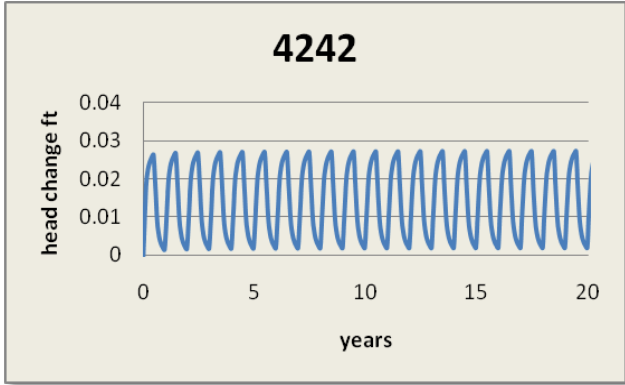
# HYDROLOGIC ANALYSIS

## THOUSAND SPRINGS PUMPBACK – PHASE 1 J8 POND



# Hydrographs

Ground water level response in selected monitoring wells resulting from reduced ground water pumping and irrigation with irrigation water from the J8 Pond pumped every year for 20 years.



Transient response over twenty year period of project operation in reaches with the greatest steady state response.

