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*Attorneys for Idaho Ground Water Appropriators, Inc. (IGWA)*

BEFORE THE DEPARTMENT OF WATER RESOURCES  
OF THE STATE OF IDAHO

IN THE MATTER OF THE FOURTH  
MITIGATION PLAN FILED BY THE  
IDAHO GROUND WATER APPROPRI-  
ATORS FOR THE DISTRIBUTION OF  
WATER TO WATER RIGHT NOS. 36-  
02551 & 36-07694 IN THE NAME OF  
RANGEN, INC.

“MAGIC SPRINGS PROJECT”

Docket No. CM-MP-2014-\_\_

IGWA’S Fourth Mitigation Plan  
and Request for  
Expedited Hearing

PLAN OVERVIEW

Idaho Ground Water Appropriators, Inc. (IGWA), acting for and on behalf of its members and non-member participants in mitigation activities, submits this fourth mitigation plan and request for hearing (“Mitigation Plan”) pursuant to rule 43 of the Rules for Conjunctive Management of Surface and Ground Water Resources<sup>1</sup> (“CM Rules”) to provide additional ways of satisfying the mitigation obligation imposed by the Idaho Department of Water Resources’ (IDWR) *Final Order Regarding Rangen, Inc.’s Petition for Delivery Call; Curtailing Ground Water Rights Junior to July 13, 1962* (“Curtailment Order”), and thereby prevent curtailment of junior-priority groundwater use.

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<sup>1</sup> IDAPA 37.03.11.043.

The Curtailment Order requires the holders of junior-priority groundwater rights to provide simulated steady state benefits of 9.1 cfs to the Curren Tunnel or direct flow of 9.1 cfs to Rangen. Mitigation provided by direct flow may be phased in over five years as follows: 3.4 cfs in the first year, 5.2 cfs in the second year, 6.0 cfs the third year, 6.6 cfs the fourth year, and 9.1 cfs the fifth year.

This Mitigation Plan provides alternate means of providing mitigation in addition to those authorized under IGWA's First Mitigation Plan, IDWR Docket No. CM-MP-2014-001, Second Mitigation Plan, IDWR Docket No. CM-MP-2014-003 and Third Mitigation Plan, IDWR Docket No. CM-MP-2014-004.

### MAGIC SPRINGS PROJECT

Under this proposal, IGWA will secure by lease or purchase the right to pump up to 10.0 cfs of first use water from SeaPac of Idaho ("SeaPac") at its Magic Springs facility. SeaPac agrees to lease or sell to IGWA up to ten (10) cfs of first use water for water right nos. 36-7072 and 36-8356 and will provide access to allow IGWA to provide mitigation to Rangen. Attached as *Exhibit 1* is a *Letter of Intent* ("LOI") entered between IGWA and SeaPac.

Pursuant to the LOI, IGWA will secure ownership or control of Aqua Life water right nos. 36-1044, 36-2734, 36-15476, 36-2414 and 36-23389 by long term lease or purchase from the Idaho Water Resource Board ("IWRB"). IGWA will pay all costs to design, construct, operate and maintain the water collection and intake system, pump station, pipeline and other facilities necessary to deliver up to 10 cfs of first use water from Magic Springs to the head of Billingsley Creek directly up gradient from the Rangen hatchery.

The water delivered to Rangen is non-consumptive and will increase water in Billingsley Creek to provide mitigation to other locations in the Hagerman Valley. The LOI also enables IGWA to utilize all discharged water from SeaPac's Magic Spring hatchery which IGWA may separately pump to provide mitigation to other water rights in Billingsley Creek and/or Riley Creek via the Curren Ditch. However, no mitigation plan for approval is sought by this plan other than for Rangen.

Completion of the Magic Springs Project will require the following which would be completed by IGWA at its expense: (1) lease or purchase of 10.0 cfs of water right nos. 36-7072 and 36-8356 owned by SeaPac; (2) long-term lease or purchase from the IWRB of Aqua Life water right nos. 36-1044, 36-2734, 36-15476, 36-2414, and 36-2338 to make available

to SeaPac; (3) design, construction, operation and maintenance of the water intake and collection facilities, the pump station and pipeline to transport water from Magic Springs to the head of Billingsley Creek; (4) acquisition of permanent easements at Magic for the water intake and collection facilities, pump station and pipeline and other necessary features for the delivery of water to the head of Billingsley Creek; (5) approval of a transfer application to change the place of use to Rangen.

SPF Water Engineering has completed preliminary design and engineering work for the Magic Springs Project, attached as *Exhibit 2*. SeaPac has agreed to provide access to IGWA to complete its engineering work. Engineering work has begun and will be completed to a higher level in the near future, at which time the updated engineering work will be provided.

Option Agreements are in place to acquire easements for the delivery pipeline through the Walter Candy and Butch Morris property. An additional easement will be necessary through property of the U.S. Fish & Wildlife Service.

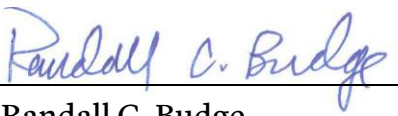
IGWA requests mitigation credit for water it delivers from Magic Springs to Rangen in the future. If Rangen refuses to provide access to its property for IGWA to further engineer and install this delivery system, IGWA again asks that its mitigation obligation to Rangen be suspended.

#### REQUEST FOR EXPEDITED HEARING

Pursuant to CM Rule 43.02, IGWA requests that this Mitigation Plan be promptly processed and advertised, and that an expedited Scheduling Conference be set with notice given to the parties to discuss the mitigation alternatives identified in this plan; and, to schedule necessary hearings.

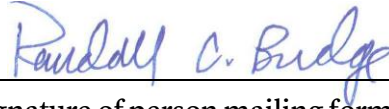
RESPECTFULLY SUBMITTED this 27th day of August, 2014.

RACINE OLSON NYE BUDGE &  
BAILEY, CHARTERED

By:   
Randall C. Budge  
Thomas J. Budge

# CERTIFICATE OF MAILING

I certify that on this 27<sup>th</sup> day of August, 2014, the foregoing document was served on the following persons in the manner indicated.



Signature of person mailing form

Director, Gary Spackman Idaho Department of Water Resources PO Box 83720 Boise, ID 83720-0098 <a href="mailto:Deborah.Gibson@idwr.idaho.gov">Deborah.Gibson@idwr.idaho.gov</a>	<input type="checkbox"/> U.S. Mail/Postage Prepaid <input type="checkbox"/> Facsimile <input type="checkbox"/> Overnight Mail <input checked="" type="checkbox"/> Hand Delivery <input type="checkbox"/> E-mail
Garrick Baxter Chris Bromley Idaho Department of Water Resources P.O. Box 83720 Boise, Idaho 83720-0098 <a href="mailto:garrick.baxter@idwr.idaho.gov">garrick.baxter@idwr.idaho.gov</a> <a href="mailto:chris.bromley@idwr.idaho.gov">chris.bromley@idwr.idaho.gov</a>	<input type="checkbox"/> U.S. Mail/Postage Prepaid <input type="checkbox"/> Facsimile <input type="checkbox"/> Overnight Mail <input type="checkbox"/> Hand Delivery <input checked="" type="checkbox"/> E-mail
Robyn M. Brody Brody Law Office, PLLC PO Box 554 Rupert, ID 83350 <a href="mailto:rbrody@cableone.net">rbrody@cableone.net</a> <a href="mailto:robynbrody@hotmail.com">robynbrody@hotmail.com</a>	<input type="checkbox"/> U.S. Mail/Postage Prepaid <input type="checkbox"/> Facsimile <input type="checkbox"/> Overnight Mail <input type="checkbox"/> Hand Delivery <input checked="" type="checkbox"/> E-mail
Fritz X. Haemmerle Haemmerle & Haemmerle, PLLC PO Box 1800 Hailey, ID 83333 <a href="mailto:fxh@haemlaw.com">fxh@haemlaw.com</a>	<input type="checkbox"/> U.S. Mail/Postage Prepaid <input type="checkbox"/> Facsimile <input type="checkbox"/> Overnight Mail <input type="checkbox"/> Hand Delivery <input checked="" type="checkbox"/> E-mail
J. Justin May May, Browning & May, PLLC 1419 West Washington Boise, ID 83702 <a href="mailto:jmay@maybrowning.com">jmay@maybrowning.com</a>	<input type="checkbox"/> U.S. Mail/Postage Prepaid <input type="checkbox"/> Facsimile <input type="checkbox"/> Overnight Mail <input type="checkbox"/> Hand Delivery <input checked="" type="checkbox"/> E-mail

# Exhibit 1

## Letter of Intent

## LETTER OF INTENT

### USE OF WATER FROM SEAPAC OF IDAHO, INC'S MAGIC SPRINGS FACILITY, CONSTRUCTION OF PUMP STATION AND PIPELINE IN EXCHANGE FOR WATER FROM THE AQUA LIFE FACILITY

This Letter of Intent ("LOI") is entered into by and between Idaho Ground Water Appropriators, Inc. ("IGWA"), acting for and on behalf of North Snake Ground Water District, Magic Valley Ground Water District and Southwest Irrigation District (collectively "Districts"), and SeaPac of Idaho, Inc. ("SeaPac").

#### RECITALS

A. In response to Rangen, Inc.'s ("Rangen") water delivery call, the Idaho Department of Water Resources ("IDWR") determined in its January 29, 2014 order that holders of ground water rights junior to July 13, 1962 must provide 9.1 cfs of direct flow to Rangen. Other delivery calls are pending or may be filed by other Hagerman Valley water right holders seeking to curtail junior ground water users.

B. IGWA represents ground water districts whose members consist of irrigators, municipalities, and commercial and industrial entities with ground water rights. Many of the ground water districts' member's water rights are junior to Rangen and certain other water rights in the Thousand Springs reach of the Hagerman Valley and are subject to curtailment unless a mitigation plan is approved providing replacement water.

C. IGWA and SeaPac support the concepts and implementation of the State of Idaho's *Thousand Springs Water Supply Settlement Framework* designed to provide recharge and other means to stabilize the aquifer, to improve water supplies in the Hagerman Valley and to resolve conflicts between junior and senior water right holders.

D. The Idaho Water Resource Board ("IWRB") owns and operates the Aqua Life Aquaculture Facility Hatchery ("Aqua Life") and has entered into a Letter of Intent with IGWA to make available to IGWA by lease or purchase up to ten (10) cfs of its Aqua Life water rights from adjacent springs as needed to meet the mitigation obligation to Rangen and others in the Hagerman valley. IGWA has entered into negotiations with IWRB seeking to lease and acquire ownership of all of Aqua Life.

E. SeaPac currently has a short-term lease of Aqua Life from IWRB and desires to continue its Aqua Life operations by securing ownership and/or a long-term lease.

F. IGWA desires to secure water from SeaPac's Magic Springs to provide a supply of water for mitigation purposes to Rangen and to other senior rights in the Hagerman Valley.

G. IGWA and SeaPac desire to enter into this Letter of Intent ("LOI") to set forth their intent to commence negotiation of a final agreement providing for the exchange of Magic Springs water for Aqua Life water consistent with the terms set forth below.

#### TERMS

The Agreement shall have the following terms and conditions:

1. SeaPac will lease or sell to IGWA up to ten (10) cfs of first use water from its Magic Springs water right nos. 36-7072 and 36-8356 and also will provide access to allow IGWA to utilize all discharge water from its Magic Springs facilities as needed to provide mitigation to other water right holders in the Hagerman valley.

2. In exchange for water from Magic Springs, IGWA will secure ownership or control of Aqua Life water right nos. 36-1044, 36-2734, 36-15476, 36-2414, and 36-2338 by long-term lease or purchase from IWRB and make them available to SeaPac.

3. IGWA will pay all costs to design, construct, operate and maintain the water collection and intake system, pump station, pipeline and other facilities necessary to deliver up to 10 cfs of first use water together with discharge water from Magic Springs to the head of Billingsley Creek directly up gradient from the Rangen hatchery and/or other locations in the Hagerman valley for mitigation purposes. IGWA will ensure that the diversion and delivery facilities to be constructed will not interfere with the use of SeaPac's remaining water rights at Magic Springs.

4. IGWA shall be responsible to secure from IDWR approval of such mitigation plans, transfer applications and other permits as may be required to change the point of diversion and place of use to accomplish the delivery of Magic Springs water for mitigation purposes. SeaPac hereby grants consent to IGWA to file and process such mitigation plans, transfer applications based on this LOI, with the approvals made subject to this LOI and the contemplated final Agreement between the parties.

5. SeaPac will grant IGWA permanent easements at Magic to design, construct, operate and maintain the water intake and collection facilities, pump station, pipeline and other facilities as necessary for the delivery of water to other locations for mitigation purposes.

6. IWRB will cooperate with IGWA and provide all necessary documents to conduct such investigation as it shall deem appropriate.

7. The Agreement will be contingent upon: (a) IGWA securing an order from IDWR approving mitigation plans providing for the delivery SeaPac's Magic Springs water rights to satisfy the mitigation obligations to Rangen and/or others in the Hagerman valley; (b) IGWA

securing an order from IDWR approving the transfer of the point of diversion and place of use (as necessary) from SeaPac to Rangen and other locations for mitigation; (c) IGWA proceeding to construct and implement the pump and pipeline facilities pursuant to an approved mitigation plan; and IGWA securing ownership or control by long-term lease of Aqua Life and providing it to SeaPac.

8. This LOI may be executed in counterparts, each of which shall be deemed to be an original, but all of which, taken together, shall constitute but one and the same agreement. Delivery of an executed counterpart of this LOI via facsimile transmission shall be as effective as delivery of an original signed copy. Thereafter, the parties shall exchange executed originals of this LOI.

9. This LOI is intended as a general expression of the terms and conditions, under which the parties are willing to proceed to prepare, negotiate and if acceptable to all parties in their respective sole discretion, execute a final Agreement. Neither this LOI nor the execution hereof as provided below, shall be binding on any party until the formal Agreement is executed by all parties.

10. Upon execution of this LOI SeaPac will provide access to IGWA to begin engineering work, IGWA will proceed to file and process with IDWR mitigation plans and transfer applications as contemplated and the parties will proceed to negotiate a final Agreement incorporating the terms and conditions as outlined above.

Idaho Ground Water Appropriators, Inc.

By: 

Tim Deeg, Resident

SeaPac of Idaho, Inc.

By: \_\_\_\_\_ **original signature to be submitted**



# EXHIBIT 2

## MAGIC SPRINGS PROJECT

## TECHNICAL MEMORANDUM

**DATE:** August 26, 2014  
**TO:** Randy Budge - Racine, Olson, Nye, Budge & Bailey, Chartered  
**FROM:** Bob Hardgrove, P.E.  
Jason Thompson, P.E.  
**CC:** SPF file (535.0150)  
**RE:** IGWA's 4<sup>th</sup> Mitigation Plan: Magic Springs Project  
10% Preliminary Submittal

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The Idaho Ground Water Appropriators, Inc. (IGWA) is reviewing legal and technical options related to water management stemming from the Rangen, Inc. (Rangen) Water Call. IGWA has requested through its water rights legal counsel that SPF Water Engineering (SPF) provide a conceptual design to deliver 9.1 cfs of direct flow to Rangen from the Magic Springs facility owned and operated by SeaPac of Idaho, Inc. (SeaPac). This memorandum presents this conceptual design at a preliminary 10% level.

### 1. Project Overview

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This memorandum provides a feasibility assessment and conceptual opinion of probable cost for delivering replacement water from Magic Springs to Rangen, Inc. (Rangen) by constructing a new spring intake, pump station, and pipeline. This project is referred to as the Magic Springs Project (Project).

In addition to providing up to 9.1 cfs of spring water to Rangen, the Project could provide additional water to Billingsley Creek and/or the Curren Ditch by intercepting flows downstream of SeaPac's raceways. This second source of SeaPac water would require constructing a separate intake, pump station, and pipeline. This additional flow of water could be used to mitigate or avoid other Billingsley Creek water right calls.

### 2. Water Rights

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SeaPac owns two water rights for fish propagation at Magic Springs. Water right 36-7072 authorizes the diversion of 148.2 cfs for fish propagation purposes from Thousand Springs with a priority date of September 5, 1969. Water right 36-8356 authorizes the diversion of 45.0 cfs for fish propagation from springs with a priority date of May 9, 1988. Rights 36-7072 and 36-8356 combined shall not exceed a total diversion rate of 148.2 cfs.

It is anticipated that the Project will be designed to deliver a maximum flow of 10.0 cfs of spring water associated with water right 36-7072 to Rangen. Additional water delivered downstream of Rangen would also likely be accomplished under water right 36-7072.

### 3. Project Design

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#### 3.1. Preliminary Pipeline Alignment

A preliminary pipeline alignment was developed based on an examination of aerial photography, topography, and a site visit to Magic Springs on August 13, 2014. Elevations for the alignment were derived from an aerial survey performed by 3Di GeoTerra Mapping Group on June 12, 2014. The preliminary alignment is shown with property ownership in Figure 1. The alignment and an elevation profile are also included as Attachment A.

From the Magic Springs facility, the alignment parallels the rim and the river before turning up the rim on Hagerman National Fish Hatchery property. It follows an existing dirt road north, then parallels S 1200 E to the north on property owned by Butch Morris. The alignment crosses E 3000 S, then follows the alignment proposed for the Tucker Springs Project to Rangen. The alignment crosses property owned by Walter Candy just south of Rangen. In total, the proposed alignment only crosses four properties, SeaPac, the National Fish Hatchery, Morris, and Candy, before entering Rangen property.

The Project may involve two separate pipelines, with one pipeline delivering spring water directly to Rangen and the larger pipeline delivering water that has passed through the SeaPac facility to Billingsley Creek and/or the Curren Ditch. These pipelines would share the same alignment and trench. The Rangen pipeline would be approximately 1.8 miles long, while the larger pipeline would be approximately 1.5 to 2.5 miles long, depending on the final point of delivery. Both pipelines have a maximum elevation of 3,148 feet.

Mr. Morris and Mr. Candy were reportedly agreeable to granting an easement through their respective properties for the Tucker Springs pipeline, so it has been assumed they will also agree to grant an easement for the Magic Springs alignment(s) as well. The willingness of the Hagerman National Fish Hatchery to cooperate is not known at this time.

The Hagerman Highway District (HHD) approved an open-cut crossing of E 3000 S and also allowed the proposed installation of air valve vaults within their right-of-way for the Tucker Springs Project. Therefore, it is assumed HHD will also grant approval for similar activities for the Magic Springs alignment.

The pipelines will be equipped with combination air valves at defined high points that release air during pipeline filling, let air enter the pipe when it is being drained, and release small amounts of accumulated air when the pipe is under pressure. These valves help protect the pipe during filling and draining events and minimize the amount of air in the line, reducing the friction losses in the pipeline. In areas that are safe from vehicles or farm equipment, air valves would be placed directly over the pipelines with access via a manhole. Where the pipelines are in a road or a farmed field, the air valve would be located remotely in a vault and fed from the pipeline with a small diameter lateral line.

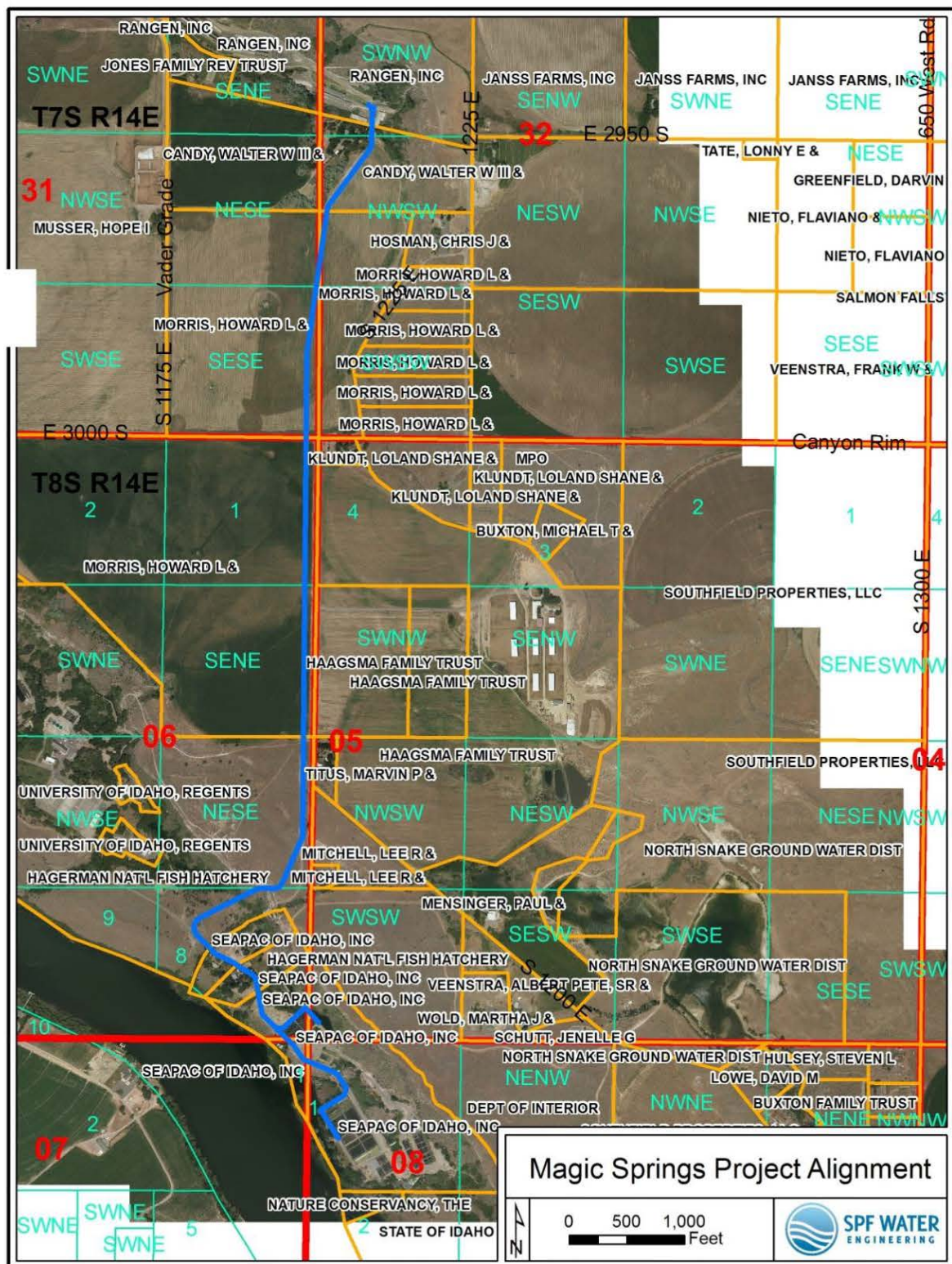


Figure 1. Preliminary Pipeline Alignment

### **3.2. Points of Diversion**

The Project could include diverting water from two separate locations at the Magic Springs facility. The first location would consist of diverting spring water upgradient of Magic Spring's furthest north raceway with delivery to the Rangen facility. The second location would consist of diverting water downstream of the lowest raceway with delivery directly to Billingsley Creek and/or the Curren Ditch. The ground elevation of the spring diversion point is 2,985 feet. The ground elevation of the diversion point downstream of the lowest raceway is approximately 100 feet lower at 2,887 feet. These two points of diversion are shown on Figure 2.



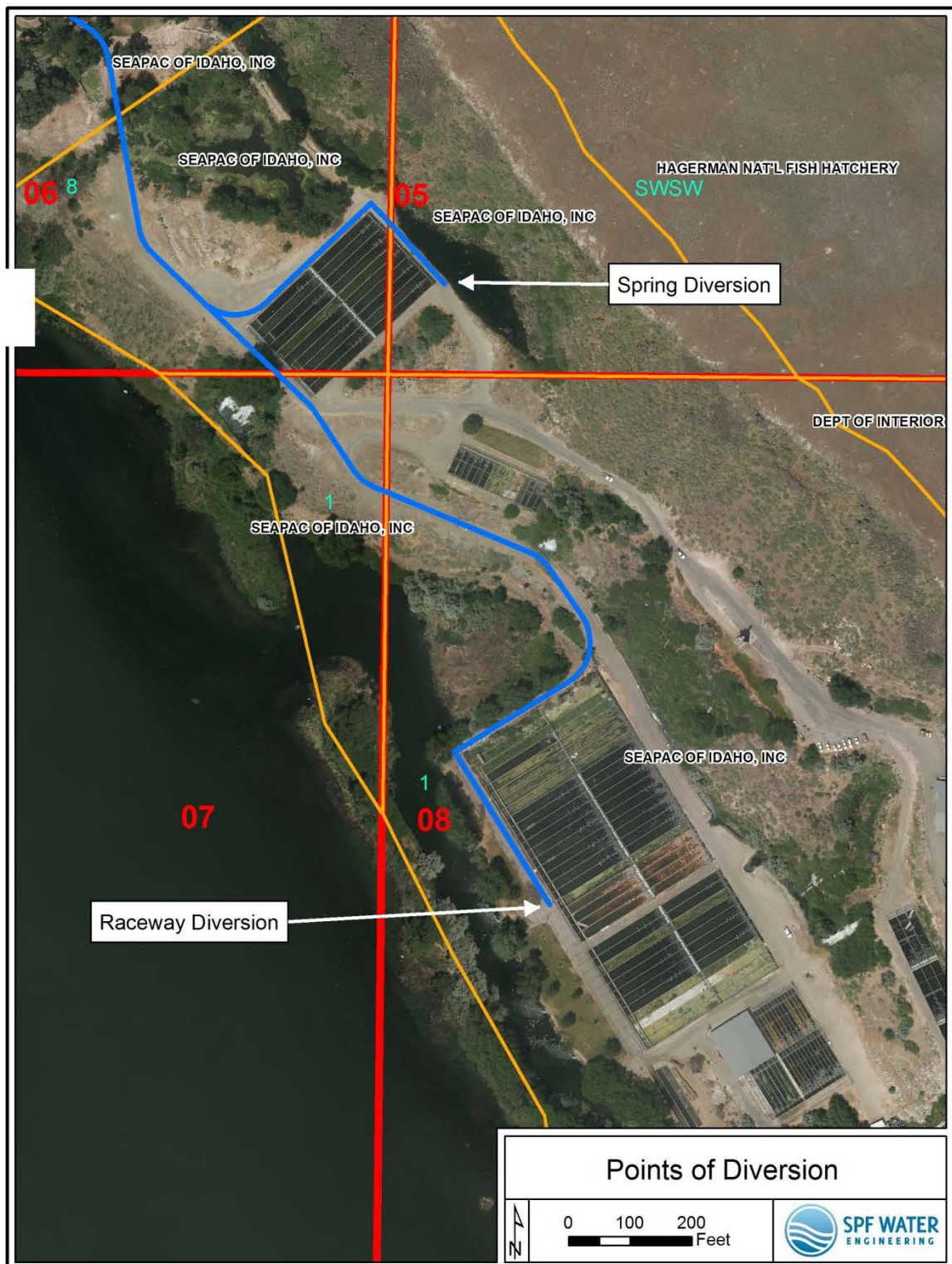


Figure 2. Points of Diversion at Magic Springs

### 3.3. Pump Station Design

The preliminary design contemplates utilizing two skid-mounted packaged pump stations, one for delivering spring water to Rangen (10 cfs pump station) and one for delivering “pass-through” water directly to Billingsley Creek and/or the Curren Ditch (large pump station). Each pump station would include pumps, mechanical piping, valves, flow meter, variable frequency drives (VFDs), and associated controls housed in an enclosure. The preliminary design includes a backup generator for the 10 cfs pump station to allow delivery during times of power outages. The use of a backup generator for the large pump station is not anticipated at this time.

Each pump station would include three short-set line-shaft turbine pumps. Two of the pumps would be duty pumps and one would be on standby to ensure that two pumps can operate at all times should one be taken out of service for maintenance. The preliminary design anticipates installing the turbine pumps in individual pump cans. For the 10 cfs pump station, a short gravity pipeline would be installed in the spring area to supply the manifold to the pump cans. The pipeline would be screened and equipped with a head gate. Alternatively, the 10 cfs pump station manifold may intercept the line(s) that feeds the north raceways and avoid the spring area completely. For the large pump station, a short pipeline would deliver flows to the pump can manifold. This would be fed directly from the open channel at the bottom of the raceway or from at least two of the existing buried discharge pipes directly downstream of the raceway.

#### 10 cfs Pump Station

To deliver 10 cfs from Magic Springs to Rangen, the pump station will have to generate approximately 225 feet of total dynamic head (TDH). The TDH calculation assumes:

- 2,500 feet of 24-inch fused high density polyethylene (HDPE) pipe (IPS, SDR 11, 19.4-inch I.D.)
- 7,000 feet of 24-inch HDPE pipe (IPS, SDR 17, 21.01-inch I.D.)
- Pumping water elevation of 2,980 feet at spring point of diversion (5 feet below ground surface)
- A maximum pipeline elevation of 3,148 feet
- A pressure sustaining valve to maintain backpressure equal to 25 feet over the maximum elevation of the pipeline, equal to 3,173 feet
- Connection to Rangen’s existing 14-inch buried steel pipe between the hatch house and the small raceway
  - Assumed design flow of 4 cfs (1,800 gpm) to Rangen’s small raceway
  - Assumed design flow of 6 cfs (2,700 gpm) to the Rangen box

With a TDH of 225 feet and a delivery rate of 10 cfs (4,488 gpm), total brake horsepower (hp) required is 302 hp, or 151 hp per pump with two pumps running. The pumps would require nominal 200-hp motors. All three 200-hp pumps would be controlled by VFDs and paced off flow to maintain any operator-adjustable flow rate up to 10 cfs. System operation would be controlled by a programmable logic controller with remote monitoring

and auto-restart capabilities. The packaged pump station would include an isolation and check valve on each pump, a mainline butterfly valve, pressure relief valve, combination air valve, and a flow meter. A generator is anticipated to provide emergency power. The pump station would be enclosed for protection from weather and to provide sound attenuation. The insulated enclosure would be heated and ventilated.

The pump station would be designed to deliver a maximum flow of 10 cfs at 225 feet of TDH. Because the pump station would include two VFD-controlled pumps paced off of flow, it could be programmed to deliver the phased-in lower direct flows identified by the Idaho Department of Water Resources (IDWR) in the Rangen curtailment order. These flows were determined to be:

- 1<sup>st</sup> Year: 3.4 cfs (1,525 gpm)
- 2<sup>nd</sup> Year: 5.2 cfs (2,335 gpm)
- 3<sup>rd</sup> Year: 6.0 cfs (2,695 gpm)
- 4<sup>th</sup> year: 6.6 cfs (2,965 gpm)
- 5<sup>th</sup> year: 9.1 cfs (4,085 gpm)

A tentative location for the pump station is identified in Figure 2 as “Spring Diversion”. A final location would be identified in future design documents. The final location will depend on the topographical survey, power availability, existing site infrastructure, constructability, SeaPac input, permitting, and other factors.

During the initial site visit to Magic Springs on August 13, 2014, 3-phase power was identified on the property near the proposed pump station location. However, it is not known if there is adequate capacity to add this pump station. Idaho Power will be contacted to determine power availability at Magic Springs and to identify any distribution system upgrades necessary to supply the pump station if the Project moves forward.

The 10 cfs pump station will be designed to be a reliable, year-round facility and would include: (1) a redundant pump, (2) remote monitoring and alarming capabilities, (3) auto-restart, and (4) a proposed standby power generator and auto-transfer switch. The pump station VFDs would be controlled by discharge rate, allowing them to automatically adjust their speed to deliver a constant flow to Rangen without the need for manual adjustments. The pump station enclosure would be lockable and durable to prevent vandalism or unauthorized entry. All these items will make the pump station dependable, biologically and physically secure, and would minimize downtime due to maintenance and power outages.

### **Large Pump Station**

The large pump station would be designed to collect pass-through water downstream from the lowest raceway at the Magic Springs facility and deliver it directly to Billingsley Creek and/or the Curren Ditch. Per Tom Van Tassel of SeaPac, approximately 85 cfs of pass-through water is available at the large pump site, making water quantity less of a constraint than pump size. For this feasibility assessment, a flow rate of at least 20 cfs (9,000 gpm) has been assumed, but higher or lower flows could be pumped if desired by



increasing or decreasing the pump horsepower. To deliver 20 cfs, the large pump station will need to generate approximately 310 feet of total dynamic head (TDH).

The TDH calculation assumes:

- 3,400 feet of 36-inch fused high density polyethylene (HDPE) pipe (IPS, SDR 11, 29.1-inch I.D.)
- 7,100 feet of 36-inch HDPE pipe (IPS, SDR 17, 31.5-inch I.D.)
- Pumping water elevation of 2,882 feet at point of diversion
- A maximum pipeline elevation of 3,148 feet
- A pressure sustaining valve to maintain backpressure equal to 25 feet over the maximum elevation of the pipeline, equal to 3,173 feet
- Delivery to Billingsley Creek just downstream of the Bridge Diversion at Rangen

With a TDH of 310 feet and a delivery rate of 20 cfs (9,000 gpm), total brake horsepower (hp) required is 822 hp, or 411 hp per pump with two pumps running. The pumps would require nominal 450-hp motors. All three 450-hp pumps would be controlled by VFDs and paced off flow to maintain any operator-adjustable flow rate up to 20 cfs. System operation would be controlled by a programmable logic controller with remote monitoring and auto-restart capabilities. The packaged pump station would include an isolation and check valve on each pump, a mainline butterfly valve, pressure relief valve, combination air valve, and a flow meter. A generator to provide emergency power is currently not anticipated for the large pump station, but could be added if deemed necessary. The pump station would be enclosed for protection from weather and to provide sound attenuation. The insulated enclosure would be heated and ventilated so it can be used year-round.

If a constant flow is less critical for the large pump station, three 300-hp pumps could be utilized without having a spare pump in stand-by. If one of the pumps needed repaired, the flows would be decreased until that pump was operational again.

A tentative location for the pump station is identified in Figure 2 as "Raceway Diversion". A final location would be identified in future design documents. The final location will depend on the topographical survey, power availability, existing site infrastructure, constructability, SeaPac input, and other factors.

During the initial site visit to Magic Springs on August 13, 2014, overhead 3-phase power was identified directly above the proposed pump station location. However, it is not known if there is adequate capacity to add this pump station. Idaho Power will be contacted to determine power availability at Magic Springs and to identify any distribution system upgrades necessary.

For information purposes, the assumed 20 cfs pump station would be capable of delivering up to 21 cfs (9,500 gpm) using the two 450-hp pumps or three 300-hp pumps. However, if the pumps were downsized to two 400-hp pumps they could still deliver up to 19 cfs (8,500 gpm).

### **3.4. Delivery to Rangen**

The Rangen pipeline would connect to the existing 14-inch pipeline between the hatch house and the small raceway. A pressure sustaining valve would be provided immediately upstream of the tie-in point to maintain a minimum upstream pressure in the pipeline under all static and operating conditions. The pressure sustaining valve would ensure a full pipeline upstream of the valve and that enough pumping head is developed to transport water over the mainline high-point without creating a vacuum condition. Isolation valves would be installed on either side of the pressure sustaining valve to allow for maintenance. A bypass line with an isolation valve would be installed around the pressure sustaining valve so delivery could be maintained to Rangen even if the pressure sustaining valve is out of service for maintenance or repair. The pressure sustaining valve would be housed in a buried vault on Rangen property.

Directly downstream of the valve vault, the new pipeline would connect by tee to the existing 14-inch buried steel pipeline that exists between the hatch house and the small raceway. A 14-inch butterfly valve would be installed on the small raceway leg of the tee to allow control of flow to the small raceway. There is an existing 14-inch valve located in a vault near the hatch house that could be used to control flow from or to the Rangen Box. In addition, there is an existing valve and lateral that can be used to direct flow from the 14-inch pipeline to the hatch house.

The existing 14-inch pipeline transports water from the Rangen Box to the small raceways. The pipe from Magic Springs would tie-in to this 14-inch pipe, allowing flows to be directly delivered to the small raceways through the 14-inch pipe, or to the large raceways in two ways: (1) after water flows through the small raceways via an existing 18-inch diameter pipeline and (2) through the Bridge Diversion in Billingsley Creek which can receive water spilled from the Rangen Box. The preliminary design assumes 4 cfs would be delivered to the small raceways and 6 cfs would be delivered to the Rangen Box. However, if the small raceways can take additional flow, a larger portion of the 10 cfs can be sent that direction. The distribution of water between the small raceways and the Rangen Box would be adjusted by opening or closing a 14-inch butterfly valve that would be installed on the small raceway leg of the tee.

### **3.5. Delivery to Billingsley Creek and/or the Curren Ditch**

If delivery of pass-through water from Magic Springs is desired directly into Billingsley Creek the large pipeline could parallel the 10 cfs pipeline and deliver to Billingsley Creek just downstream of the Bridge Diversion on Rangen property. This location is shown on Figure 3. If Rangen is unwilling to allow delivery of water at this location, water could be delivered into Billingsley Creek just west of S 1175 E, with access through property owned by Walter Candy and the Jones Family Trust. This alternate location is also shown on Figure 3. In either point of delivery location, flows will mix with Rangen's discharge and can be diverted into the Curren Ditch from Billingsley Creek if desired.

If it is determined the Magic Springs' pass-through water is not needed or wanted in Billingsley Creek, then the pipeline could be shortened and tied directly into the Sandy

Pipeline on Butch Morris property. This would allow the Magic Springs water to supplement Sandy Pond water during the irrigation season and provide the Curren Ditch with flow during the non-irrigation season.

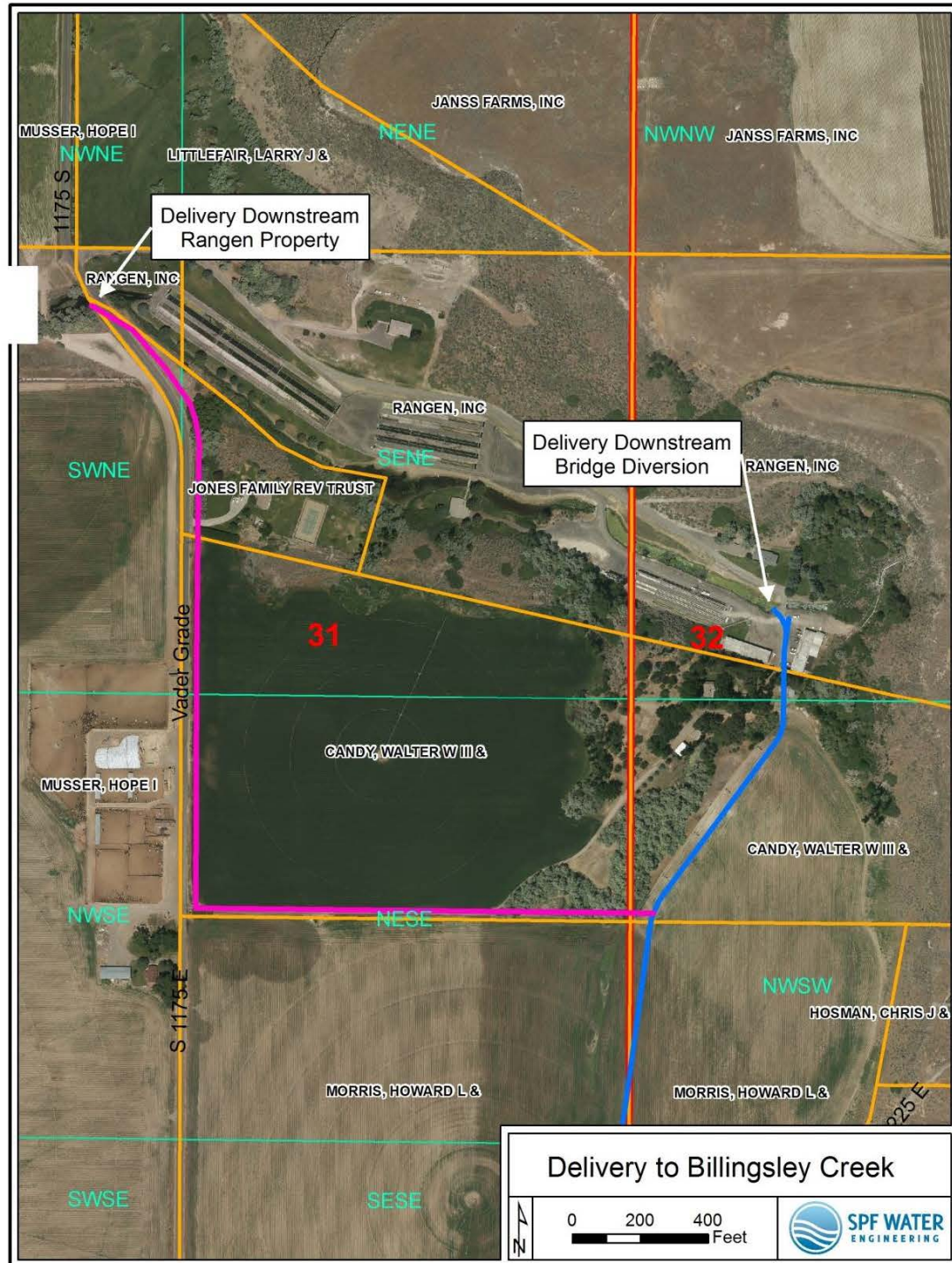


Figure 3. Delivery to Billingsley Creek

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## 4. Permitting

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If the project is constructed, the pipeline contractor will be required to obtain a permit from the HHD and pay any associated fees required at the time of construction.

A 404 permit from the US Army Corps of Engineers will be required if fill is placed in a water of the US or jurisdictional wetlands are impacted. This may be applicable at the Spring Diversion location and for installation of the pipeline in certain areas. It is not anticipated that a 404 permit would be required for the Raceway Diversion. The 404 joint application is also reviewed by the IDWR, which may also issue a stream alteration permit, and the Idaho Department of Environmental Quality which issues 401 water quality certifications. If the Spring Diversion location is identified as habitat for the threatened snail, the US Fish and Wildlife Service will also review the permit and mitigation may be required. It is possible to avoid the 404 permit associated with the Spring Diversion, if the inlet piping to the north raceways can be intercepted and the spring pool is not impacted.

An NPDES permit is not anticipated at this time. It is assumed discharge from the Spring Diversion to Rangen and the Raceway Diversion downstream of the Bridge Diversion would both be covered by Rangen's existing NPDES. If the Raceway Diversion is discharged into Billingsley Creek downstream of Rangen's outfall or directly into the Curren Ditch, it is assumed it would be covered under SeaPac's NPDES permit for discharge into the Snake River.

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## 5. Project Cost Estimate

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### 5.1. Capital Construction Cost Estimate – 10 cfs Pump Station

The Preliminary Opinion of Probable Cost is based on direct vendor material pricing, contractor installation input, and historical information SPF had available. Pipe, fitting, and valve material costs were based on direct vendor pricing obtained in April 2014. Pipeline installation costs were developed based on information from reputable contractors. The preliminary design contemplates a skid-mounted packaged pump station, including pumps, mechanical piping, valves, flow meter, variable frequency drives (VFDs) and associated controls, generator, and enclosure. Costs for this packaged pump station were obtained from a packaged pump station vendor in July 2014.

The 10 cfs pump station estimate totals approximately \$1.8M, which includes a construction contingency and fees for engineering and construction services to design and support the construction effort. The estimate assumes an Idaho Power upgrade is not necessary. Table 1 summarizes the Preliminary Opinion of Probable Cost for the 10 cfs pump station.

Table 1. Preliminary Opinion of Probable Cost

MAGIC SPRINGS PROJECT PRELIMINARY OPINION OF PROBABLE COST Date: 8/17/2014				
ITEM	QTY	UNIT	UNIT PRICE	TOTAL
Pipe Material 24" IPS HDPE, DR11	2500	LF	\$66.58	\$ 166,450
Pipe Material 24" IPS HDPE, DR17	7000	LF	\$45.00	\$ 315,000
Open Trench Pipe Install 24" -- Flat	8500	LF	\$ 10.45	\$ 88,864
Open Trench Pipe Install 24" -- Steep	1000	LF	\$ 23.00	\$ 23,000
HDPE Fusing Operation	195	EA	\$ 257.78	\$ 50,267
Gravity 24" PVC Install	10	LF	\$ 200.00	\$ 2,000
Miscellaneous Site Prep	1	LS	\$ 5,000.00	\$ 5,000
Isolation Valve 24" Installed	1	EA	\$ 8,500.00	\$ 8,500
Isolation Valve 14" Installed	1	EA	\$ 4,200.00	\$ 4,200
Isolation Valve 12" Installed	3	EA	\$ 3,600.00	\$ 10,800
24" HDPE 90 Elbow Installed	2	EA	\$ 2,500.00	\$ 5,000
24" Electrofuse Coupler	4	EA	\$ 1,500.00	\$ 6,000
24" Flange Adapter	4	EA	\$ 1,000.00	\$ 4,000
Rangen Tie-in Assembly	1	LS	\$ 7,000.00	\$ 7,000
Drain Assemblies Complete	3	EA	\$ 1,750.00	\$ 5,250
Air-Vac Assemblies Complete	4	EA	\$ 2,750.00	\$ 11,000
Open Trench Road Crossing	50	LF	\$ 250.00	\$ 12,500
HDD Bore under road and canal	0	LF	\$ 350.00	\$ -
Spring Collection Structure	1	LS	\$ 5,000.00	\$ 5,000
Mechanical Piping	1	LS	\$ 5,000.00	\$ 5,000
Surge Mitigation Equipment (TBD)	1	LS	\$ 30,000.00	\$ 30,000
Pressure Sustaining valve/vault	1	LS	\$ 30,000.00	\$ 30,000
Enclosed Pump Station w Cans	1	LS	\$ 335,000.00	\$ 335,000
Pumpstation Slab	1	LS	\$ 5,000.00	\$ 5,000
Miscellaneous Electrical	1	LS	\$ 10,000.00	\$ 10,000
O.H. Power Supply	1	LS	\$ 26,000.00	\$ 26,000
Standby Generator	1	LS	\$ 165,000.00	\$ 165,000
Erosion & Sediment Control	1	LS	\$ 10,000.00	\$ 10,000
<b>Sub-Total</b>				<b>\$1,345,830</b>
<b>Mobilization 2%</b>				<b>\$ 26,917</b>
<b>Fees 1%</b>				<b>\$ 13,458</b>
<b>Contingency 20%</b>				<b>\$ 269,166</b>
<b>Engineering and CMS 11%</b>				<b>\$ 148,041</b>
<b>TOTAL</b>				<b>\$1,803,413</b>
Notes:				
1. This level Opinion of Probable Cost can be considered accurate to +30% or -20% and has been prepared for guidance in project decisions. The final project costs will vary from the numbers presented and will depend on final project scope, implementation schedule, continuity in project team, conditions required of the general contractor, actual site conditions, competitive market conditions, and actual material costs and labor rates.				
2. Piping, fitting, and valve material costs were based on direct vendor pricing, April 2014.				
3. Pump Station costs were based on direct vendor pricing, April & May 2014.				
4. No easement costs are included.				

## 5.2. Capital Construction Cost Estimate – Large Pump Station

The costs for the large pump station are less defined, as the pumps are much larger than the other options SPF has recently been estimating. However, based on information that was available it is assumed this system can be constructed in the \$2.8M to \$3.5M range. This assumes the large pump station pipeline is installed at the same time as the 10 cfs pump station pipeline and an Idaho Power upgrade is not necessary.

## 5.3. Annual System Operational Costs – 10 cfs Pump Station

If the Magic Springs Project is constructed there will be on-going operational and maintenance costs associated with the new system. On-going operational costs include electricity, operational labor, and preventative maintenance. A capital reserve fund is recommended to help with replacement costs of the equipment. The costs for the 10 cfs pump station are summarized in Table 2. Water quality testing may be required but is not included in this estimate. The most significant annual cost will be the electrical. Currently a \$0.06/kW-Hr cost is being used for the Idaho Power costs.

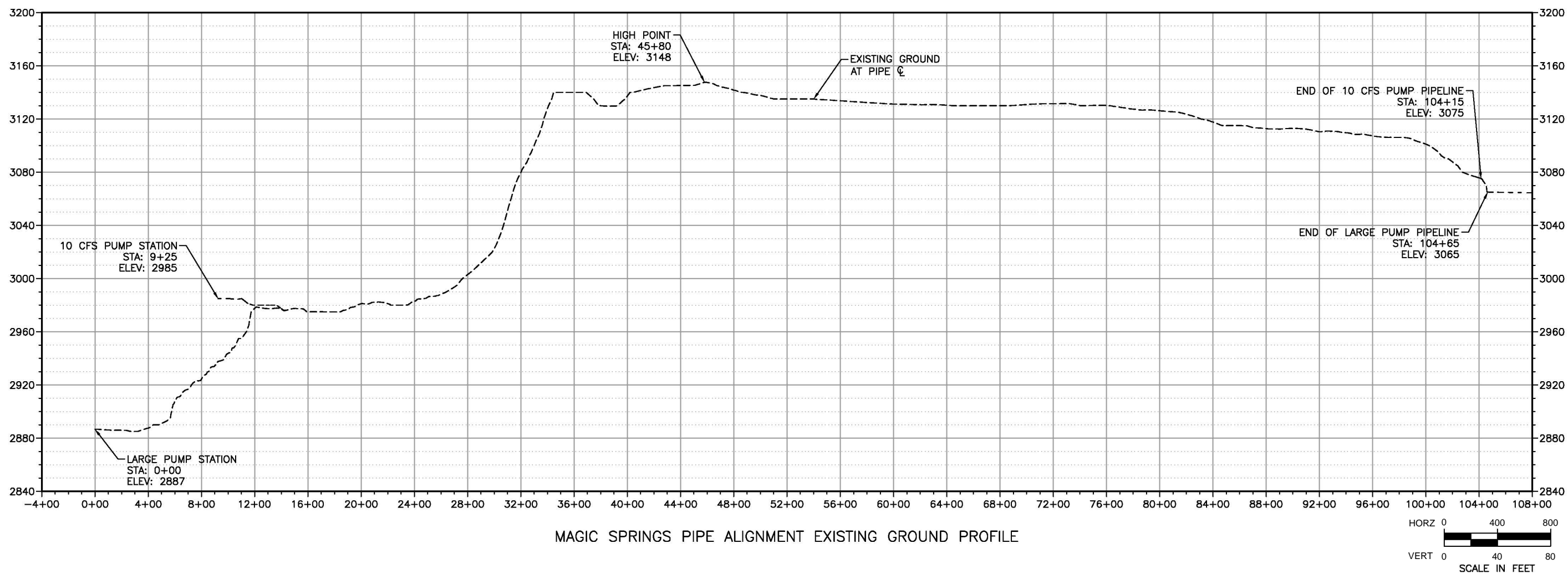
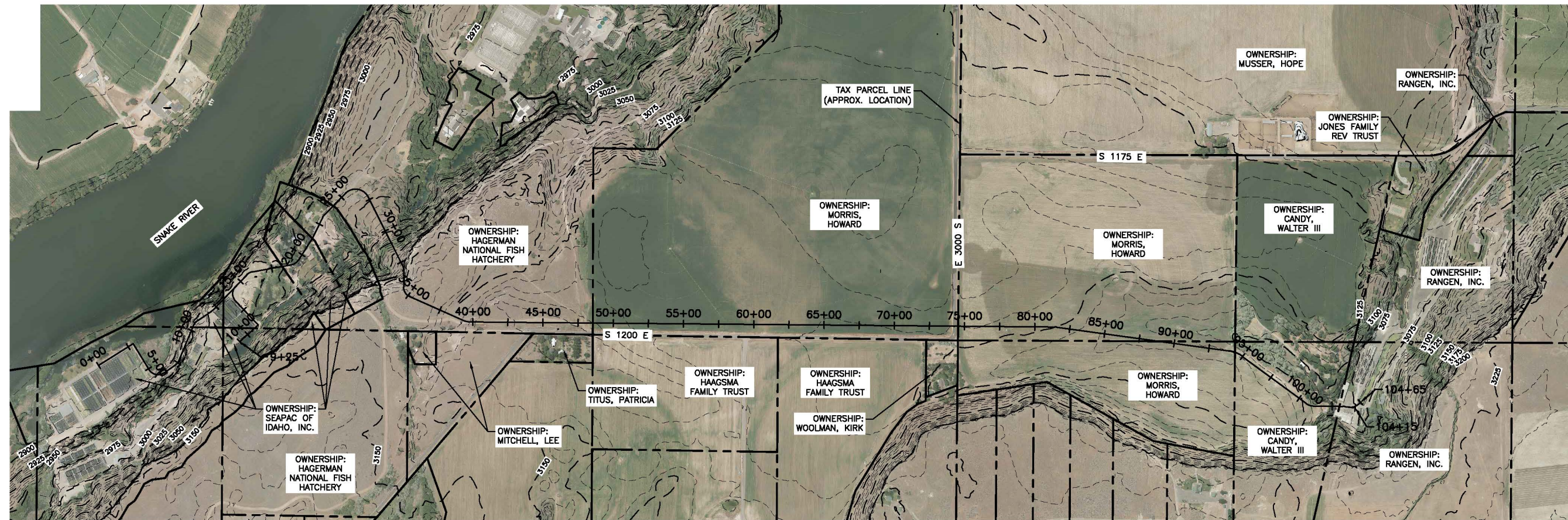
Operational costs have not been determined for the large pump station as of yet.

Table 2. Annual Operating Costs

Item	Annual Cost
2 - 200 HP Electrical Costs (\$0.06/kW-Hr)	\$120,740
Weekly Inspections (\$200/week)	\$10,400
Miscellaneous Maintenance	\$5,000
Remote Monitoring	\$2,450
Capital Reserve Fund	\$34,184
<b>TOTAL</b>	<b>\$172,774</b>

## **APPENDIX A: ALIGNMENT AND GROUND ELEVATION PROFILE**





Path: Y:\PROJECTS\535.0150\5HE File: 2014-08-15 EX-1 Magic Springs Plot date: Aug 15, 2014-10:27:56am CAD User: PCooper.  
Xref Filename: | 5350150 xr tb | 5350150-XR-301 AERIAL 5' | 5350150-XR-TOPO |

 **SPF WATER**  
ENGINEERING

300 East Mallard Drive, Suite 350  
Boise, Idaho 83706  
Tel (208) 383-4140 Fax (208) 383-4156

MAGIC SPRINGS PROJECT  
PUMP STATION AND PIPELINE  
CONCEPT PIPELINE EXISTING GROUND PROFILE

**PRELIMINARY  
DRAFT NOT FOR  
CONSTRUCTION**

<i><b>ITEM</b></i>	<i><b>REVISIONS</b></i>	
	<i><b>DESCRIPTION</b></i>	<i><b>DATE</b></i>
A	CONCEPT MEMORANDUM	8/15/14

VERIFY SCALE

0 1/2 1

BAR MEASURES ONE-INCH  
ON FULL SIZE DRAWING.

PROJECT:	535.0150
DESIGNED:	PZC
DRAWN:	PZC
CHECKED:	RRH

EX-1