

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-33712

Exam Date: 8/8/2014

1. Current Owner: ZOROCO INVESTMENTS LLC
20148 MONTE WAY
CALDWELL ID 83607
2. Accompanied by: Thomas Krasowski
Phone No: 208-888-3000
Address: PO Box 231; Notus, ID 83656
Relationship to Permit Holder: Contract Water Operator for ZoRoCo (IES Waterworks)
Accompanied by: Cordy Rost
Phone No: 208-475-1864 X 1690
Address: 6198 Treasure Valley Way; Nampa, ID 83687
Relationship to Permit Holder: Owner of ZoRoCo Investments

3. SOURCE TRIBUTARY
GROUND WATER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 63-21145 (Staker & Parson Companies – Stockwater, Domestic)
63-21146 (Staker & Parson Companies – Stockwater, Domestic)
63-21488 (Staker & Parson Companies – Irrigation)
2. Other water rights with the same point of diversion: None

C. DIVERSION AND DELIVERY SYSTEM**1. LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER SE1/4NE1/4 Sec. 22, Twp 04N, Rge 04W, B.M. CANYON County

Method of Determination: Visual inspection and GIS**2. PLACE OF USE:** COMMERCIAL

Twp	Rge	Sec	NE				NW				SW				SE				
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	Totals
04N	04W	22				X													

Method of Determination: Visual inspection and GPS

3. Yes Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.
Yes Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.
Yes Aerial Photo Attached (required for irrigation of 10+ acres).
Yes Photo of Diversion and System Attached

4.

Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
Well D0063846	Franklin Electric 230 V	5	234317	Franklin Electric	60FA5S4-PE

*Code to correspond with No. on map and aerial photo

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calibration Date
McCrometer Flow Meter	Propeller	MT	MT101	12-09522	3"	Unknown

2. Measurements: Measurement was obtained via the McCrometer Flow Meter installed in the water system, between the well and the facility influent line. During our beneficial use field examination, the well pump kicked on, and we were able to observe the flow meter as flow increased from 0 up to 70 GPM (0.156 CFS). [See Photos.]

E. FLOW CALCULATIONS

_____ Additional Computation Sheets Attached

Measured Method:

Measurement by McCrometer Flow Meter: $(70 \text{ GPM}) * (0.133681 \text{ GAL/CF}) / (60 \text{ SEC/MIN}) = 0.156 \text{ CFS}$

Pump Curve: Though the well pump is being operated at 70 GPM, it is designed to operate at 60 GPM or less. This means that the 60 GPM well was likely designed for an average discharge pressure of 60 psi, and a TDH of approximately 215 FT. We can observe both operation points on the pump curve.

	Volumetric Flow	Volumetric Flow	Total Dynamic Head	Average Pressure	Efficiency
Design	60 GPM	0.135 CFS	215 FT	60 PSI	55%
Operation	70 GPM	0.156 CFS	150 FT	60 PSI	50% or less

Permit Allowed = 0.140 CFS**Pump Curve = 0.156 CFS (70 GPM) or 0.135 CFS (60 GPM)****Measurement = 0.156 CFS**

License recommended for 0.140 CFS. The pump curve shows that the system was designed to operate at 60 GPM (0.134 CFS) or less. The McCrometer flow meter displayed that the system is being operated at 70 GPM (0.156 CFS). Because the permit was issued for only 0.140 CFS, it is the maximum flow rate licensable.

F. VOLUME CALCULATIONS1. Volume Calculations for Irrigation: Not Applicable

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = \underline{N/A}$$

$$V_{D.R.} = [\text{Diversion Rate (CFS)}] \times (\text{Days in Irrigation season}) \times 1.9835 = \underline{N/A}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = \underline{N/A}$$

2. Volume Calculations for Other Uses: Commercial

Cordy Rost, the owner and manager of the ZoRoCo, was able to assist in estimating each of the water uses onsite. Using his information, the calculations below add to 2.86 AF of well water each year.

Commercial Use Calculation = the Commercial use consisted of water use in the following areas: bathrooms, dishwashing in the quality laboratory, equipment cleaning with the Hotsy pressure washer, commercial kitchen sink, and in buttery spread production. (Total 1,163,993 Annual GAL) x (325,850 Gal. per AF) = 2.9 AF

- *Operation information*
 - 35 Employees per Shift
 - 2 Shifts per Day
 - 312 Approximate Working Days per Year (6 days each week)
- *Bathroom Water Use* = (15 GAL per Person per Shift) x (35 Employees per Shift) x (2 Shifts per Day) x (312 Working Days per Year) = 327,600 Annual GAL
- *Dishwashing in Quality Laboratory* = (100 GAL per Shift) x (35 Employees per Shift) x (2 Shifts per Day) x (312 Working Days per Year) = 62,400 Annual GAL
- *Equipment Cleaning with Hotsy Pressure Washer* = (1 Cleaning per Day) x (180 MIN Cleaning Duration) x (7.80 GPM Hotsy Wash Capacity) x (312 Working Days per Year) = 438,048 Annual GAL

- *Commercial Kitchen Sink* = (300 GAL per Day) x (312 Working Days per Year) = 93,600 Annual GAL
- *Buttery Spread Production* = (280,000 Units per Year) x (13 OZ per unit) x (35.5% Water by Volume per Unit) = 10,095 Annual GAL

Thomas Krasowski, ZoRoCo's contract Water System Operator (IES Waterworks), has conducted sporadic measurements on the water use using the McCrometer installed between the well and the facility influent pipe. Using his log, the maximum average daily use *within the development period* is 1235.9 gallons. Using this average for a year, the facility would use **1.2 AF per year**. Krasowski's log is summarized below.

Date	Flow Meter Reading (GAL)	Days Since Last Reading	Average Daily Gal Since Last Reading (GAL)	Date	Flow Meter Reading (GAL)	Days Since Last Reading	Average Daily Gal Since Last Reading (GAL)
12/28/2012	7050	11	179.1	10/1	208650	14	925.0
1/18/2013	7050	21	0.0	10/15	219570	14	780.0
1/31	12930	13	452.3	11/5	234140	21	639.8
2/7	17560	7	661.4	11/26	252420	21	870.5
2/19	25680	12	676.7	12/17	277180	21	1179.0
3/5	36470	14	770.7	1/8/2014	304370	22	1235.9
3/21	48150	16	730.0	1/21	319201	13	1140.8
4/11	63900	21	750.0	2/4	338860	14	1404.2
4/25	75190	14	806.4	2/18	354160	14	1092.9
5/14	88820	19	717.4	3/5	374940	15	1385.3
5/30	98800	16	623.8	3/17	393990	12	1587.5
6/17	111420	18	701.1	4/9	424280	23	1317.0
7/10	127340	23	692.2	4/22	442870	13	1430.0
7/17	134370	7	1004.3	5/13	471310	21	1354.3
7/22	138580	5	842.0	6/10	500920	28	1057.5
8/13	162460	22	1085.5	6/24	531190	14	2162.1
8/29	176430	16	873.1	7/8	548770	14	1255.7
9/10	188790	12	1030.0	7/22	571580	14	1629.3
9/17	195700	7	987.1	8/5	593640	14	1575.7

Difference in Volume Values

On the day of the field exam, Cordy Rost gave me estimations for his water use up to that date (August 8, 2014). ZoRoCo's permit development period ended on December 30, 2013—during a time when water use was ramping up, possibly due to the start of buttery spread production. From the start of 2014 onward, average facility water use has markedly increased. Theoretically, if the facility operated each work day based on the maximum 2162.1 GAL (Average Daily Gal Since Last Reading) value, it would utilize 2.1 AF per year. Because this usage occurred outside the permit development period, I recommend that ZoRoCo file a new application for permit for the increased usage.

G. NARRATIVE/REMARKS/COMMENTS

Background

Dan Nelson and I met Thomas Krasowski at the ZoRoCo facility well house on Friday, August 8, 2014 at 8:00 AM. Thomas is a "Responsible Charge Operator" (contracted third party water system operator) for ZoRoCo Investments. Within 15 minutes, Cordy Rost, the owner of ZoRoCo also arrived at the well to assist us with questions.

System Overview

We began the beneficial use examination at the well house at the southeast corner of the property. Dan and I learned that ZoRoCo is mainly a frozen food packaging facility, but they also manufacture a buttery spread product. Therefore, most of the water is used for sanitation purposes.

The 6" well (D0063846) was drilled in October of 2012. It is equipped with two pressure tanks, and the influent line to the facility is metered with a McCrometer flow meter. Inside the facility, employees use water for hand washing and restroom use (no showers), dishwashing in a product quality laboratory, equipment cleaning in the production area (Hotsy pressure washer), and commercial dish washing in the production area; additionally, water makes up 35.5% by volume of the buttery spread mixture produced. All of the facility wastewater is discharged to a subsurface sewage disposal system onsite.

Measurements and Methodology

I obtained a flow measurement via the McCrometer Flow Meter installed in the water system, between the well and the facility influent line. During the beneficial use field examination, the well pump kicked on, and we were able to observe the flow meter as flow increased from 0 GPM up to 70 GPM (0.156 CFS). In addition, ZoRoCo's contract Water System Operator (IES Waterworks), conducted sporadic measurements on the facility's water use using the system McCrometer. His log is replicated on page 3 of this report. At the examination, I used the Department's "Industrial Use Checklist" form to ask Cordy questions about the estimated water use in the facility. The calculations and values obtained from this interview are shown on page 2-3 of this report.

During the preparation of the field report, I examined the pump curve for the 60 GPM pump installed at the ZoRoCo packaging facility. The pump curve was inspected at the 60 GPM value and the 70 GPM values, in order to verify estimations of the system's TDH, pressure (PSI), and well pump placement. Because of the pump's correlation between GPM and TDH, I could not use standard theoretical calculations to replicate observed conditions and expected TDH values. In addition, the well log reveals a static water level 5 feet above the ground surface, but a 60 foot drawdown after 3 hours of pumping at 60 GPM. This presents a wide variability for pump placement in the column.

Overlapping Water Rights

ZoRoCo's place of use is overlapped by three water rights held by Staker & Parson Companies. These water rights are listed here: 63-21145 (Stockwater, Domestic); 63-21146 (Stockwater, Domestic); 63-21488 (Irrigation).

Conditions

- I removed condition 046, per standard licensing practice.
- I retained condition 01M.
- I changed condition 121 to 103 due to an update of condition language.
- I modified, but retained the unnumbered condition.

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS

1. Recommended Amounts

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
COMMERCIAL	01/01 to 12/31	0.140 CFS	1.20 AF
<u>Totals:</u>		0.140 CFS	1.20 AF

2. Recommended Amendments

☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☐ None

☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ Other

I. AUTHENTICATION

Ashley Newbry, Engineer Associate

Field Examiner's Name

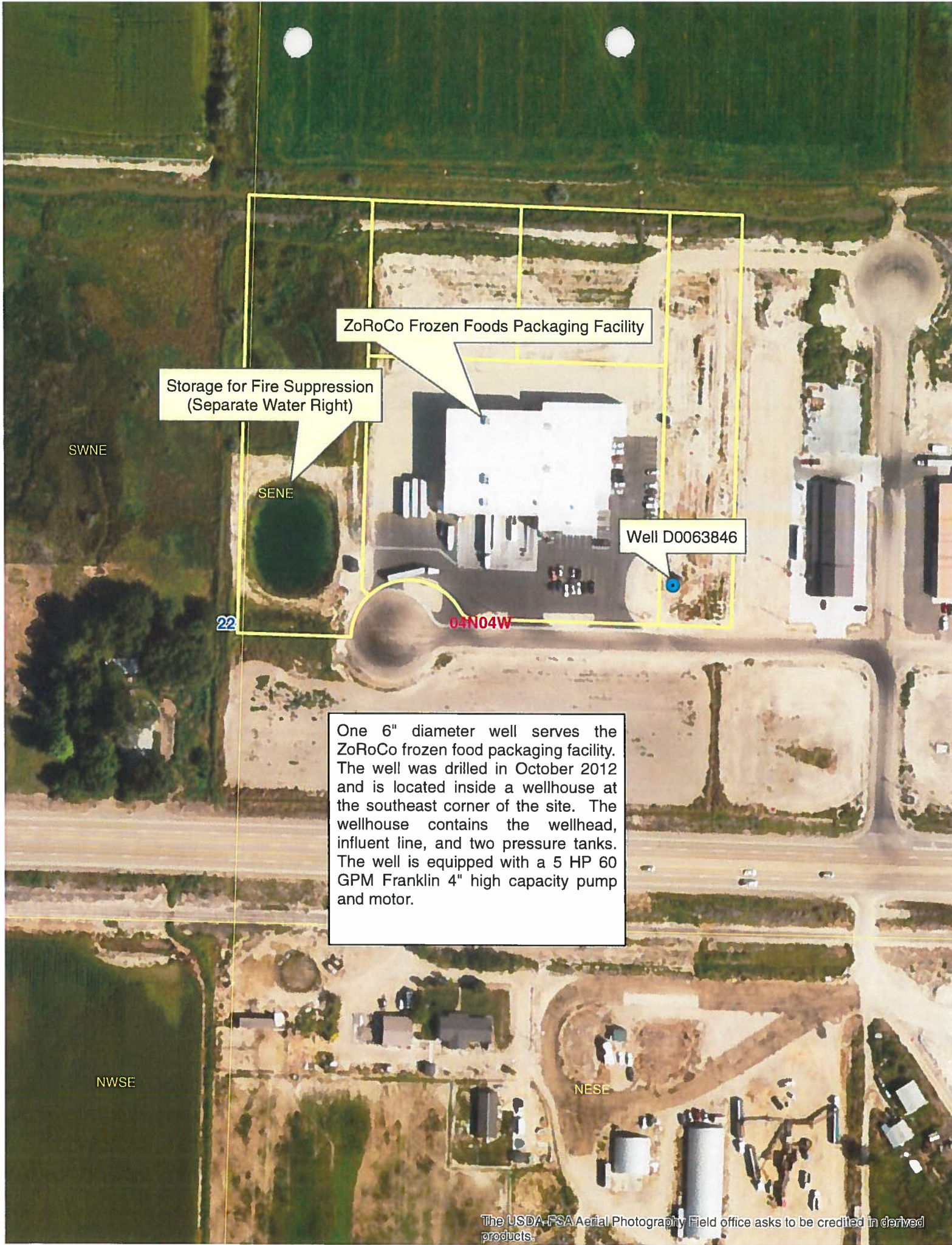
Ashley Newbry

Date

8/29/2014

Reviewer

Date



ZoRoCo Frozen Foods Packaging Facility

Storage for Fire Suppression
(Separate Water Right)

Well D0063846

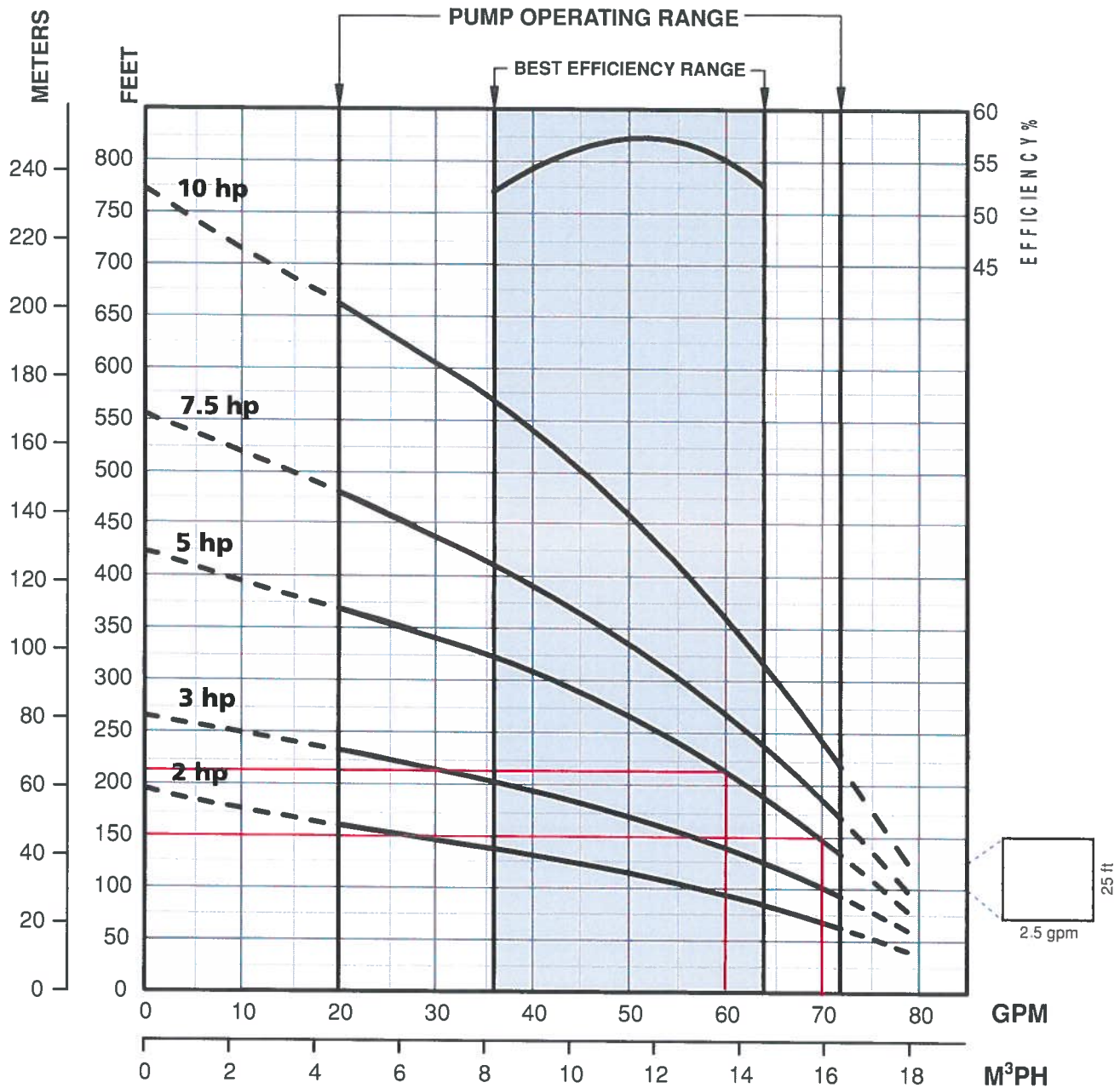
One 6" diameter well serves the ZoRoCo frozen food packaging facility. The well was drilled in October 2012 and is located inside a wellhouse at the southeast corner of the site. The wellhouse contains the wellhead, influent line, and two pressure tanks. The well is equipped with a 5 HP 60 GPM Franklin 4" high capacity pump and motor.

Submersible Pumps

4" High Capacity 60 gpm Performance Curves

PAGE: SP-65

DATE: July 23, 2009



FPS4400

Note: The ZoRoCo 63-33712 POU is overlapped by the 3 water rights held by Staker & Parson Companies - 63-21145; 63-21146; 63-21488.

Process	Basin Sequence	Draft	Owner	Source	POD/POU	NENE	NWNE	SWNE	SENE	NENW	NWNW	SWNW	SENW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE	Total Acres
Water Right	63-1618U	N	PIONEER IRRIGATION DISTRICT	BOISE RIVER	POU		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0
Water Right	63-20639	N	SMITH, GAYLEN E. SMITH,	GROUND WATER	POD											X						0
Water Right	63-20639	N	SMITH, GAYLEN E. SMITH,	GROUND WATER	POU											X						0
Water Right	63-20924	N	SCOTT, ANDREA	GROUND WATER	POD									X								0
Water Right	63-20924	N	SCOTT, ANDREA	GROUND WATER	POU									X								0
Water Right	63-2114	N	PIONEER IRRIGATION DISTRICT	INDIAN CREEK	POU		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0
Water Right	63-21145	N	STAKER & PARSON COMPANIES	GROUND WATER	POD				X													0
Water Right	63-21145	N	STAKER & PARSON COMPANIES	GROUND WATER	POU				X													0
Water Right	63-21146	N	STAKER & PARSON COMPANIES	GROUND WATER	POD				X													0
Water Right	63-21146	N	STAKER & PARSON COMPANIES	GROUND WATER	POU				X													0
Water Right	63-21488	N	STAKER & PARSON COMPANIES	UNNAMED DRAIN	POU	39.0			20.0													59
Water Right	63-21489	N	DJK LLC	UNNAMED DRAIN	POD			X														0
Water Right	63-21489	N	DJK LLC	UNNAMED DRAIN	POU		12.0	8.0														20
Water Right	63-21706	N	PIONEER IRRIGATION DISTRICT	BOISE RIVER	POU		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0
Water Right	63-21713	N	PIONEER IRRIGATION DISTRICT	PIPE GULCH DRAW CREEK	POU		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0
Water Right	63-21731	N	PIONEER IRRIGATION DISTRICT	FIVEMILE CREEK	POU		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0
Water Right	63-21739	N	PIONEER IRRIGATION DISTRICT	ELIJAH DRAIN	POU		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0
Water Right	63-224	N	PIONEER IRRIGATION DISTRICT	BOISE RIVER	POU		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0
Water Right	63-225	N	PIONEER IRRIGATION DISTRICT	BOISE RIVER	POU		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0
Water Right	63-2275	N	PIONEER IRRIGATION DISTRICT	WILSON DRAIN	POU		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0
Water Right	63-2276	N	PIONEER IRRIGATION DISTRICT	MASON CREEK	POU		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0
Water Right	63-2294	N	PIONEER IRRIGATION DISTRICT	FIVEMILE CREEK	POU		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0
Water Right	63-23635	N	MC INDOO, BETTY; MC INDOO, CECIL	GROUND WATER	POD						X											0
Water Right	63-23635	N	MC INDOO, BETTY; MC INDOO, CECIL	GROUND WATER	POU						X											0
Water Right	63-23636	N	MC INDOO, BETTY; MC INDOO, CECIL	GROUND WATER	POD						X											0
Water Right	63-23636	N	MC INDOO, BETTY; MC INDOO, CECIL	GROUND WATER	POU						X											0
Water Right	63-24030	N	WINSLOW, ELTON G; WINSLOW, LAVERN	GROUND WATER	POD															X		0
Water Right	63-24030	N	WINSLOW, ELTON G; WINSLOW, LAVERN	GROUND WATER	POU															X		0
Water Right	63-2529A	N	PIONEER IRRIGATION DISTRICT	GROUND WATER	POD																X	0
Water Right	63-2529A	N	PIONEER IRRIGATION DISTRICT	GROUND WATER	POU		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0
Water Right	63-2529B	N	PIONEER IRRIGATION DISTRICT	INDIAN CREEK	POU		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0
Water Right	63-25866	N	TUNING, MERL; TUNING, VIRGINIA	GROUND WATER	POD									X								0
Water Right	63-25866	N	TUNING, MERL; TUNING, VIRGINIA	GROUND WATER	POU									X								0
Water Right	63-26022	N	TUCKER, L LOUISE; TUCKER, R WARD	GROUND WATER	POD											X						0
Water Right	63-26022	N	TUCKER, L LOUISE; TUCKER, R WARD	GROUND WATER	POU											X						0
Water Right	63-26212	N	PETERSEN, DANIEL; PETERSEN, DAYLENE	GROUND WATER	POD											X						0

Water Right	63-26212	N	PETERSEN, DANIEL; PETERSEN, DAYLENE	GROUND WATER	POU									X						0
Water Right	63-26503	N	MC INDOO, DENNIS; MC INDOO, JANIS	GROUND WATER	POD						X									0
Water Right	63-26503	N	MC INDOO, DENNIS; MC INDOO, JANIS	GROUND WATER	POU						X									0
Water Right	63-26754	N	SZAFRAJDA, DAVID J; SZAFRAJDA, DORIS J	GROUND WATER	POD			X												0
Water Right	63-26754	N	SZAFRAJDA, DAVID J; SZAFRAJDA, DORIS J	GROUND WATER	POU			X												0
Water Right	63-27398	N	MURRAY, LINDA K; MURRAY,	GROUND WATER	POD					X										0
Water Right	63-27398	N	MURRAY, LINDA K; MURRAY,	GROUND WATER	POU					X										0
Water Right	63-27400	N	MURRAY JR, WILLIAM L; MURRAY, LINDA K	GROUND WATER	POD					X										0
Water Right	63-27400	N	MURRAY JR, WILLIAM L; MURRAY, LINDA K	GROUND WATER	POU					X										0
Water Right	63-27753	N	DEAN, JOHN P; DEAN, OLIVIA	GROUND WATER	POD								X							0
Water Right	63-27753	N	DEAN, JOHN P; DEAN, OLIVIA	GROUND WATER	POU								X							0
Water Right	63-28835	N	NICHOLS, GEORGE W; NICHOLS, MABEL L	GROUND WATER	POD								X							0
Water Right	63-28835	N	NICHOLS, GEORGE W; NICHOLS, MABEL L	GROUND WATER	POU								X							0
Water Right	63-2891	N	PIONEER IRRIGATION DISTRICT	WILSON DRAIN	POU		X	X	X	X	X	X	X	X	X	X	X	X	X	0
Water Right	63-294	N	PIONEER IRRIGATION DISTRICT	BOISE RIVER	POU		X	X	X	X	X	X	X	X	X	X	X	X	X	0
Water Right	63-295	N	PIONEER IRRIGATION DISTRICT	BOISE RIVER	POU		X	X	X	X	X	X	X	X	X	X	X	X	X	0
Water Right	63-31787	N	CITY OF GREENLEAF	GROUND WATER	POU						X			X						0
Water Permit	63-32084	N	EAGLE PRECAST CO	GROUND WATER	POD												X			0
Water Permit	63-32084	N	EAGLE PRECAST CO	GROUND WATER	POU												X			0
Water Right	63-32514	N	PIONEER IRRIGATION DISTRICT	FIVE MILE CREEK	POU		X	X	X	X	X	X	X	X	X	X	X	X	X	0
Water Right	63-32515	N	PIONEER IRRIGATION DISTRICT	MASON CREEK	POU		X	X	X	X	X	X	X	X	X	X	X	X	X	0
Water Right	63-32584	N	PIONEER IRRIGATION DISTRICT	INDIAN CREEK	POU		X	X	X	X	X	X	X	X	X	X	X	X	X	0
Water Permit	63-33674	N	ZOROCO INVESTMENTS LLC	GROUND WATER	POD				X											0
Water Permit	63-33674	N	ZOROCO INVESTMENTS LLC	GROUND WATER	POU				X											0
Water Permit	63-33712	N	ZOROCO INVESTMENTS LLC	GROUND WATER	POD				X											0
Water Permit	63-33712	N	ZOROCO INVESTMENTS LLC	GROUND WATER	POU				X											0
Water Right	63-371	N	PIONEER IRRIGATION DISTRICT	BOISE RIVER	POU		X	X	X	X	X	X	X	X	X	X	X	X	X	0
Water Right	63-4117	N	CITY OF GREENLEAF	GROUND WATER	POU						X			X						0
Water Right	63-5104	N	MILLS, ANNA L	GROUND WATER	POD								X							0
Water Right	63-5104	N	MILLS, ANNA L	GROUND WATER	POU								X							0
Water Right	63-5199	N	PIONEER IRRIGATION DISTRICT	GROUND WATER	POU		X	X	X	X	X	X	X	X	X	X	X	X	X	0
Water Right	63-5200	N	PIONEER IRRIGATION DISTRICT	GROUND WATER	POU		X	X	X	X	X	X	X	X	X	X	X	X	X	0
Water Right	63-5219	N	PIONEER IRRIGATION DISTRICT	INDIAN CREEK	POU		X	X	X	X	X	X	X	X	X	X	X	X	X	0
Water Right	63-5237	N	PIONEER IRRIGATION DISTRICT	INDIAN CREEK	POU		X	X	X	X	X	X	X	X	X	X	X	X	X	0
Water Right	63-5255	N	PIONEER IRRIGATION DISTRICT	INDIAN CREEK	POU		X	X	X	X	X	X	X	X	X	X	X	X	X	0
Water Right	63-7094	N	CITY OF GREENLEAF	GROUND WATER	POU						X			X						0
Water Right	63-8640	N	DIXON, BONITA A; DIXON, DAN	GROUND WATER	POU									4.0						4
Water Right	63-9109	N	PIONEER IRRIGATION DISTRICT	GROUND WATER	POU		X	X	X	X	X	X	X	X	X	X	X	X	X	0

PHOTOGRAPHER AND DATE OF PHOTOS ASHLEY NEWBRY • August 8, 2014

FILE NUMBER 63-33712



This photo shows the well house at the southeast corner of the property (left). The well pump controller (center) information and statistics (right) are posted for easy reference and access.



The well tag (left) and wellhead (center) are shown in the photos above. The influent pipe (right) to the facility is also pictured. All of these diversion works are situated inside the well house.



The McCrometer Flow meter (left and center) is shown with its serial information (right) above.



ProFlex 2 pressure tanks are shown (left and center). When pressure reached 50 psi, the pump turned on (right).



The ZoRoCo frozen foods packaging facility (left) is shown above. There is a hand washing area (center) just outside the packaging room. Additionally, a quality lab (right) is used for product testing.



The facility is equipped with interior restrooms (left) a break room area (center). The commercial kitchen sink (right) is located in the packaging room.



The Hotsy high-temperature pressure washer is used to clean the packaging equipment at the end of each day (all photos above).