

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

RECEIVED

JUL 30 2018

DEPARTMENT OF
WATER RESOURCES

A Beneficial Use Field Report is prepared by a water right examiner as the result of an examination to clearly confirm and establish the extent of the beneficial use of water established in connection with a permit during the development period authorized by the permit and any extensions of time previously approved.

A. GENERAL INFORMATIONPermit No. 98-79251. Owner Essential Oil Research Farm, LLC

Phone No. _____

Current address 3125 West Executive Parkway, Lehi, UT 840432. Examiner's name Scott N. King, P.E. (C.E 133)EXAM DATE October 11, 20163. Accompanied by Brett Packer

Email _____

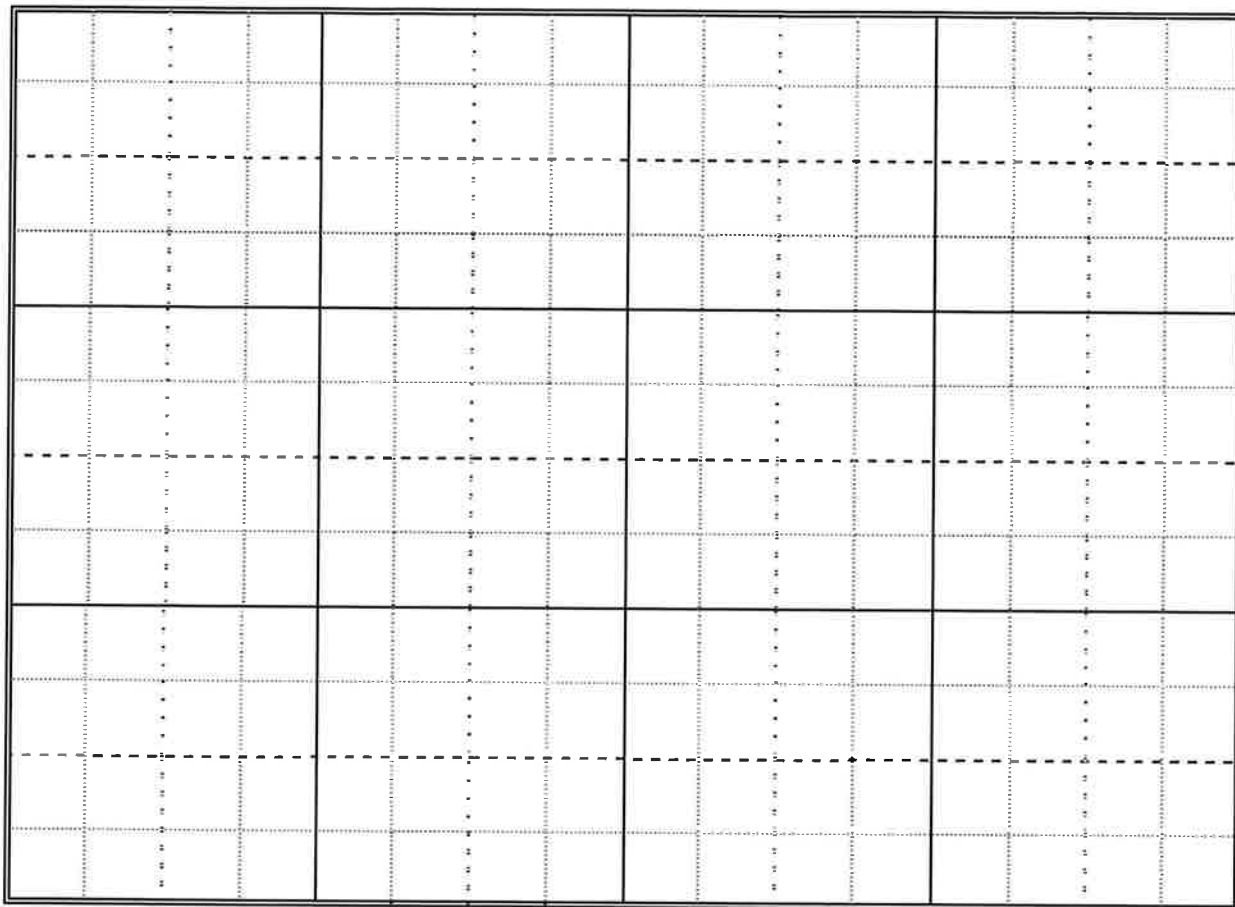
Address PO Box 362, Naples, ID 83847Relationship to permit holder Farm ManagerPhone No. 208-597-65584. Source unnamed streamtributary to Fall Creek**B. OVERLAP REVIEW**1. Other water rights with the same place of use 98-7750 (Cabinet Mountains Water District)2. Other water rights with the same source and point of diversion None.**C. DIVERSION AND DELIVERY SYSTEM**1. **Point(s) of Diversion:**

Ident. No.	Gov't Lot	¼	¼	¼	Sec	Twp	Rge	County	Method of Determination/Remarks
1		SE	SW	SE	3	60N	1W	Boundary	On site determination, GPS

2. **Place(s) of Use:**Method of determination 2015 NAIP Photography; GPS; On-site visit.

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
60N	1W	3															C,S		

3. **Delivery System Diagram:** Indicate all major components and distances between components. Indicate weir size/ditch size/pipe diameter (inside), as applicable. Use the space provided or ☒ see attached.



Scale: 1" = _____

- ☒ Copy of USGS Quadrangle attached showing location(s) of point(s) of diversion and place(s) of use (**required**)
☐ Aerial photo attached (required for irrigation of 10+ acres)
☒ 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
1	Unknown	20	Unknown	Grundfos	Model 230S, 6 stage

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

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
None						

2. **Measurements:** _____

Pump curve for 20-hp Grundfos submersible pump indicates a designed capacity of 250 gpm.

E. NARRATIVE/REMARKS/COMMENTS

A storage pond on an unnamed stream provides the point of diversion. A submersible pump diverts from the pond to the distillation facility and unless used in the facility, diverted water returns back to the unnamed stream upstream of the point of diversion and pond pump (see map). Water was used during the 2013/2014 season for cooling. Since that time, the system has been modified and the water is not used for direct cooling, but is used for a back-up make-up water supply for the closed-loop cooling system. The water is available for fire protection.

Cooling Storage = pond size (2.92 af) + evaporation (1.42 af) + cooling (6.65 af) = 11.0 af

Cooling From Storage = 6.7 af

Fire Protection Storage = pond size (2.92 af) + evaporation (1.42 af) = 4.3 af

Has the permit holder met all conditions of permit approval, including any mitigation requirements and/or measuring device installation requirements? ☒ Yes ☐ No If no, what must be done to meet the permit requirements?

Condition 6: Reservoir storage capacity is calculated at 2.9 acre-feet which is less than the 22 acre-feet maximum.

Condition 8 states that the use will be non-consumptive. However, the permitted pond storage volume included a surface evaporation component, which is consumptive. The calculated evaporation for permit approval was 6.7 afa. The calculated evaporation for the current facility is 1.87 afa. Use in the cooling system as make-up water is consumptive.

Condition 10 requires a certificate of approval per the dam safety provisions of Idaho Code. The permit holder's engineer provided a letter to IDWR dated November 7, 2014 stating that the dam's reconstructed hydraulic height is 9.6 feet. The reconstructed dam is not jurisdictional per Idaho Code 42-1711 and therefore this condition is no longer applicable.

F. FLOW CALCULATIONS☐ Additional computation sheets attached

Measured Method:

Discharge not measured. Capacity of 20-hp Grundfos pump is approximately 0.56 cfs which is sufficient to supply the permitted rate of 0.11 cfs.

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

 $V_{I,R} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$ _____

 $V_{D,R} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 =$ _____

 $V = \text{Smaller of } V_{I,R} \text{ and } V_{D,R} =$ _____

2. Volume Calculations for Other Uses:

Storage Volume: Pond volume = 0.76 acres (area) x 9.6 ft (height) x 0.4 (factor) = 2.92 acre-feet

Evaporation = 0.76 acres (area) x 1.87 ft/yr (pdef, ETIdaho2012, Bonners Ferry) = 1.42 acre-feet

Cooling = 0.11 cfs x 1.9835 af/cfs-day x 12/24 hrs/day x 61 days = 6.65 acre-feet

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use		Rate of Diversion Q (cfs)	Annual Volume V (afa)
	From	To		
Cooling Storage	1/1	12/31		11 afa
Cooling From Storage	12/1	3/31		6.7 afa
Fire Protection Storage	1/1	12/31		4.3 afa
Cooling	12/1	3/31	0.11 cfs	
Totals:			0.11 cfs	11 afa

2. Recommended Amendments

☐ Change P.D. as reflected on page 1☐ Add P.D. as reflected on page 1☒ None☐ Change P.U. as reflected on page 1☐ Add P.U. as reflected on page 1☐ Other**I. AUTHENTICATION**

Field Examiner's Signature

*Scott N. King*Date *July 23, 2018*

Reviewer _____

Date _____



ATTACHMENT A

PERMIT RECORD AND PROOF OF BENEFICIAL USE

State of Idaho
Department of Water Resources
Permit to Appropriate Water

NO. 98-07925

Priority: June 14, 2013

Maximum Diversion Rate: 0.11 CFS
Maximum Diversion Volume: 58.7 AF

This is to certify, that YOUNG LIVING FARMS
PO BOX 362
NAPLES ID 83847
(208) 946-7137

has applied for a permit to appropriate water from:

Source: UNNAMED STREAM**Tributary:** FALL CREEK

and a permit is APPROVED for development of water as follows:

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>RATE OF DIVERSION</u>	<u>ANNUAL VOLUME</u>
COOLING STORAGE	01/01 to 12/31		58.7 AF
COOLING FROM STORAGE	12/01 to 03/31		30.0 AF
FIRE PROTECTION STORAGE	01/01 to 12/31		28.7 AF
COOLING	12/01 to 03/31	0.11 CFS	

LOCATION OF POINT(S) OF DIVERSION:

UNNAMED STREAM, SW1/4SE1/4, Sec. 3, Twp 60N, Rge 01W, B.M., BOUNDARY County

PLACE OF USE: COOLING STORAGE, FIRE PROTECTION STORAGE

Twp	Rge	Sec	NE				NW				SW				SE				Totals	
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE		
60N	01W	3																	X	X

PLACE OF USE: COOLING FROM STORAGE, COOLING

Twp	Rge	Sec	NE				NW				SW				SE				Totals	
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE		
60N	01W	3																	X	

State of Idaho
Department of Water Resources
Permit to Appropriate Water
NO. 98-07925

CONDITIONS OF APPROVAL

1. Proof of application of water to beneficial use shall be submitted on or before **December 01, 2018**.
2. Subject to all prior water rights.
3. This right does not grant any right-of-way or easement across the land of another.
4. Project construction shall commence within one year from the date of permit issuance and shall proceed diligently to completion unless it can be shown to the satisfaction of the Director of the Department of Water Resources that delays were due to circumstances over which the permit holder had no control.
5. Water shall not be diverted from fire protection storage except to fight or repel an existing fire.
6. The pond or reservoir established by the storage of water under this right shall not exceed a total capacity of 22 acre-feet.
7. This right authorizes the annual storage of 58.7 acre-feet to be used for the initial filling of the pond or reservoir, for the replacement of losses caused by evaporation from the pond or reservoir and for the storage of water for cooling and fire protection purposes.
8. Use of water under this right shall be non-consumptive.
9. Prior to the diversion and use of water under this approval, the right holder shall comply with applicable county zoning and use ordinances.
10. The impoundment of water under this right is contingent upon the issuance of a certificate of approval per the dam safety provisions of Idaho Code and subsequent written authorization by the dam safety program administered by the Department.

This permit is issued pursuant to the provisions of Section 42-204, Idaho Code. Witness the signature of the Director, affixed at Coeur d'Alene, this 30 day of November, 2019.


For, GARY SPACKMAN, Director

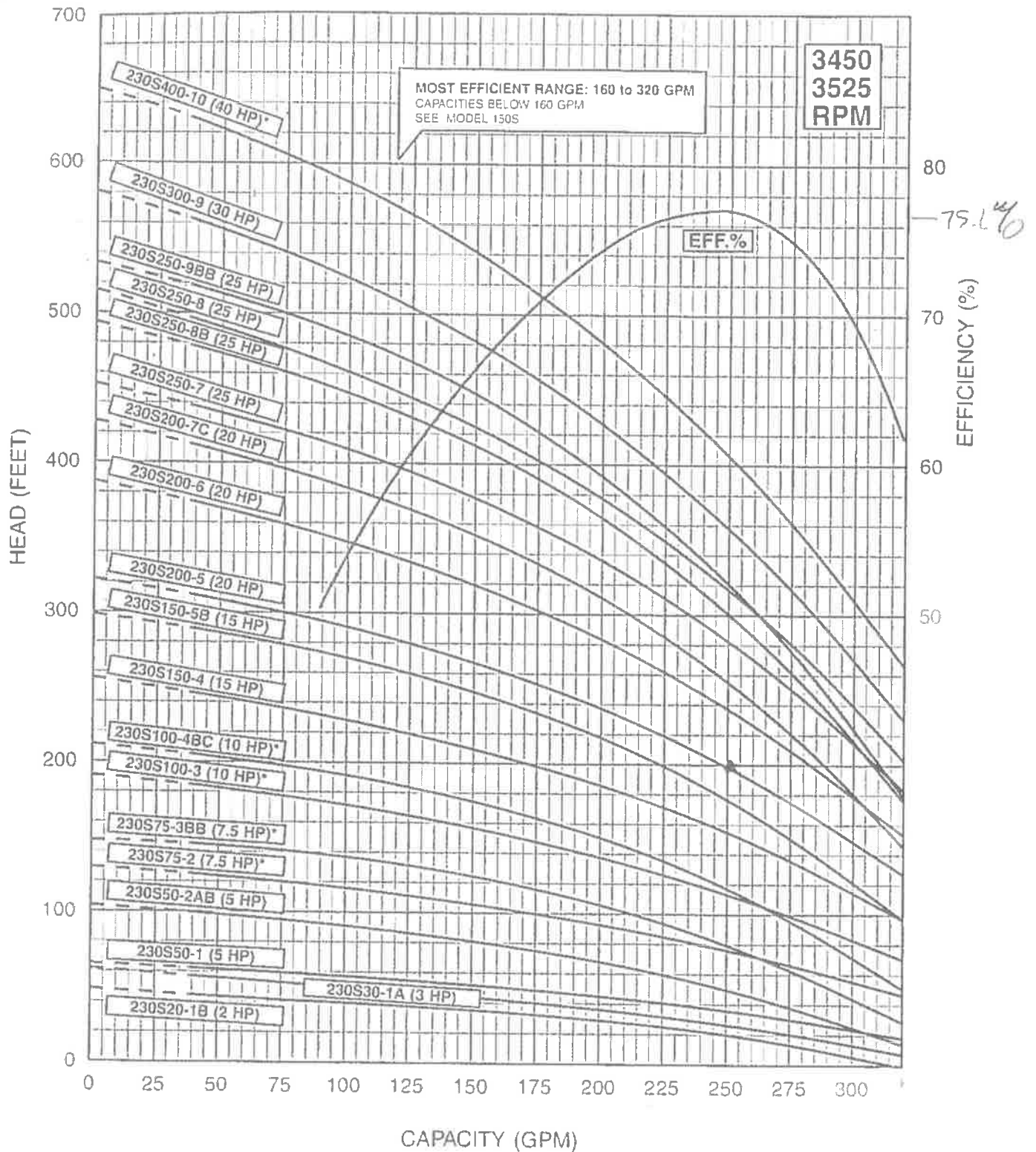
ATTACHMENT B

PUMP CURVES

FLOW RANGE: 160-320 GPM

OUTLET SIZE: 3" NPT

NOMINAL DIA. 6"



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

4" MOTOR STANDARD 7.5 HP/3450 RPM

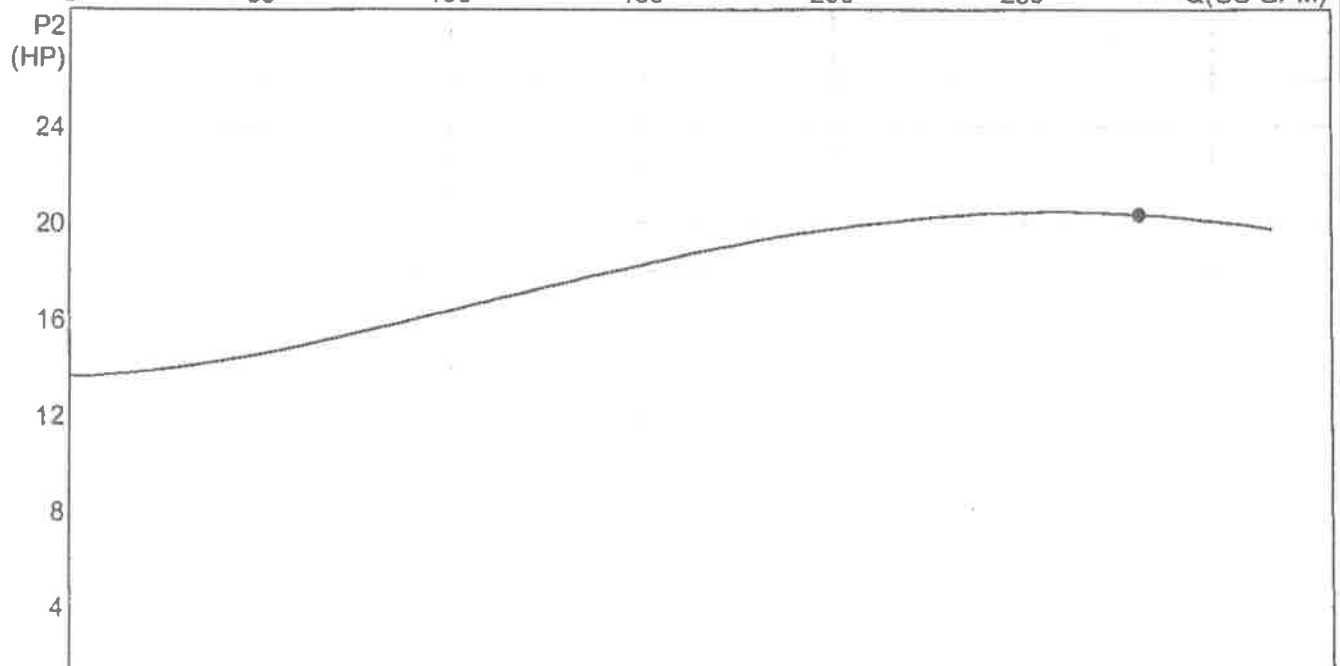
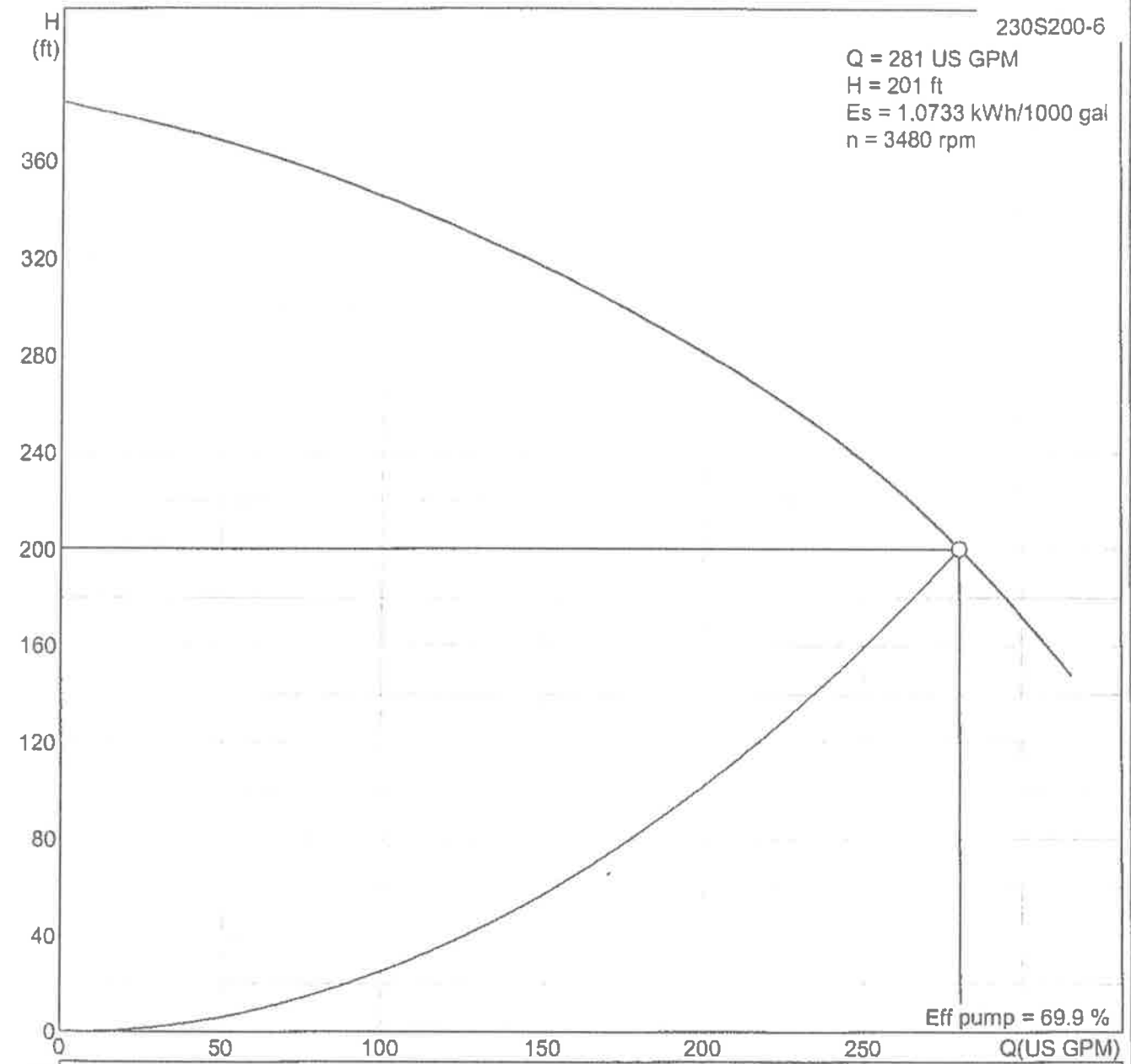
6" MOTOR STANDARD 10-60 HP/3450 RPM

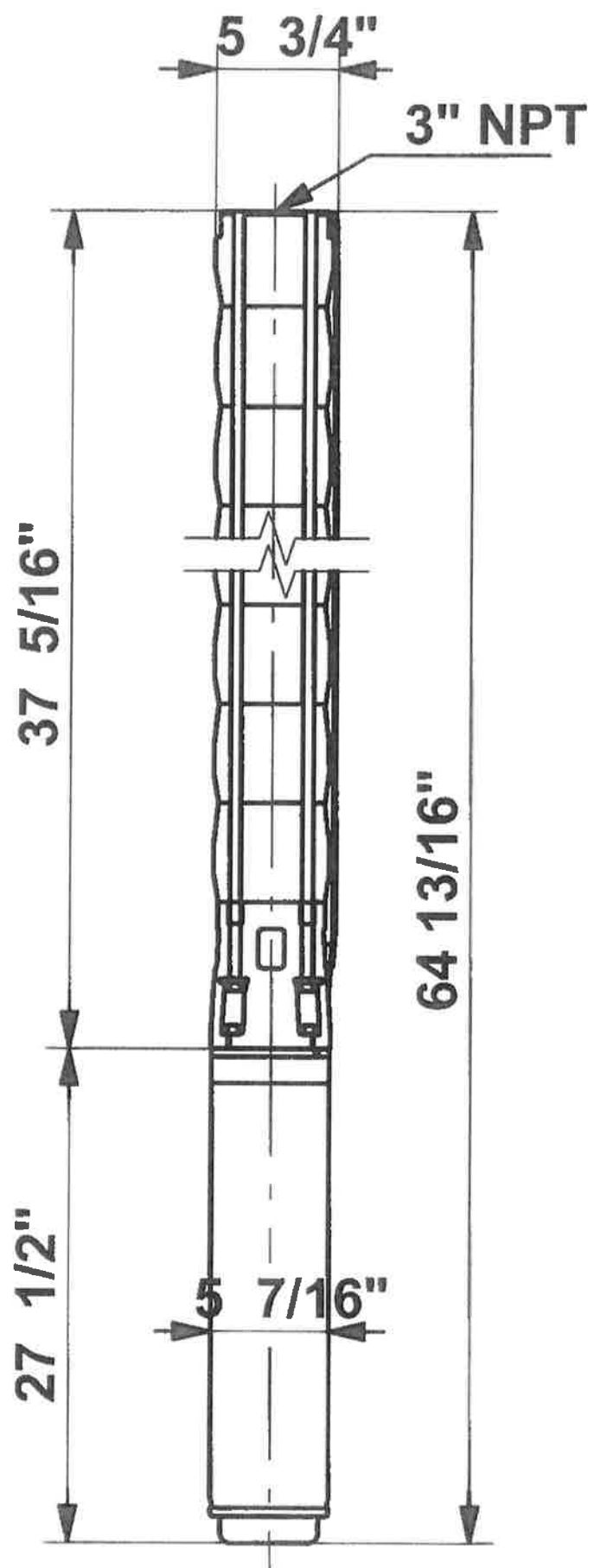
8" MOTOR STANDARD 75 HP/3525 RPM

* Alternate motor sizes available

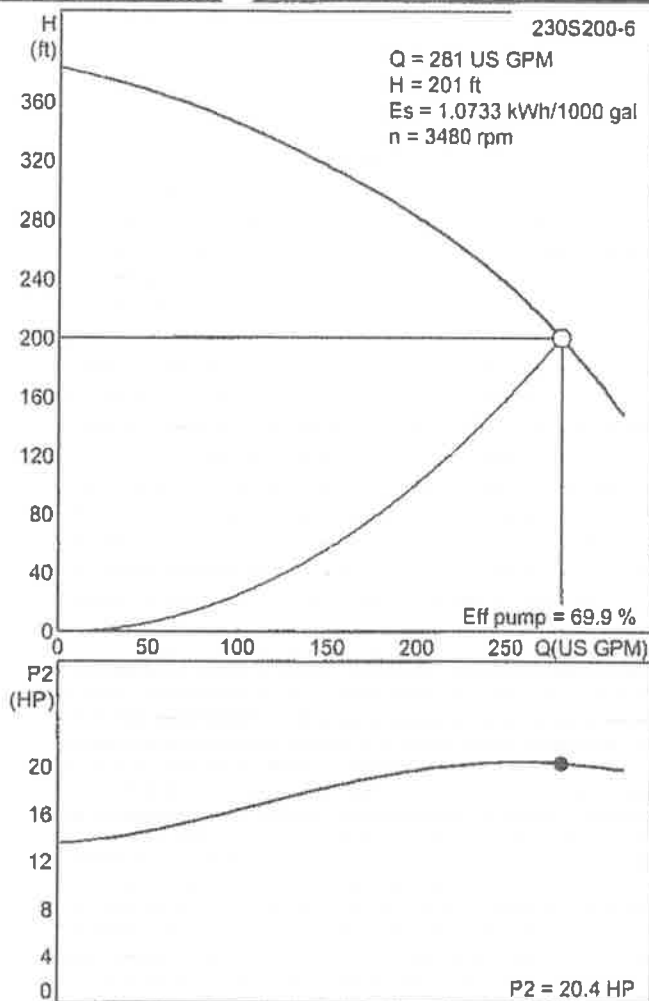
Performance conforms to ISO 9906 Annex A
@ 8 ft. min. submergence.

15B73006 230S200-6



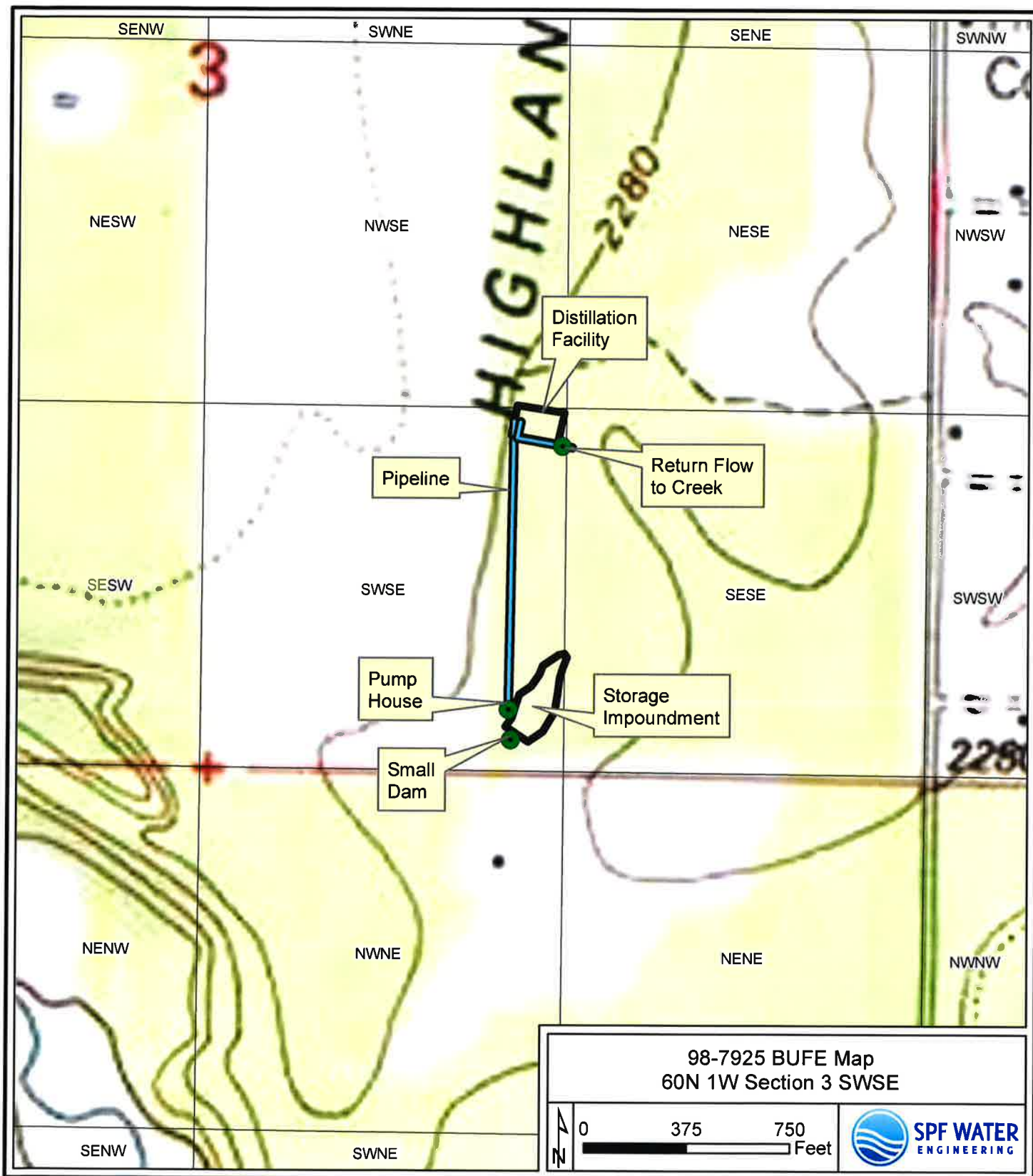


Description	Value
Product name:	230S200-6
Product Number:	15B73006
EAN number:	5700391830297
Technical:	
Speed for pump data:	3450 rpm
Rated flow:	229 US GPM
Flowrange:	31.7 .. 316 US GPM
Rated head:	253 ft
Type of motor shaft seal:	CER/CARBON
Approvals on nameplate:	CE,GOST2,CSA
Pump Number:	15B70006
Stages:	6
Model:	A
Valve:	pump with built-in non-return valve
Materials:	
Material, pump:	Stainless steel 1.4301 DIN W.-Nr. 304 AISI
Material, impeller:	Stainless steel 1.4301 DIN W.-Nr. 304 AISI
Material, motor:	Stainless steel 1.4301 DIN W.-Nr. 304 AISI
Installation:	
Maximum ambient pressure:	870 psi
Size, pump outlet:	3" NPT
Motor diameter:	6 inch
Minimum borehole diameter:	6" In
Electrical data:	
Motor type:	MS6000
Applic. motor:	NEMA
P2:	20 HP
KVA code:	H
Mains frequency:	60 Hz
Rated voltage:	3 x 208-230 V
Starting method:	direct-on-line
Starter:	3
Service factor:	1,15
Rated current:	70,0-67,5 A
I MAX:	66 A
Starting current:	343 A
Cos phi - power factor:	0,87-0,81
Rated speed:	3440-3480 rpm
Axial load max:	4410 lb
Full load motor efficiency:	84,0 %
Enclosure class (IEC 34-5):	IP58
Insulation class (IEC 85):	F
Motor protection:	NONE
Thermal protec:	external
Built-in temp. transmitter:	yes
Motor Number:	78305518
Controls:	
Heather:	K79
Others:	
Sales region:	Namreg



ATTACHMENT C

QUADRANGLE MAP AND 2015 AERIAL PHOTO





ATTACHMENT D
PHOTOS



Figure 1: Pumphouse and pipe into pond for submersible pump.



Figure 2: Pond as seen standing on the dam crest facing upstream.



Figure 3: Outlet side of pond.



Figure 4: Pond pump controls.



Figure 5: Pump house mechanical piping. Flow enters from pipe on far right, can discharge back to the pond (pressure relief) through middle pipe, and flows to the distillery on left pipe, down through the floor.



Figure 6: Mechanical piping from pond pump in distillery. Flow enters from pipe up through floor.