

Edl, Michele

From: Steven Burk [sody1@msn.com]
Sent: Monday, June 28, 2010 6:58 PM
To: Edl, Michele
Subject: FW: permit 21-7566
Attachments: P1010084.JPG; P1010083.JPG; P1010081.JPG; Hernrys_Lake_turgo.jpg; weg.7512.pdf

Michele Edl
Associate Engineer
Water Right Section
Idaho Department of Water Resources
322 E Front St
Boise ID 83720
208-287-4946

Dear Mr.Edl.

I have provided the specifications for the micro Hydro generator that is used at the Henry's Lake Lodge, (permit 21-7566), along with pictures of its installation, and the two men from your department who came out to inspect the unit. I also have included a specification sheet for the generator itself in the attachments above. If there's anything else I can help you with please let me know. Thank you for your help with this permit.

Steve Burk

Henrys Lake Lodge Micro Generator

There is no model number for the turgo system as this system was custom built for the site by Richard Harker of Saint Anthony, Idaho using a 24 bluespoon turgo runner and nozzles from h-hydro.com.

Turgo runner specification

24 plastic bluespoon runner of 94mm pitch diameter (3.7") and approximately 4.7" outside diameter.

Nozzles: four nozzles of 14.3mm (9/16" bore) baseline with interchangeable with spare nozzles of 12.7mm (1/2") and 15.9mm (5/8") bore to enable operation at flows greater or less than the nominal flow rate of 130 gpm on 30' net head.

Housing: Custom welded housing is shown in attached photo before painting and nozzle installation.

Generator: 1 hp, 3-phase, 1200 rpm induction motor, direct drive. Spec sheet attached.

Initial testing showed 512 W at 12.8 psi using the four 9/16" bore nozzles.

Systems are now available which can beneficially make use of up to 230 gpm at this site, using four 19mm (3/4") bore nozzles on a 132mm pitch diameter (5.2") plastic greenspoon runner driving a 900 rpm 1.5hp motor producing up to 900W.

Subject: permit 21-7566
Date: Fri, 25 Jun 2010 16:40:30 -0600
From: Michele.Edl@idwr.idaho.gov
To: sody1@msn.com

Mr. Steve Burk,

My supervisor, Shelley Keen, has assigned your permit (21-7566) for micro hydropower use to me for final review and licensing, if appropriate. I familiarized myself with the file this afternoon and I retrieved this email address from your June 10, 2010 correspondence with Mr. Keen. In that message, you provide the seasonal use information that be valuable for determining an annual volume of water beneficially used.

I do need a little more information from either you or your design engineer. I will need to determine a system capacity for the license. I am hoping you can provide a copy of the design specifications or similar information for your micro turbine.
If the specs are not available, could you provide me the Turgo model # and confirm the number of jets and the size of nozzles that you are using.

I will keep your permit file handy in hopes that you can provide me this information before the 4th of July holiday weekend.

Sincerely,

Michele Edl
Associate Engineer
Water Right Section
Idaho Department of Water Resources
322 E Front St
Boise ID 83720
208-287-4946

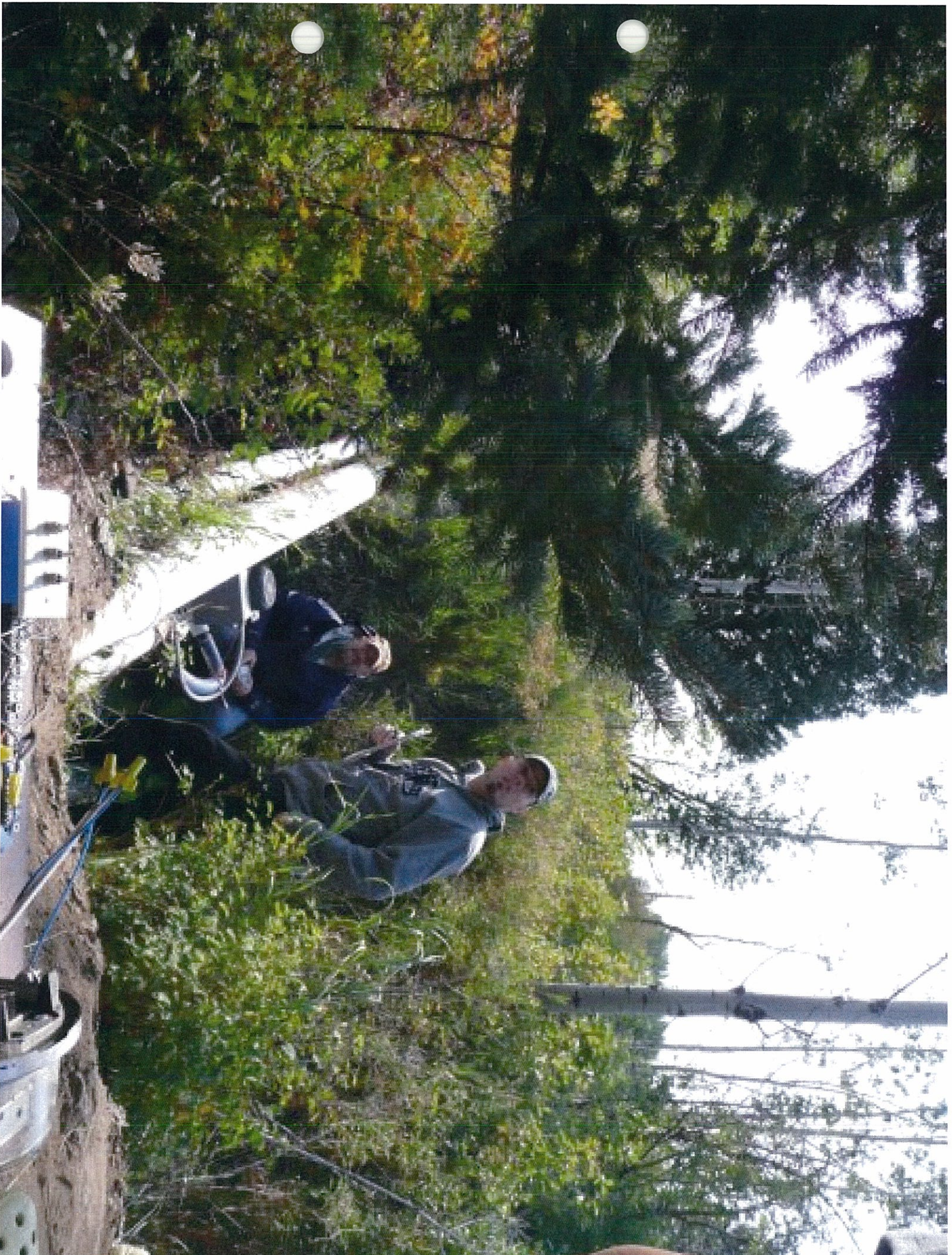
The New Busy think 9 to 5 is a cute idea. Combine multiple calendars with Hotmail. [Get busy.](#)

Hotmail is redefining busy with tools for the New Busy. Get more from your inbox. [See how.](#)

The New Busy is not the old busy. Search, chat and e-mail from your inbox. [Get started.](#)

A photograph showing a white PVC pipe running horizontally. A blue corrugated hose is connected to the pipe via a black electrical box. The setup is surrounded by dense green vegetation and tall grass. The image is oriented vertically, with the pipe running from top to bottom.





01/11/2019

A black and white photograph showing a large, dark, rectangular object, possibly a piece of equipment or a container, resting on a wooden pallet. The object has a label on its side. The background shows a dark, industrial setting with a metal structure.



Hartvigsen-Hydro

No.:

Date: 5/8/2007

DATA SHEET

Single-phase induction motor - Squirrel cage rotor

Customer : Steve Burk & Richard Harker
Product line : Single-Phase Motors - NEMA 56 TEFC (IP55)

Frame : F56H
Output : 0.75 HP
Frequency : 60 Hz
Poles : 6
Full load speed : 1170
Slip : 2.50 %
Voltage : 115/208-230 V
Full load current : 10.0/4.80-5.00 A
Locked rotor current : 54.0/27.0 A
Locked rotor current (ll/in) : 5.4
No-load current : 7.40/3.70 A
Full load torque : 3.32 lb.ft
Locked rotor torque : 230 %
Breakdown torque : 260 %
Design : ---
Insulation class : B
Temperature rise : 80 K
Locked rotor time : 6 s (hot)
Service factor : 1.15 (1.00 at 208V)
Duty cycle : S1
Ambient temperature : 40
Altitude : 1000 m
Degree of Protection : IP55
Approximate weight : 42 lb
Moment of inertia : 0.17774 sq.ft.lb
Noise level : ---

	D.E.	N.D.E.
Bearings	6204 ZZ	6203 ZZ
Regreasing interval	---	---
Grease amount	---	---

Load	Power factor	Efficiency (%)
100%	0.68	71.0
75%	0.59	67.0
50%	0.49	59.0

\$360 plus freight, \$625 list.

Performed by:
JJH

Checked:

Version