

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 96-9841

Exam Date: 02/16/2022

1. Current Owner:

S STEVE LAFRENZ PO BOX 1356 SANDPOINT ID 83864-0863
DEBORAH A LAFRENZ PO BOX 1356 SANDPOINT ID 83864-0863

2. Accompanied by: In office exam – prior field exam completed in conjunction with 96-9535.

3. **SOURCE:**

GROUND WATER

Method of Determination: Arcmap and DRG.

B. OVERLAP REVIEW1. Other water rights with the same place of use: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
96-9538	GROUNDWATER	Industrial Storage, Industrial from Storage	LICENSE

Comments: Licensed right 96-9538 is for the same property, diversion system, and storage pond system as this permit. 96-9538's pond storage beneficial uses overlap this permit's POU, and condition X35 has been added to the permit stating that Rights 96-9538 and 96-9841 when combined shall not exceed a total diversion rate of 0.40 cfs, and a maximum diversion volume of 6.4 acre-feet.

2. Other water rights with the same point-of-diversion: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
96-9538	GROUNDWATER	Industrial Storage, Industrial from Storage	LICENSE

Comments: 96-9538 and this permit have the same pump and diversion system. Condition F06 has been added to the permit describing the same POD for both rights.

C. DIVERSION AND DELIVERY SYSTEM1. **LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER NE¼ NE¼, Sec. 29, Twp 56N, Rge 02W, B.M. BONNER County

Method of Determination: GPS. POD located at -116° 35.478, 48° 10.665.

PLACE OF USE: INDUSTRIAL STORAGE and FIRE PROTECTION STORAGE

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
56N	02W	29	X																

PLACE OF USE: INDUSTRIAL FROM STORAGE

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
56N	02W	29	X																

Method of Determination: Prior field exam performed on 7/28/2020 coupled with the beneficial use report for 96-9538 & Arcmap aerial imagery were used to accurately validate the POU.

3.

☒ Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.

☒ Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.

☒ Aerial Photo Attached (required for irrigation of 10+ acres).

☒ Photo of Diversion and System Attached

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
WATER TRANSFER PUMP	WACKER NEUSON	7.1	20203766		

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
BUCKET MEASUREMENT						

2. Measurements: A 50-gallon graduated plastic barrel was used to complete the flow measurement, resulting in 45 gallons filled in 15.03 seconds. Using these volume and time metrics, the resulting flow measurement equals 179.64 gpm or 0.40 cfs considering department rounding standards.

E. FLOW CALCULATIONS

Measured Method: 50-gal barrel filled to 45 gallons in 15.03 seconds.

$$= (5 \text{ gal} / 15.03 \text{ sec} \times 60 \text{ sec/min}) \times (45 \text{ gal} / 5\text{-gal bucket factor}) = 19.96 \text{ gpm} \times 9 \text{ (factor of 45)} = 179.64 \text{ gpm} = 0.40 \text{ cfs considering department rounding standards.}$$

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: N/A

2. Volume Calculations for Other Uses:

SEE ATTACHED POND ANALYSIS WORKSHEET.

- Industrial from storage annual volume = 150 hours pump operation per year x 90 gpm (0.20 cfs) x 60 min = 810,000 gal per year / 325,850 gal per af = **2.5 af** considering department rounding standards. Note: this 2.5 af volume added to 96-9538's 2.5 af equal 5.0 af under normal operations pumping at 0.40 cfs for the industrial season of use described above.
- Maximum Diversion Volume = 1.0 af (pond capacity) + 0.4 af (evaporation loss) + 2.5 af (industrial storage/ from storage) = **3.9 af**

G. NARRATIVE/REMARKS/COMMENTS

This permit was developed by the applicant to add fire protection storage beneficial use to their existing pond, as well as accounting for the total diversion rate of their pump's capacity beyond what existing licensed right 96-9538 authorizes. A prior field exam was conducted on 7/28/2020, which validated the same diversion system and storage pond used by the applicants for this permit's developed beneficial uses. As such, adequate back file data from 96-9538, aerial imagery, and photographic evidence is on hand to perform an in-office exam toward licensing this permit.

Initial field exam performed on 7/28/2020 with the applicant, Steve Lafrenz, showed a shallow hand dug groundwater well being used for industrial purposes. At the open pit groundwater well the applicant uses a 7.1 hp Wacker Neuson water transfer pump for diversion to storage use. A series of fire hydrant hoses run to the storage pond associated with this permit. A 50-gallon graduated plastic drum was used to conduct a flow measurement. Water from the fire hose was allowed to run for brief time to allow it to stabilize, then with the applicant's assistance a flow measurement was taken. Since the measurement used 45 gallons versus the normal 5-gal bucket, a factor of 9 was used to derive the flow rate which equals: $(5 \text{ gal} / 15.03 \text{ sec} \times 60 \text{ sec/min}) \times (45 \text{ gal} / 5\text{-gal bucket factor}) = 19.96 \text{ gpm} \times 9 \text{ (factor of 45)} = 179.64 \text{ gpm} = 0.40 \text{ cfs}$ considering department rounding standards.

Licensed right 96-9538's 0.20 cfs + this permit 96-9841's **0.20 cfs** (which is recommended for licensing of this right) = the total pumping capacity of 0.40 cfs identified during the exam. The applicant stated they operate a larger capacity pump to reduce the total hours of run time required to pump water to storage throughout the year.

A lined pond was used for the industrial storage POU and fire protection storage POU, which was observed during the 2020 exam. Year 2021 aerial imagery verifies the POU has not changed since the last field exam. The pond has a surface area of 0.3 acres, a maximum depth of 8 feet, average depth of 3.2 feet, pond capacity of 1.0 af, estimated evaporation loss of 0.4 af, and multiple fill capacity of 2.5 af. The pond capacity and evaporation rate equal the fire protection storage volume equal to 1.0 af + 0.4 af = **1.4 af** annually. Under previous right 96-9538, the pond was unable to be maintained at a full level year-round because there was no beneficial use appropriated aside from industrial use which is depleted annually. The applicant can now keep the pond full for fire protection purposes year-round.

The multiple fill volume equal to **2.5 af** accounts for the industrial storage & industrial from storage (non-additive) value recommended for licensing this right. 2.5 af is half of the annual volume derived from the applicant's pumping operations during their industrial use season of use: 150 hours pump operation per year x 180 gpm (0.40 cfs) x 60 min = 1,620,000 gal per year / 325,850 gal per af = 5.0 af considering department rounding standards & normal pumping operations. The total volume required for the pond equals **3.9 af**, which will be applied as the maximum diversion volume for licensing purposes.

The industrial from storage uses include a rock crushing and aggregate washing operation. Heavy machinery is used throughout the industrial from storage POU, which requires dust abatement as well rock washing uses. No concrete is mixed on site and not associated with this right's water use. The applicant uses a 50 hp pump to divert from storage, and the pond is a recirculation pond that is in a loop system. Water is diverted from the groundwater well, flows to the pond, is diverted from the pond for industrial from storage use, and any overflow/excess water from operations is diverted back to the pond. In this manner, the applicant state they recycle a substantial amount of water for re-use annually. This volume has no way of accurately being measuring and is not being calculated for licensing purposes.

All conditions on the permit shall be carried forward to licensing. Overlap Concerns: Licensed right 96-9538 is for the same property, diversion system, and storage pond system as this permit. 96-9538's pond storage beneficial uses overlap this

permit's POU, and condition X35 has been added to the permit stating that Rights 96-9538 and 96-9841 when combined shall not exceed a total diversion rate of 0.40 cfs, and a maximum diversion volume of 6.4 acre-feet. Looking at the face of each license the total volume equals 2.9 af (96-9538) + 3.9 af (96-9841) = 6.8 af, but the evaporation rate volume of 0.4 af associated with each right is not additive in nature. Subtracting out 0.4 af provides the overlap max diversion volume equal to 6.4 af. There are no additional overlap concerns for this right.

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

H. RECOMMENDATIONS

1. Recommended Amounts

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>	<u>Annual Volume</u>
INDUSTRIAL STORAGE	01/01 to 12/31		2.5 AF
INDUSTRIAL FROM STORAGE	01/01 to 12/31		2.5 AF
FIRE PROTECTION STORAGE	01/01 to 12/31		1.4 AF
DIVERSION TO STORAGE	01/01 to 12/31	0.20 CFS	

Totals: 0.20 CFS 3.9 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 ☒ None

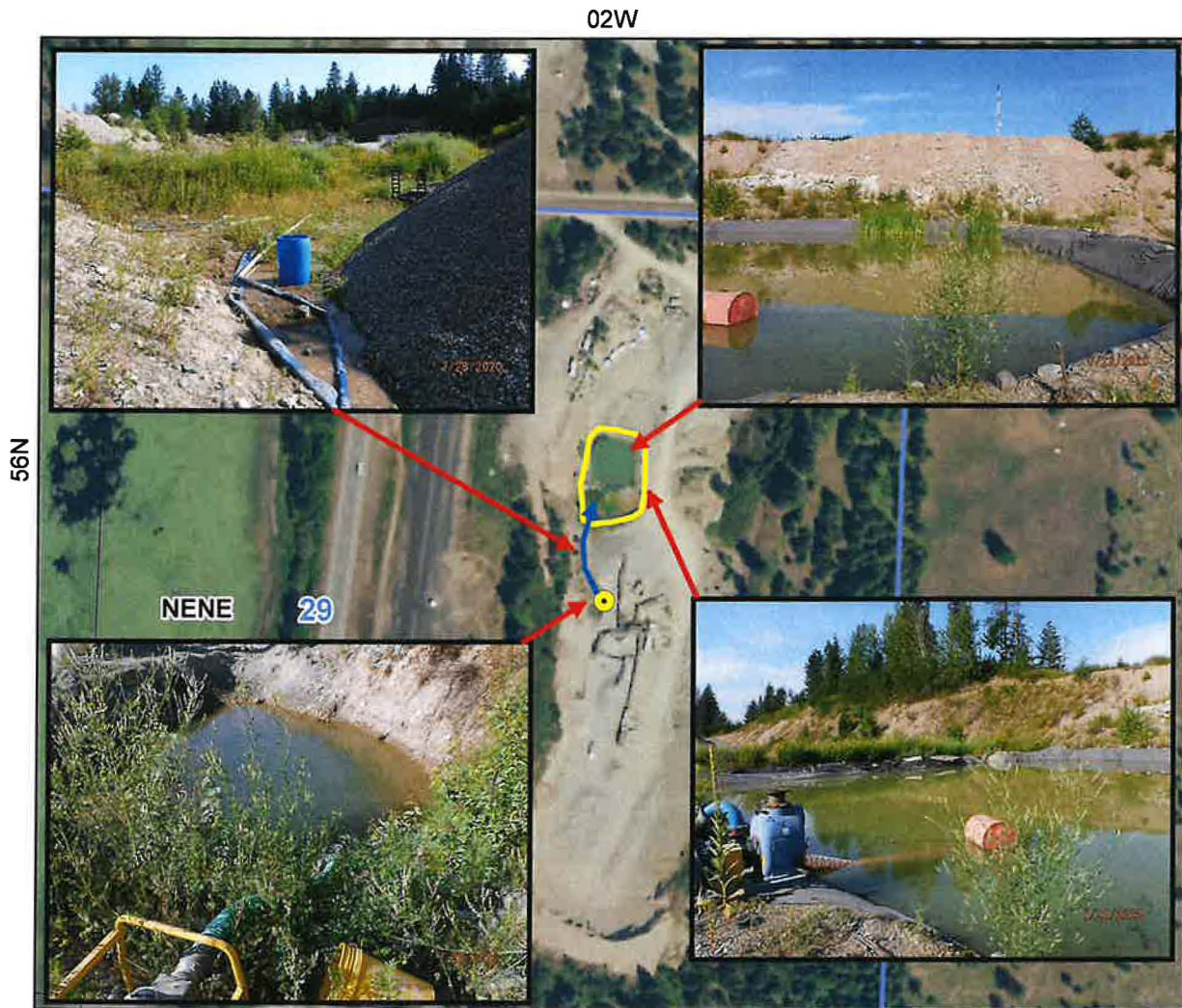
I. AUTHENTICATION Luke Bates -

Field Examiner's Name *Luke Bates* Date 2/16/2022

Reviewer *Ad Fink* Date 7/21/2022

State of Idaho
Department of Water Resources
Attachment to Field Exam
96-9841

INDUSTRIAL STORAGE & FIRE PROTECTION STORAGE system diagram.



-  Point of Diversion
-  Place Of Use Boundary
-  Townships
-  PLS Sections
-  Quarter Quarters

0 0.035 0.07 0.14 Miles



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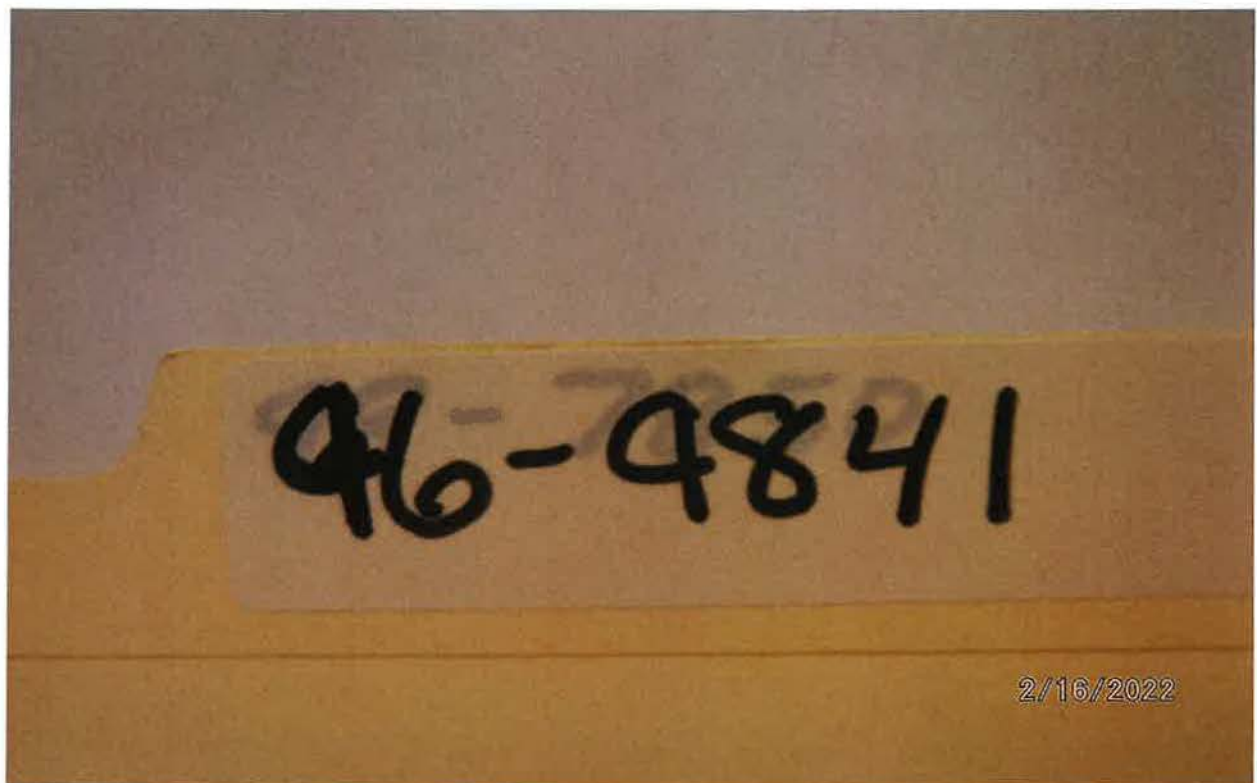
INDUSTRIAL FROM STORAGE system diagram.



-  Point of Diversion
-  Place Of Use Boundary
-  Townships
-  PLS Sections
-  Quarter Quarters

0 0.045 0.09 0.18 Miles

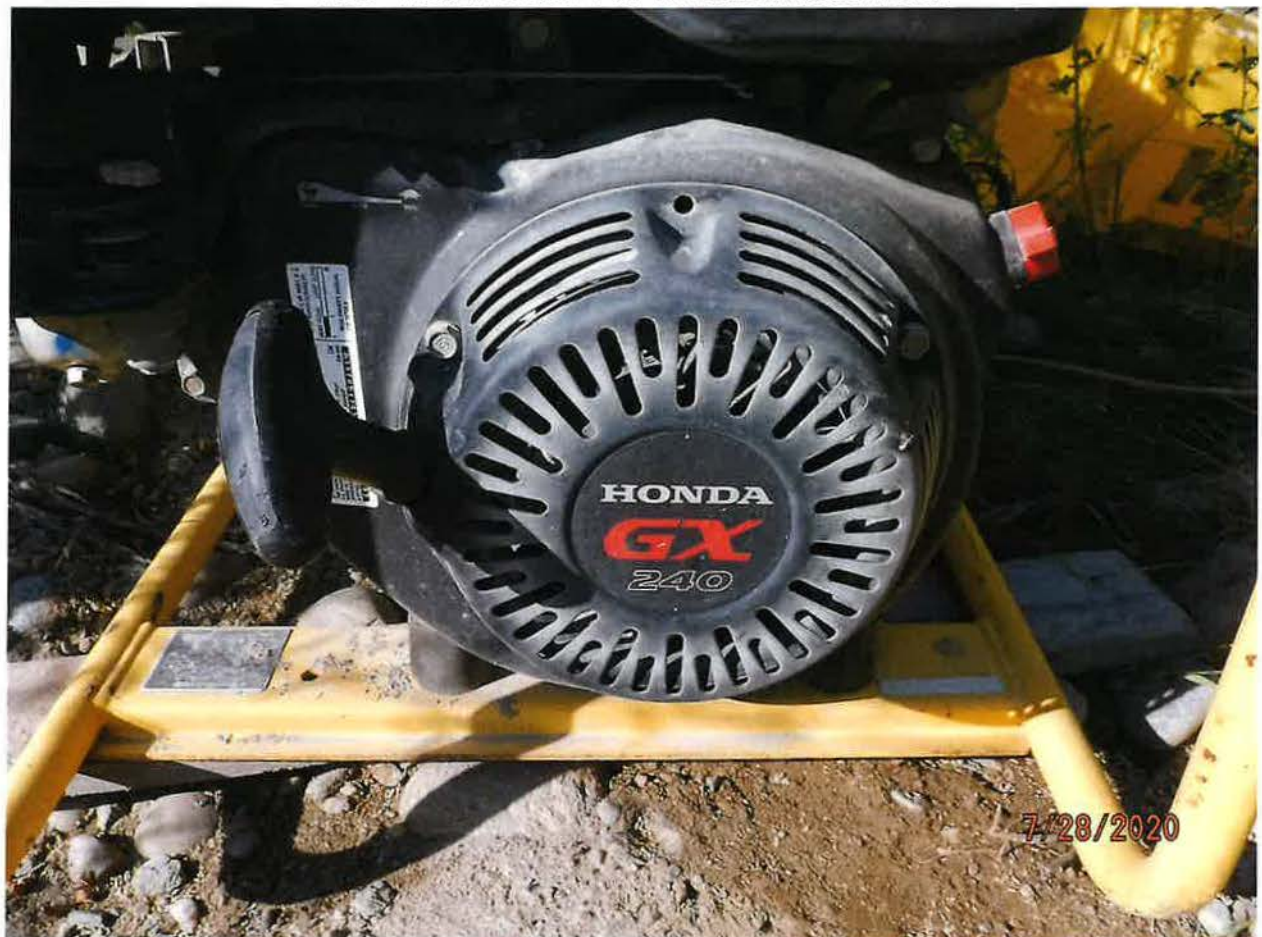




GROUND WATER SOURCE – MANMADE OPEN PIT WELL



POD – HONDA GX 240 7 HP WATER TRANSFER PUMP





WATER CONVEYANCE FROM POD TO SETTLING POND





SMALL SETTLING POND FOR SILT FALL OUT BEFORE ENTERING STORAGE POU



FLOW MEASUREMENT 45 GAL IN 15.03 SECONDS



INDUSTRIAL STORAGE POU – RECIRCULATION POND





RECIRCULATION PUMP BACK TO INDUSTRIAL OPERATIONS



RECIRCULATION FEED PIPES FROM STORAGE POU TO INDUSTRIAL FROM STORAGE POU



INDUSTRIAL FROM STORAGE POU



OVERFLOW FROM AGGREGATE WASHING RECYCLED BACK TO OPEN PIT WELL FOR USE