

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

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. 63-12593

1. Owner Parklane Company, Inc. Phone No. 208-345-3221
 Current address 817 W. Franklin St., Boise, ID 83702
2. Examiner's name Terry Scanlan, P.E. (Examiner No. 11-129) EXAM DATE 11/16/2011
3. Accompanied by Andrew Ludwig Email _____
 Address _____
 Relationship to permit holder Building Maintenance Employee Phone No. 208-371-7717
4. Source Ground Water tributary to _____

B. OVERLAP REVIEW

1. Other water rights with the same place of use United Water Idaho
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
			NE	NW	10	3N	2E	Ada	Exam, 2011 Photo

2. Place(s) of Use: Method of determination Exam, 2011 Photo

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
3N	2E	10					X												

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
Production Well	Submersible	15		Grundfos	Model 150S150-8

*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

2. Measurements: _____

E. NARRATIVE/REMARKS/COMMENTS

An 8-inch well equipped with a 15 hp submersible pump and a 6-inch injection well were developed to provide for a closed-loop heating and cooling system serving the Idanha Hotel in downtown Boise. Although the heat exchanger has a capacity of 1,150 gpm, the system has sufficiently operated with a pump capacity of 150 gpm or 0.33 cfs. Annual volume was estimated based on NOAA data and calculations that the Department recently used in licensing a similar system for the Union Block Building under water right 63-12342. The building was built in 1902 and remodeled in 1999, at which time energy efficiency was improved by weatherproofing the building's windows and adding more insulation throughout. The heat pumps for the building consist of three 5-ton units for the commercial space on the 1st floor and individual 1.5 to 2 ton units for each apartment. For optimum heating, water enters the units at 67 degrees and out at 57 degrees. For optimum cooling, water enters the units at 67 degrees and out at 77 degrees. The system heats and cools six stories and a full basement for a total of approximately 70,000 square feet (10,000/level)

At the time proof of beneficial use was submitted in 2001, the injection well was used, although capacity of the injection well has gradually declined to the point where it will no longer accept injection flow. Since the water right was established with use of the injection well, the right has been recommended based on the system use and capacity during the permit's development period. Upon licensing, the attached transfer application can then be processed proposing use of the injection well as a 2nd production well and elimination of the water right's injection requirement. The permit holder has received approval from ACHD to discharge their spent cooling water into ACHD's storm drain system located in the alley behind the Idanha Building.

Recommended Amendments include 1) changing the point of diversion to the NENW, rather than the SWNENW, 2) changing the water bearing zone to 200 to 288 feet as developed.

Attachment A: copy of permit and proof of beneficial use

Attachment B: copy of well drillers reports and pump performance curve

Attachment C: annual volume and system capacity flow calculations

Attachment D: aerial photo and topo map

Attachment E: Photos of place of use and wells

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?

Water bearing zone proposed: 150 to 250 feet.

Water bearing zone developed: 200 to 288 feet.

F. FLOW CALCULATIONS☒ Additional computation sheets attachedMeasured Method:
See Attachment C**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:
See Attachment C**H. RECOMMENDATIONS**

1. Recommended Amounts

Beneficial Use	Period of Use		Rate of Diversion	Annual Volume
	From	To	Q (cfs)	V (afa)
Heating & Cooling	1/1	12/31	0.33 cfs	238.9 afa
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
Totals:			0.33 cfs	238.9 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

Water bearing zone

I. AUTHENTICATION

Field Examiner's Signature

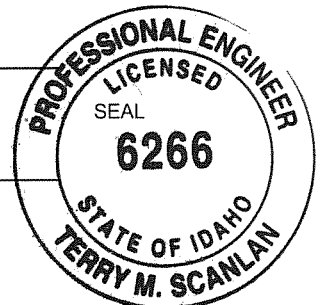
Terry M. Scanlan

Date

12-12-11

Reviewer _____

Date _____





ATTACHMENT A

PERMIT RECORD AND PROOF OF BENEFICIAL USE

State of Idaho
Department of Water Resources
Permit To Appropriate Water

NO. 63-12593

Priority: July 28, 2000

Maximum Diversion Rate:

0.56 CFS

This is to certify, that **PARKLANE CO**

1817 W FRANKLIN AVE

BOISE ID 83702

has applied for a permit to appropriate water from: **GROUND WATER**

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>
HEATING	01/01 to 12/31	0.56 CFS
COOLING	01/01 to 12/31	0.56 CFS
	Totals	0.56 CFS

LOCATION OF POINT(S) OF DIVERSION:

SWNENW , Sec. 10, Township 03N, Range 02E
ADA County

PLACE OF USE: HEATING

TWN RGE SEC

03N 02E 10 NENW

PLACE OF USE: COOLING, same as HEATING use

CONDITIONS OF APPROVAL AND REMARKS

1. Proof of application of water to beneficial use shall be submitted on or before **November 1, 2001**.
2. Subject to all prior water rights.
3. Right holder shall comply with the drilling permit requirements of Section 42-235, Idaho Code.
4. Return flow discharged to a subsurface system must be authorized by a separate injection well permit.
5. After specific notification by the department, the right holder shall install a suitable measuring device or shall enter into an agreement with the department to determine the amount of water diverted from power records and shall annually report the information to the department.
6. The point of diversion identified in this right is located within the boundaries of the Boise Front Low Temperature Geothermal Resource Groundwater Management Area. The well driller shall monitor water temperatures while drilling the well. If water with a temperature greater than 85 degrees Fahrenheit is encountered by the driller, drilling must immediately cease, and the Department must be notified. Drilling shall not resume until the Department has reviewed the drilling conditions, and established standards for construction with the driller.

MICROFILMED

NOV 24 2000

State of Idaho
Department of Water Resources

Permit To Appropriate Water

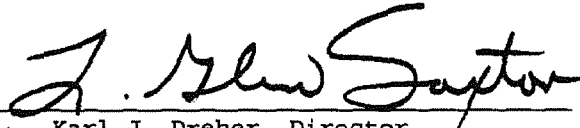
NO. 63-12593

CONDITIONS OF APPROVAL AND REMARKS

7. Use of water under this right shall be non-consumptive.
8. Water shall be diverted and reinjected through a closed loop system.
9. Water bearing zone to be appropriated is from 150 to 250 feet.
10. Heating and cooling uses are for a hotel.

This permit is issued pursuant to the provisions of Section 42-204, Idaho Code.
Witness the signature of the Director, affixed at Boise, this

14th day of November, 2000.


Karl J. Dreher, Director
for

MICROFILMED

NOV 24 2000

FOR OFFICE USE ONLY
Amt. of Fee \$: 50.00
Receipt No. 051207
Receipt By: JA
Date Received: 10-22-01STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

RECEIVED

OCT 22 2001

PROOF OF BENEFICIAL USE

Department of Water Resources

The Idaho Department of Water Resources considers this form a statement that the permit holder(s) has/have completed all development that will occur under this permit and that water has been applied according to the provisions of the permit for the beneficial use(s) described below. This form must be accompanied by a license examination fee, when necessary, or be accompanied by a completed field examination report prepared by a certified water right examiner.

1. Permit No. 03-12593 Telephone No. (208) 345-32212. Name of Permit Holder(s): PARKLANE COMPANY3. Mailing Address: 817 W. FRANKLIN STREETCity BOISE State ID Zip 837024. Source of Water: GROUNDWATER If GROUNDWATER (well), Date Drilled: mo. DEC / yr. 2000Well Driller: ADAMSON'S PUMP & DRILLING Drilling Permit Number: D0001000

5. Use(s) (as authorized by the water right permit):

Domestic (No. of households): 53 Stockwater (No. and type of stock): _____

Irrigation (No. of acres): _____ Other: _____

6. Total rate of diversion and/or volume for which proof is submitted: .56 cfs OR _____ acre-feet

7. Measuring Device Requirement: (refer to the approval conditions on your permit and respond accordingly)

(This question is not optional. Please check either yes or no. Proofs returned not checked accordingly, will be considered incomplete)

Measuring Device: Is a measuring device required?

Yes _____ or No ☒

Has the measuring device been installed?

Yes _____ or No ☒8. Fee Enclosed: \$ 50.00 (See Fee Schedule on back of the instructions for filing proof of beneficial use)

9. Person to contact to accompany the Department representative during field examination of the water system.

Name: JOE ANDERS Telephone Number: (208) 371-5009Address: 817 W. FRANKLIN STREET, BOISE, ID 83702

10. The information given on this form is my true statement of the extent to which the above numbered permit has been developed and water has been diverted. I agree to relinquish any undeveloped portion of the permit to the State of Idaho.

Signature of permit holder: [Signature] PRES. Date: 10/18/01
(include your title, if on behalf of company or organization)MICROFILMED
NOV 26 2001



ATTACHMENT B

WELL DRILLERS' REPORTS AND PUMP CURVE

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Inspected by _____
Twp _____ Rge _____ Sec _____
_____ 1/4 _____ 1/4 _____ 1/4
Lat: : : Long: : :

11. WELL TESTS:

☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal./min	Drawdown	Pumping Level	Time
300			1 hour

Water Temp. 58° Bottom hole temp.

Water Quality test or comments: Iron 3 Grains 8

Depth first Water Encounter 80'

12. LITHOLOGIC LOG: (Describe repairs or abandonment) Water

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
16	0	5	open hole already		
16	5	9	sand & soil.	X	
16	9	18	gravel	X	
12	18	60	gravel	X	
"	60	80	coarse sand	X	
"	80	140	coarse sand & gravel	X	
"	140	154	sand & clay	X	
11	154	155	sand & clay		
"	155	158	brown/black clay		
8	158	165	brown/black clay		
"	165	223	gray clay & sand	X	
"	223	227	clay		
"	227	240	sand.	X	
"	240	242	clay		
"	242	247	sand & clay		
"	247	255	clay		
"	255	257	clay w/ little sand.		
"	257	272	clay		
"	272	288	sand	X	
"	288		clay		

RECEIVED

DEC 27 2000

RECEIVED

~~DEC 11 2000~~

**WATER RESOURCES
WESTERN REGION**

Completed Depth 288' (Measurable)
Date: Started 11-1-00 Completed 11-29-00

13. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name Adams Pump & Drill No. 0457

Firm Official Dave Adamson Date 11.30.00

Driller or Operator Andy B... Date 11-30-00

(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

PERFORMANCE CURVES

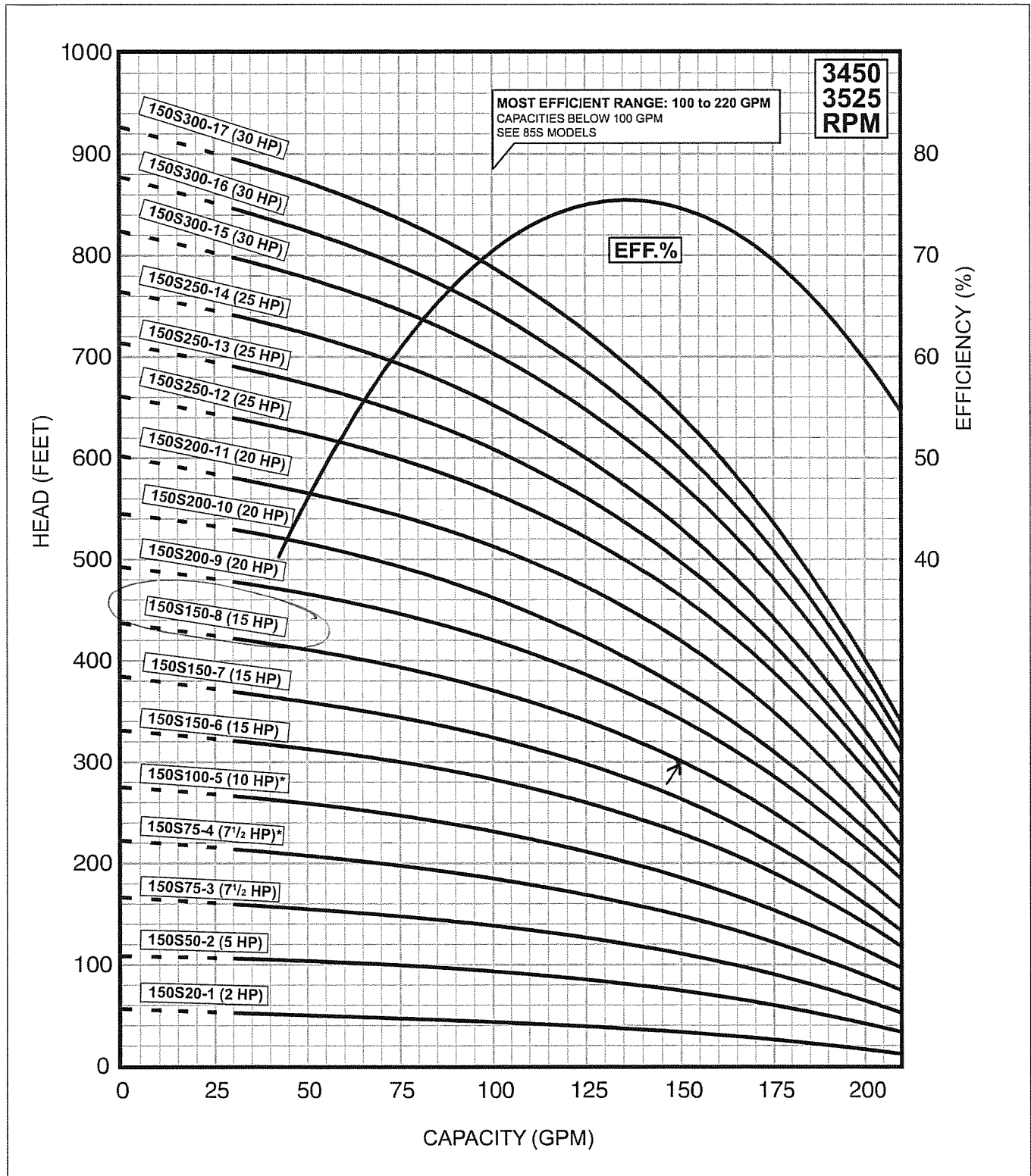
150 GPM

MODEL 150S

FLOW RANGE: 30 -220 GPM

OUTLET SIZE: 3" NPT

NOMINAL DIA. 6"



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

4" MOTOR STANDARD, 2-10 HP/3450 RPM
6" MOTOR STANDARD, 7.5-60 HP/3450 RPM.
8" MOTOR STANDARD, 75 HP/3525 RPM.

* Alternate motor sizes available.

Performance conforms to ISO 9906, 1999 (E) Annex A
Minimum submergence is 5 feet.



ATTACHMENT C

FLOW AND ANNUAL VOLUME CALCULATIONS

Flow Calculations, Permit 63-12573

Well Driller's Report indicates 300 gpm by air-lift pumping
Maximum pumping level is bottom of the well at 288 feet*
Maximum drawdown is $288' - 15'$ (static water level) = 273'
Minimum specific capacity is $300 \text{ gpm} / 273' = 1.1 \text{ gpm/ft}$

Pump curve: 150 gpm (0.33 cfs) at 300 ft TDH
Discharge Pressure = 49 psi (113 feet)
Estimated friction loss from pump to pressure gage = 35 feet**
Pumping water level = $300' - 113' - 35' = 152'$
Drawdown = $152' - 15' = 137'$
 $137' \times 1.1 \text{ gpm/ft} = 150 \text{ gpm (0.33 cfs)}$

*This is a very conservative estimate. Actual pumping water level is likely at or above the top of the well screen.

**This is a very conservative estimate. It assumes 250 feet of 3-inch drop pipe (it may be 4-inch), 5 psi loss through column check valve and discharge elbow, and 300 feet (equivalent length) of 4-inch piping to heat exchanger.

Annual Volume Calculations Permit 63-12593

Option 1:

$$V : 0.33 \text{ cfs} \times 1.9835 \times 365 \text{ days} = \mathbf{238.9 \text{ afa}}$$

Option 2:

IDWR Administrator's Memo, Application Processing No. 23, describes a method for estimating the rate of flow necessary for heating purposes. The Department modified this method and used it for licensing the annual of volume beneficially used for cooling purposes under permit 63-12342. The same approach has been used for estimating annual volume beneficially used for heating and cooling purposes under permit 63-12593.

COOLING

1) Change in temperature across heat exchange system, ΔT_s :

$$\Delta T_s = 10^\circ\text{F} (67^\circ \text{ in} - 57^\circ \text{ out})^*$$

2) Annual volume of water needed for cooling (V_A):

$$V_A = \frac{e \times \text{CDD} \times A \times 2.88}{\Delta T_s} = \frac{0.67 \times 942 \times 70,000 \times 2.88}{10} = 12,723,782.4 \text{ gal} = 39.0 \text{ ac-ft}$$

Where, e = insulation efficiency of building, dimensionless coefficient

CDD = cooling degree days during season of use (see attached NOAA data sheets for CDD and HDD)

A = area of building being cooled in ft^2

ΔT_s = change in water temperature across cooling system

HEATING

$$\Delta T_s = 10^\circ\text{F} (67^\circ \text{ in} - 77^\circ \text{ out})^*$$

$$V_A = \frac{e \times \text{HDD} \times A \times 2.88}{\Delta T_s} = \frac{0.67 \times 5514 \times 70,000 \times 2.88}{10} = 74,478,700.8 \text{ gal} = 228.6 \text{ ac-ft}$$

Where, HDD = heating degree days during season of use

$$V : \text{Cooling } 39.0 \text{ ac-ft} + \text{heating } 228.6 \text{ ac-ft} = \mathbf{267.6 \text{ total ac-ft}}$$

Recommended Annual Volume, V (afa):

$$V = \text{Smaller of } V_{\text{Option 1}} \text{ and } V_{\text{Option 2}} = \mathbf{238.9 \text{ afa}}$$

*per system operator, Andrew Ludwig

NOWData - NOAA Online Weather Data

Boise Area (ThreadEx Station)
 Daily Climate Normals
 CDD (base 65)
 1981-2010

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0	0	0	0	0	2	8	12	6	1	0	0
2	0	0	0	0	1	3	8	12	6	1	0	0
3	0	0	0	0	1	3	8	12	6	1	0	0
4	0	0	0	0	1	3	9	12	5	1	0	0
5	0	0	0	0	1	3	9	12	5	1	0	0
6	0	0	0	0	1	3	9	12	5	1	0	0
7	0	0	0	0	1	3	9	12	5	1	0	0
8	0	0	0	0	1	3	10	12	5	0	0	0
9	0	0	0	0	1	3	10	12	4	0	0	0
10	0	0	0	0	1	3	10	11	4	0	0	0
11	0	0	0	0	1	4	10	11	4	0	0	0
12	0	0	0	0	1	4	11	11	4	0	0	0
13	0	0	0	0	1	4	11	11	4	0	0	0
14	0	0	0	0	1	4	11	11	3	0	0	0
15	0	0	0	0	1	4	11	10	3	0	0	0
16	0	0	0	0	1	4	12	10	3	0	0	0
17	0	0	0	0	1	5	12	10	3	0	0	0
18	0	0	0	0	1	5	12	10	3	0	0	0
19	0	0	0	0	1	5	12	10	3	0	0	0
20	0	0	0	0	1	5	12	9	2	0	0	0
21	0	0	0	0	2	5	12	9	2	0	0	0
22	0	0	0	0	2	6	12	9	2	0	0	0
23	0	0	0	0	2	6	12	8	2	0	0	0
24	0	0	0	0	2	6	12	8	2	0	0	0
25	0	0	0	0	2	6	13	8	2	0	0	0
26	0	0	0	0	2	7	13	8	2	0	0	0
27	0	0	0	0	2	7	13	7	1	0	0	0
28	0	0	0	0	2	7	13	7	1	0	0	0
29	0	0	0	0	2	7	13	7	1	0	0	0
30	0	-	0	0	2	8	13	7	1	0	0	0
31	0	-	0	-	2	-	13	6	-	0	-	0
Month	0	0	0	3	41	139	342	309	100	8	0	0

Sum/average of daily normals might not match monthly normal due to rounding.

Official data and data for additional locations and years are available from the Regional Climate Centers and the National Climatic Data Center.

NOWData - NOAA Online Weather Data

Boise Area (ThreadEx Station)
 Daily Climate Normals
 HDD (base 65)
 1981-2010

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	35	32	24	17	11	4	1	0	1	7	19	31
2	35	31	24	17	11	4	1	0	1	7	19	32
3	35	31	24	17	10	4	1	0	1	8	20	32
4	35	31	24	17	10	4	1	0	1	8	20	32
5	35	31	23	16	10	3	0	0	1	8	20	32
6	35	31	23	16	10	3	0	0	2	9	21	33
7	35	30	23	16	9	3	0	0	2	9	21	33
8	35	30	22	16	9	3	0	0	2	9	22	33
9	35	30	22	16	9	3	0	0	2	10	22	34
10	35	30	22	16	9	3	0	0	2	10	23	34
11	34	30	22	15	8	2	0	0	2	10	23	34
12	34	29	21	15	8	2	0	0	3	11	23	34
13	34	29	21	15	8	2	0	0	3	11	24	34
14	34	29	21	15	8	2	0	0	3	12	24	35
15	34	29	21	15	7	2	0	0	3	12	25	35
16	34	28	20	14	7	2	0	0	3	12	25	35
17	34	28	20	14	7	2	0	0	4	13	26	35
18	34	28	20	14	7	2	0	0	4	13	26	35
19	33	27	20	14	6	2	0	0	4	13	27	35
20	33	27	19	13	6	2	0	0	4	14	27	35
21	33	27	19	13	6	1	0	0	4	14	27	35
22	33	27	19	13	6	1	0	0	5	15	28	35
23	33	26	19	13	6	1	0	0	5	15	28	35
24	33	26	19	13	5	1	0	0	5	15	29	35
25	33	26	18	12	5	1	0	0	5	16	29	35
26	33	25	18	12	5	1	0	1	6	16	29	35
27	32	25	18	12	5	1	0	1	6	17	30	35
28	32	25	18	12	5	1	0	1	6	17	30	35
29	32	25	18	11	4	1	0	1	7	17	31	35
30	32	-	17	11	4	1	0	1	7	18	31	35
31	32	-	17	-	4	-	0	1	-	18	-	35
Month	1046	798	636	429	226	64	8	10	103	385	748	1061

Sum/average of daily normals might not match monthly normal due to rounding.

Official data and data for additional locations and years are available from the Regional Climate Centers and the National Climatic Data Center.



ATTACHMENT D
2011 AERIAL PHOTO AND TOPO MAP

2011 Photo

11th

Idaho

Main

10th

T3N R2E S10 NENW

Legend

● Production Well

■ Idanha Building

□ Sections

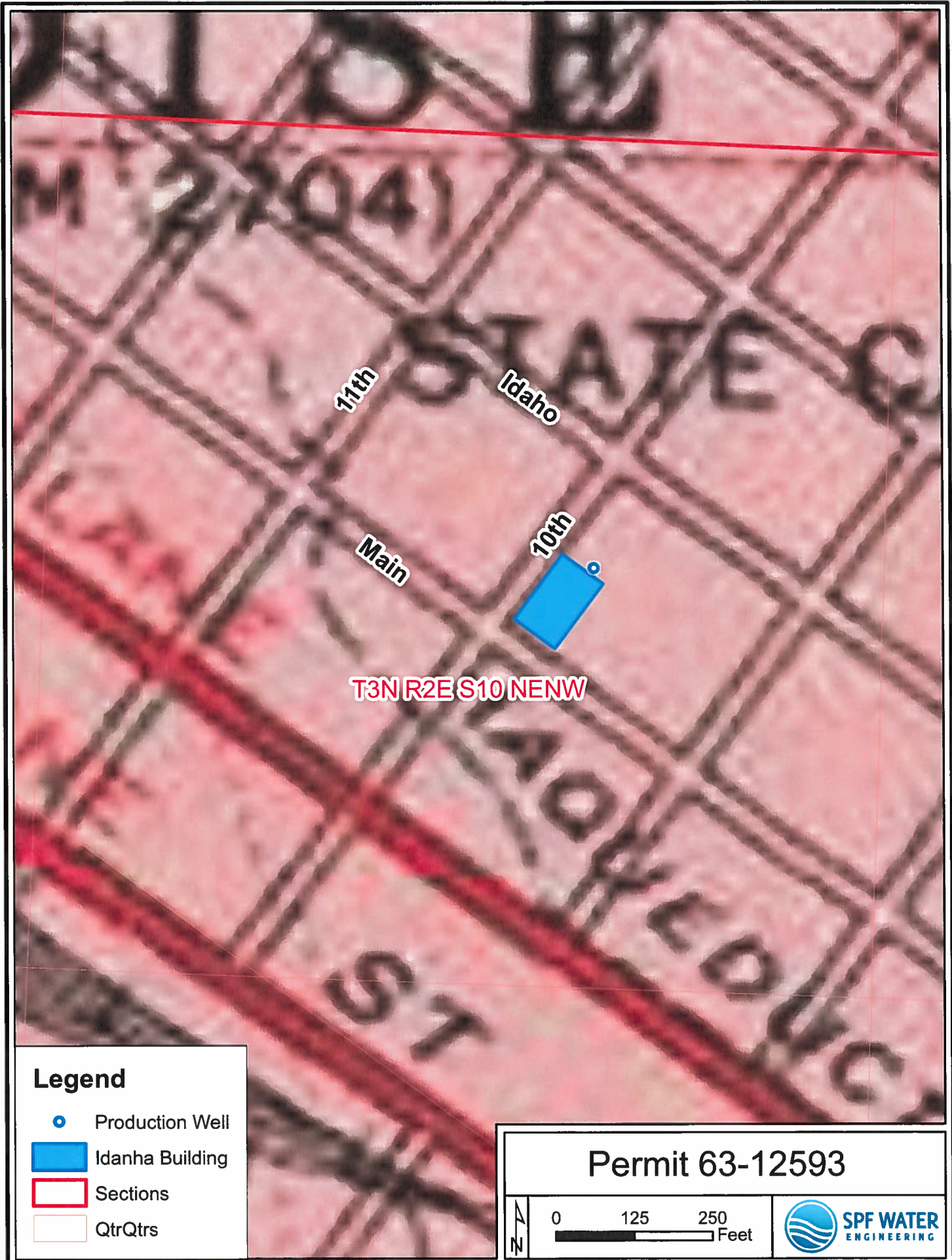
□ QtrQtrs

Permit 63-12593

0 125 250 Feet

0 125 250 Feet





Legend

- Production Well
- Idanha Building
- Sections
- QtrQtrs

Permit 63-12593



ATTACHMENT E
PHOTOS



Place of Use



Point of Diversion and Injection



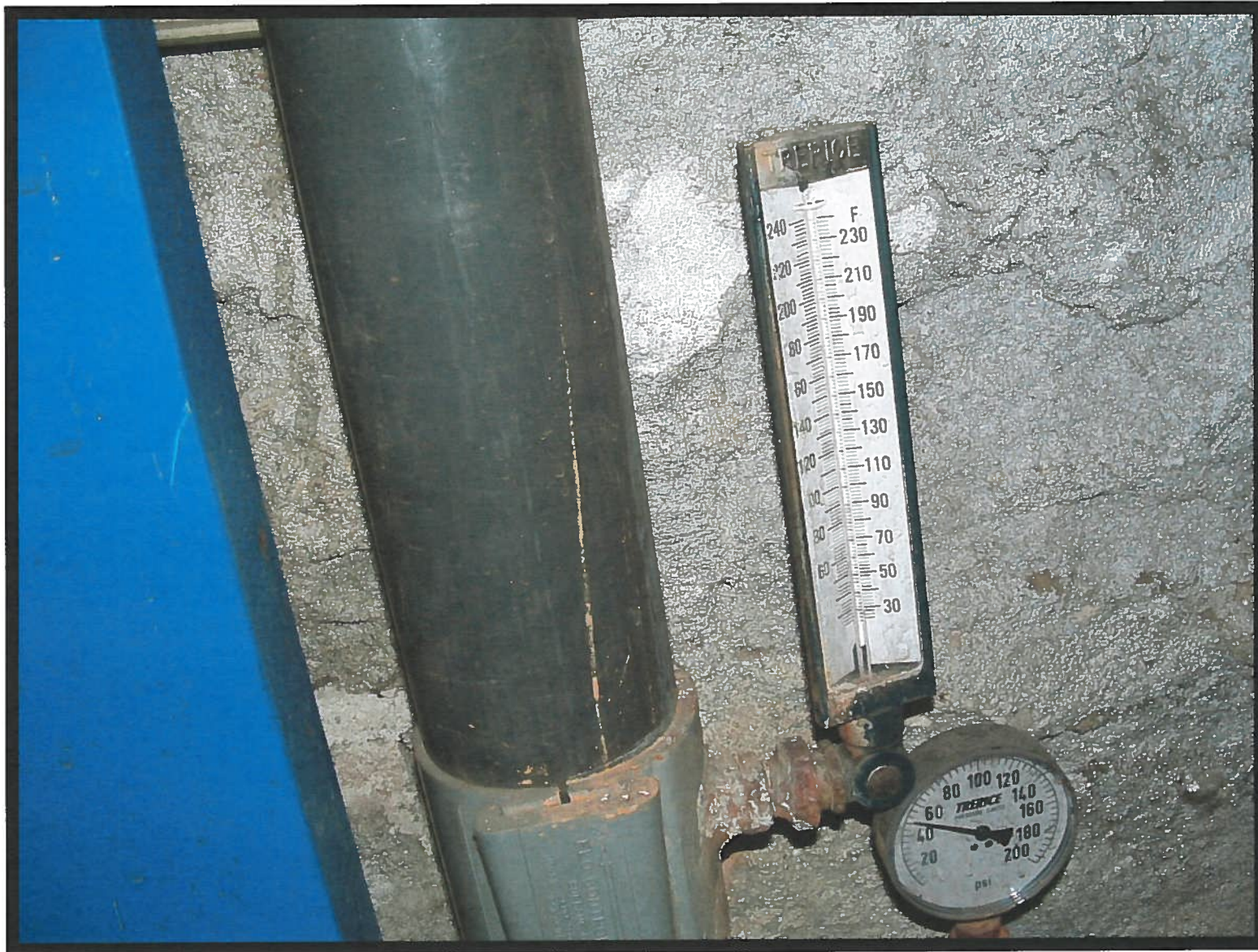
Production Well



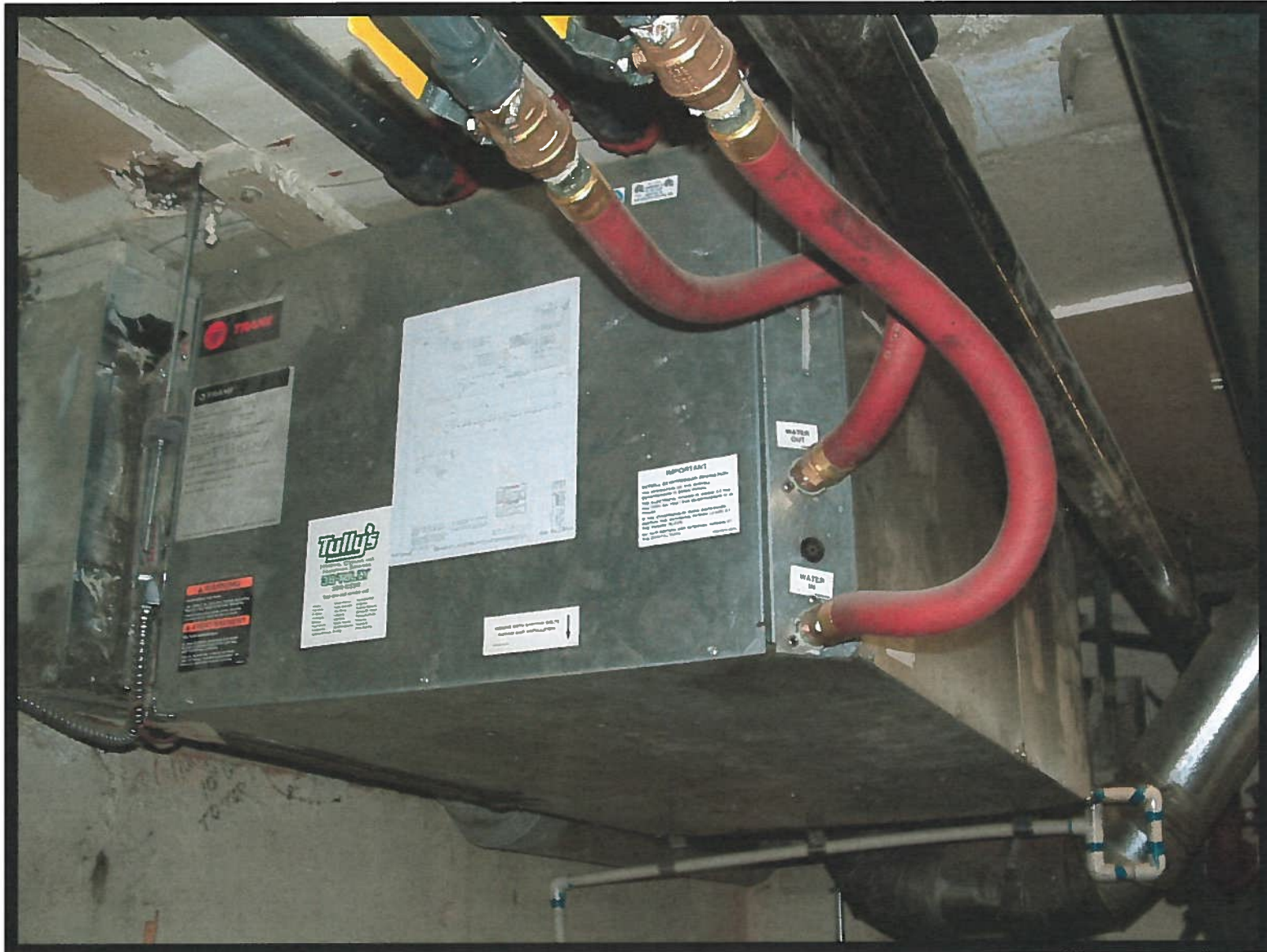
Well Pump Panel



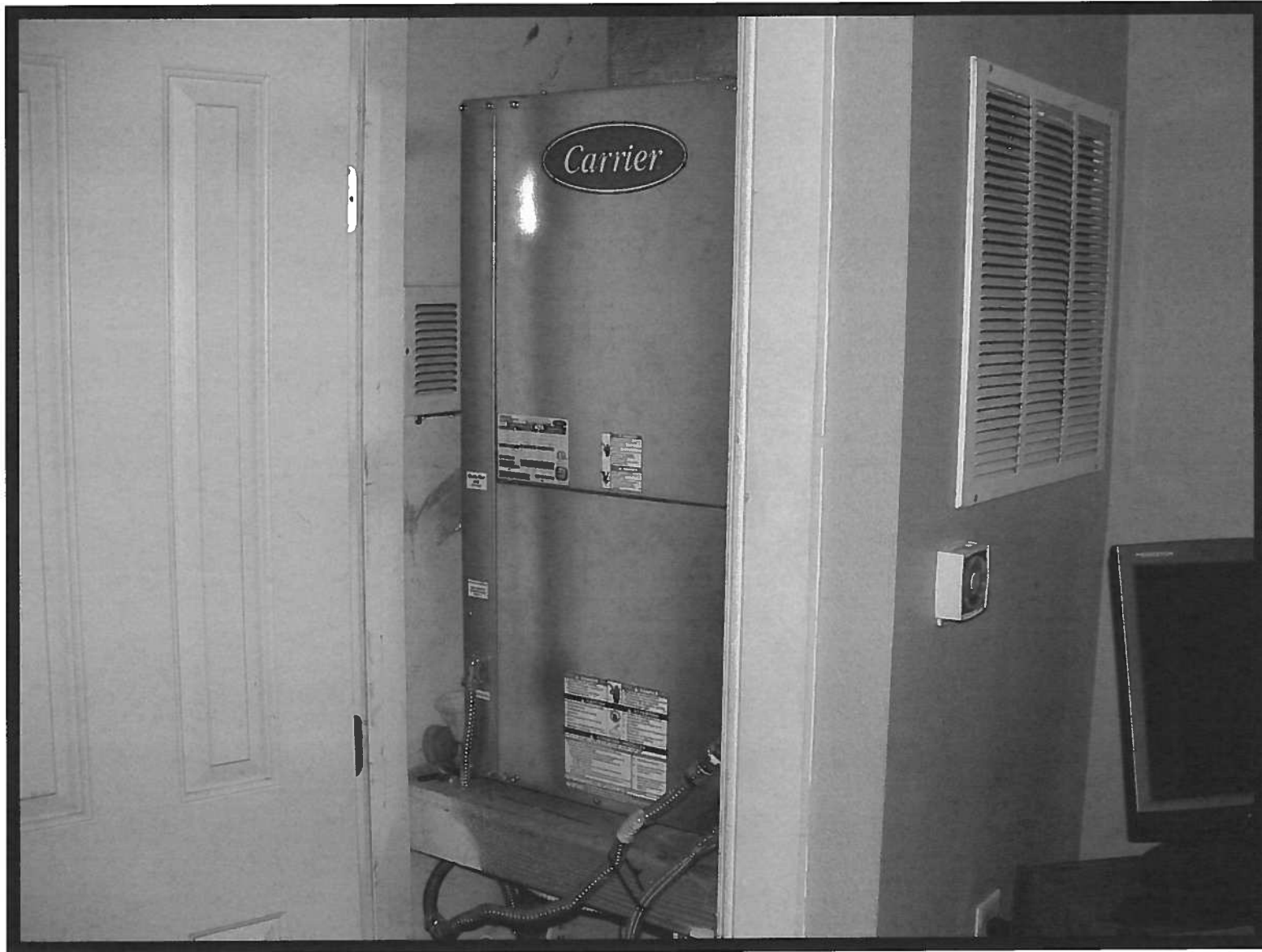
Heat Exchanger



Incoming Pressure (~49 PSI); Incoming Temperature (67 Degrees F)



5 Ton Heat Pump for Building's Common Space



Typical Apartment Heat Pump



Typical Weatherized Apartment Windows