

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

3. Delivery System Diagram. Indicate all major components and distances between components. Indicate weir size/ditch size/ pipe i.d..as applicable.

SEE ATTACHMENT
"03-31688 PODÉPOU DIVERSION WORKS DIAGRAM"

Scale 1"=_____

- ☒ Copy of USGS Quadrangle attached showing location(s) of diversion and place(s) of use (required).
- ☒ Aerial photo attached (required for irrigation of 10+ acres).
- ☒ Photo of diversion and system attached.

Well or Diversion Identification No.*	Motor Make	HP	Motor Serial Number	Pump Make	Pump Serial No. or Discharge Size
D0030968	Franklin	10	03G19-09-0177	Berkeley	G130802 (Model 6AL16 - 10 HP)

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

D. FLOW MEASUREMENTS

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

Measurements System not operating at time of exam. Typically system only operating in spring months.

E. NARRATIVE/REMARKS/COMMENTS

Diversion system consists of a 502 ft deep 8" dia well with a 10 HP pump, piped via a 2" dia buried pipe (~15-30 ft) to a 15,000 gallon underground storage tank, piped to an 8" dia buried line (~1100 ft) along the east side of the road from the storage tank to the fill station where water trucks are filled for dust suppression and gravel mining operations. The well has it's own ID Power meter # 36372146, no other uses of power associated with that meter. Based on GPS data, there is a 75 ft drop in elevation from the well/storage tank to the fill station.

The storage tank was empty and the well was not operating during the field exam. System used 2-3 months during the spring of each year when the owner does an annual crush of gravel for road construction projects within Ada County. Typically, one 3,000 - 4,000 gallon water truck is filled 3-4 times a day during gravel mining operations. Water used for dust suppression mostly, but can be used for gravel crushing backwash on the belt if needed. ACHD has also given BLM permission to use the system for fire protection should the need arise. Owner said it takes approximately 1 day of pumping from the well to fill the tank once operations start up. The tank has a float and the well will kick on periodically to keep the tank full. From the fill station, it takes 4 minutes to fill a 3,000 gallon truck (750 gpm from system downstream from the tank).

Permit authorizes flow of 0.50 cfs and a volume of 35.0 ac-ft. Theoretical HP equation flow calculation based on resonable estimates and information collected during the exam indicates a capacity of approximately 0.12 cfs. Theoretical flow calculation based on discharge pipe diameter and well designed system parameters indicates a capacity of 0.10 cfs (see Flow Calculations below). Pump curve provided by the owner indicates the maximum capacity of the pump is 70 gpm (0.16 cfs), see attached. Well log pump test data indicates the well is capable of producing 60 gpm (0.13 cfs). Exam fee (Receipt # C082667) paid by the permit holder was \$100 for up to 1.0 cfs. 0.16 cfs is being recommended based on maximum capacity of the pump installed (best case scenario) since no system pressure information is available.

Permit condition required mitigation. Purchased right 63-32446 (0.16 cfs 45.0 ac-ft) previously used for irrigation of 10 acres. Letter received from Ada County Highway District (ACHD) in 2004 stating it was their intent the 10 acre right be abandoned permanently to mitigate for right 63-31688. Permit conditioned to comply with IDEQ standards. Per right owner, water spout next to fill station has been certified by IDEQ as a potable water source. Requested documentation from owner and IDEQ about this certification, but no documentation was submitted. Spoke with IDEQ staff and confirmed IDEQ has no concerns with regard to this site. Consider this condition fulfilled. Permit conditioned ground water diversion is restricted to the water bearing zone of 350 ft to 600 ft. As constructed, the water bearing zone for this diversion is 399 ft to 502 ft, within the conditioned zone. All other conditions of the permit were also met.

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

F. FLOW CALCULATIONS

Measured Method: ☐ Additional Computation Sheets Attached

HP Equation: PSI 40 (Estimate based on system design - no data available), Lift 430 FT (Estimate from Driller), HP 10 (Observed)

$$Q \text{ (cfs)} = (8.8 \times 0.7 \times 10) / [(2.31 \times 40) + 430] = 61.6 / 522.4 = 0.12 \text{ cfs THEORETICAL CAPACITY}$$

Pipe Diameter Flow Equation: $V = 5 \text{ ft/sec}$ (well designed system avg velocity of water inside pipe) $A = \pi r^2$ $r = 1 \text{ in} = 0.08 \text{ ft}$ (2" dia discharge pipe)

$$Q \text{ (cfs)} = V \times (\pi r^2) = 5 \text{ ft/sec} \times 0.02 \text{ ft}^2 = 0.10 \text{ cfs THEORETICAL CAPACITY}$$

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation: N/A

VI.R. = (Acres Irrigated) x (Irrigation Requirement) =

VD.R. = [Diversion Rate (cfs)] x (Days in Irrigation Season) x 1.9835 =

V = Smaller of VI.R. and VD.R. =

2. Volume Calculations for Other Uses: See
Attached

H. RECOMMENDATIONS

1. Recommended Amount

BENEFICIAL USE	PERIOD OF USE		RATE OF DIVERSION ANNUAL	
	From	To	Q(cfs)	V(afa)
INDUSTRIAL	1/1	12/31	0.16 cfs	4.5 afa
TOTALS			0.16 cfs	4.5 afa

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

Field Examiner's Name



Reviewer

Date 7/28/2011

Date

63-31688 POD & POU Diversion Works Diagram



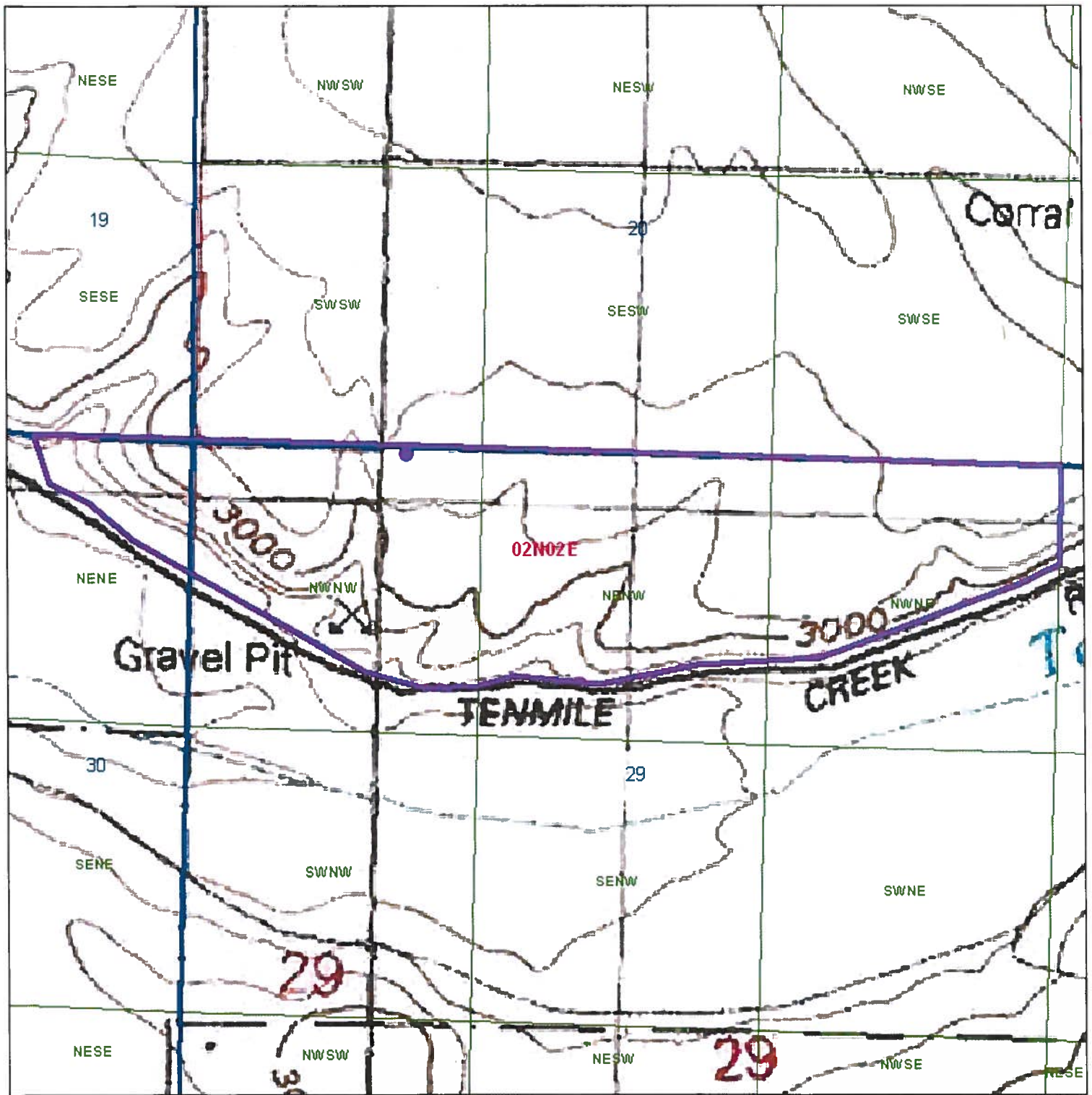
0 0.125 0.25 0.5 0.75 Miles

2011 Aerial Phot

Legend

- 63-31688 POD
- Fill Station
- 63-31688 POU
- Township/Range
- Sections
- QQ

63-31688 POD & POU



0 0.125 0.25 0.5 0.75 Miles USGS Quad

Legend

- 63-31688 POD
- 63-31688 POU
- Township/Range
- Sections
- QQ



63-31688 License Exam 7/28/2011 Photo #1: Well (POD) with welded Well Tag #D0030968 facing southwest.



63-31688 License Exam 7/28/2011 Photo #2: Well (POD), power meter, and covers above 15,000 gallon underground storage tank facing west/northwest.



63-31688 License Exam 7/28/2011 Photo #3: Fill station with mounds of material from gravel operations in background facing north.



63-31688 License Exam 7/28/2011 Photo #4: Fill station close up. Outlet of buried 8" dia line from underground storage tank next to well.

Coonse Well Drilling & Pump Co., Inc.

15851 GUNFIRE ROAD
CALDWELL, ID 83607
PH # 454-0190 · FAX # 454-2743

Fax

To: ADA COUNTY HIGHWAY DISTRICT

From: GARY COONSE

ATTN: RANDY NOBLE

Fax: 387-6328

Date: July 21, 2011

Phone: 387-6327

Pages: COVER + 4 PAGES

Re: WELL INFO

CC:

☐ **Urgent** ☒ **For Review** ☐ **Please Comment** ☐ **Please Reply** ☐ **Please Recycle**

Comments:

Randy -

Well Depth – 502 FT

Pump Size – 10 HP

Pump Setting – 462 FT

Pump Curve – See attached

Drawdown – Unknown – we didn't do pump test. We would guess 25 to 30 ft.

COONSE WELL DRILLING & PUMP CO., INC.15851 Gunfire Road
Caldwell, ID 83607-7863Phone # 208-454-0190
Fax # 208-454-2743**INVOICE****BILL TO:****PAID****DATE****INVOICE #**

4/20/2004

1601

ADA COUNTY HIGHWAY DIST
ATTN: DON ROELL
3775 ADAMS ST
GARDEN CITY, ID 83704

PROJECT		TERMS	DUE DATE
P O # 20876		Due on receipt	4/20/2004
QTY	DESCRIPTION	UNIT PRICE	AMOUNT
470	#10 SUB PUMP CABLE	0.70	329.00
1	SPLICE KIT #10	5.75	5.75
462	2 1/2" GALV DROP PIPE	3.25	1,501.50
1	2 1/2" MASS WELD-ON PITLESS ADAPTER	402.00	402.00
4	2 1/2" CHECK VALVE	105.00	420.00
1	TANK TEE ASSY TEE SWITCH GUAGE PRESS RELIEF ETC.	65.00	65.00
1	4 FT. BAKER MAGNUM HYDRANT	72.60	72.60
13	1" PVC CONDUIT -SCH 80	1.35	17.55
1	MISC PLUMBING	175.00	175.00
1	MISC ELECTRICAL	75.00	75.00
7	LABOR PUMP INSTALLATION	75.00	525.00

THANK YOU FOR YOUR BUSINESS! PLEASE PAY BY THIS INVOICE.

TERMS - All accounts are due and payable upon receipt of invoice. Accounts 30 days past due are subject to a finance charge of 1 1/2% per month (18% annual rate). In the event that this invoice has not been paid within 60 days, a property lien will be filed and legal fees for collection will be added to total amount due.

Total \$3,588.40**Payments Applied** \$-3,588.40**Balance Due** \$0.00

Pump Setting 462 ft.

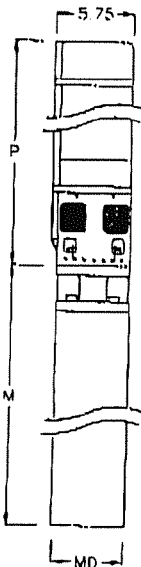
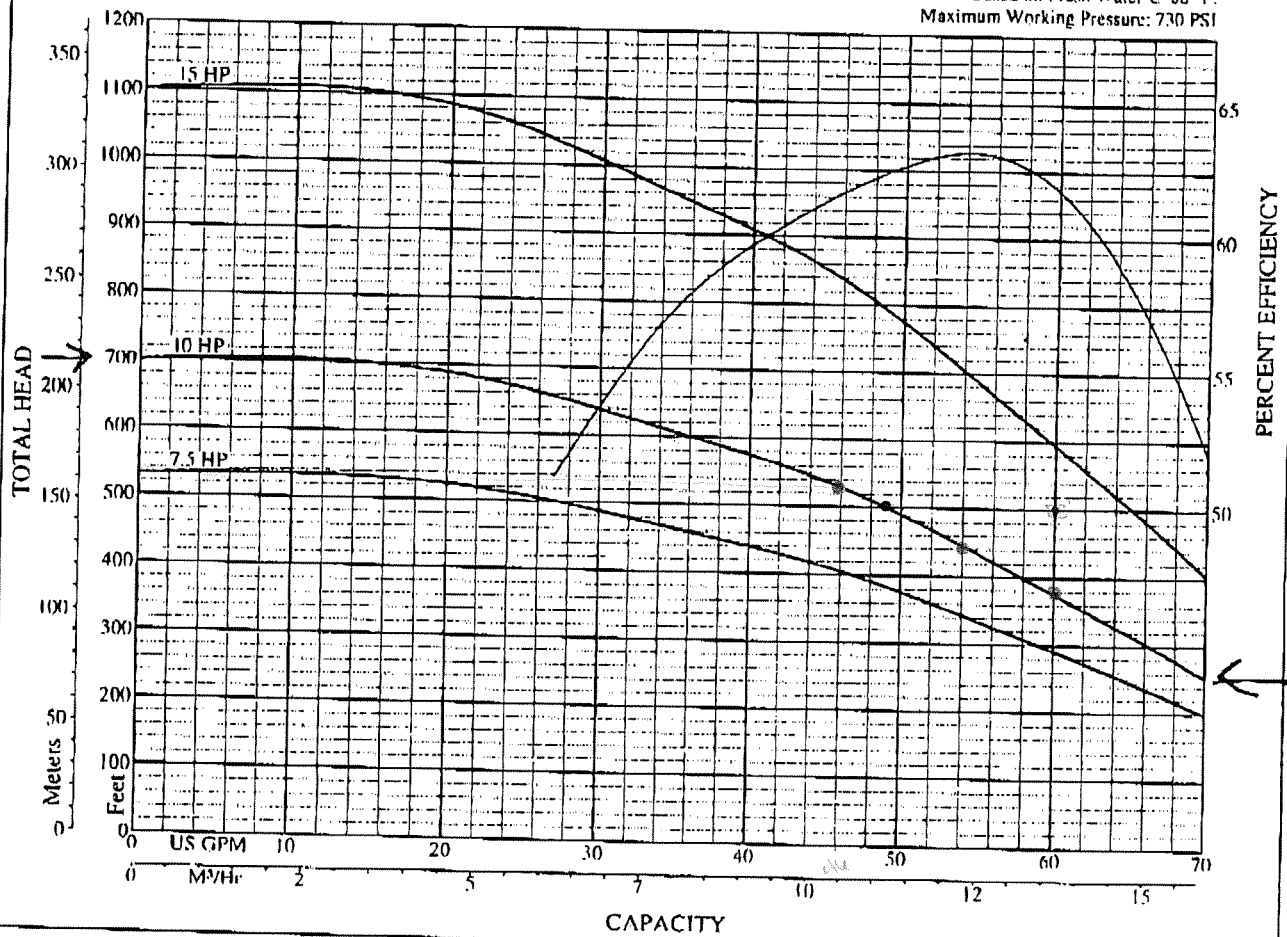
BERKELEY®

SUBMERSIBLE
TURBINE*Pump Curve***6AL**

Nominal RPM: 3450

Based on Fresh Water @ 68° F.

Maximum Working Pressure: 730 PSI



OUTLINE DIMENSIONS / WEIGHTS

HP	stages	Motor size	P length	M* length	MD* dia.	Mtr. wt.	Pump wt.
7.5	12	4"	38.80	29.62	3.75	69	54
7.5	12	6"	39.90	28.00	5.38	120	55
10	16	6"	50.30	30.56	5.38	135	65
15	25	6"	73.10	33.13	5.38	146	89

Note: dimensions = inches; weight = U.S. lbs.

M* Maximum length (Franklin Electric Motor)

MD* Motor diameter (Franklin Electric Motor)

SPECIFICATIONS

Minimum Well I.D.	6.0 Inches
Minimum Submergence @ BEP (above inlet)	10.0 Feet
Capacity Range	27 - 70 GPM
Discharge	3" F NPT

See manufacturer's data for motor cooling requirements

SUPERSEDES

All Previous

Date 11/01/97

Section **ST**

Page 1.02

COONSE WELL DRILLING & PUMP CO., INC.15851 Gunfire Road
Caldwell, ID 83607-7863Phone # 208-454-0190
Fax # 208-454-2743**INVOICE****BILL TO:****PAID****DATE****INVOICE #**

4/20/2004

1598

ADA COUNTY HIGHWAY DIST
ATTN: DON ROELL
3775 ADAMS ST
GARDEN CITY, ID 83704

PROJECT		TERMS	DUE DATE
P O # 20868		Due on receipt	4/20/2004
QTY	DESCRIPTION	UNIT PRICE	AMOUNT
1	BERKELEY MODEL 6AL16 10HP LIQUID-END - SERIAL # G130802 BMT 676005	1,589.00	1,589.00
1	FRANKLIN 10 HP 3 PHASE MOTOR 460V - S/N 03G19-09-0177 - 6" 3 WIRE	1,943.00	1,943.00
1	CSV3B-2T - 2" CYCLE STOP VALVE	725.00	725.00
1	81 GAL CHALLENGER PRESSURE TANK	429.00	429.00
2	LABOR- PUMP INSTALL	75.00	150.00

Pump Size - 10 HP

THANK YOU FOR YOUR BUSINESS! PLEASE PAY BY THIS INVOICE.

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Total \$4,836.00**Payments Applied** \$-4,836.00**Balance Due** \$0.00

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

Date: 3/3/2004 Time: 5:34:18 PM

63-31688 License Exam Volume Calculation

Volume Required (V_R) Calculation:

Truck = 1 @ 4,000 gallon capacity

Filled = 4 times a day

Operation Time = 3 months in spring (March-April-May) = 92 Days

$4,000 \text{ gal} \times 4 \text{ times/day} = 16,000 \text{ gal/day}$

$16,000 \text{ gal/day} \times 92 \text{ days/yr} = 1,472,000 \text{ gal/yr}$

$1,472,000 \text{ gal/yr} \div 325,850 \text{ gal/ ac-ft} = 4.5 \text{ ac-ft/yr}$

Volume Diverted (V_D) Calculation:

Rate = 0.16 cfs (max capacity of pump) allowable rate

Days in permitted season of use = 365 days

$V_D = 0.16 \text{ cfs} \times 365 \text{ days} \times 1.9835 \text{ (conversion factor)} = 115.8 \text{ ac-ft/yr}$

$V_R < V_D$ Recommended V_R for diversion volume = **4.5 ac-ft/yr**