

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. 63-124671. Owner City of Notus Phone No. (208) 459-6212Current address P.O. Box 257 [375 Notus Rd]2. Examiner's name Vicky Music EXAM DATE 10-11-113. Accompanied by Jesse Neilson, Jesse DeLosReyes Email jneilson@pharmereng.comAddress same as aboveRelationship to permit holder J N - City Engineer; J D - water operator Phone No. (208) 908-5746 Engineer4. Source ground water tributary to _____**B. OVERLAP REVIEW**1. Other water rights with the same place of use 63-3075, 63-12189, Black Canyon Irr D & Farmers Union shares2. 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	1/4	1/4	1/4	Sec	Twp	Rge	County	Method of Determination/Remarks
			SW	NE	34	5N	4W	Canyon	GPS, topo map

2. Place(s) of Use: Method of determination Notus service area

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	

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.

see attached site plan and pump house layout.			
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Scale: 1" = none

- ☒ 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
Well no. 4	unknown	?	unknown	unknown	unknown

*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
McCrometer			E7000-000	E00-000190		

2. **Measurements:** _____

There is a flowmeter gauge located in the pumphouse on the main pipeline from the well and between the well and the storage tank. The meter indicated a flow rate of 450 gpm during the field exam.

E. NARRATIVE/REMARKS/COMMENTS

Proof of beneficial use was due February 1, 2000, the permit lapsed and the applicant filed for reinstatement. The new proof due date was February 1, 2002; the applicant submitted proof timely and paid the correct \$150 fee. During reinstatement, the priority date was advanced to 9/12/98. The place of use remark on the permit states, "The place of use is within the City of Notus and surrounding service area." This condition will be update to the current one.

The City has surface water shares from Black Canyon Irrigation District and Farmers Union irrigation. However, the irrigation entities have not maintained a delivery system capable of distributing the surface water, and the City does not have the infrastructure or authority to delivery the surface so the City parks are irrigated with ground water. The City is attempting to gain the authority via legal channels.

Water from the well is pumped via a 6" buried mainline to the pumphouse and then into a 300,000 gallon reservoir. The water is pumped from the reservoir through 3 booster pumps located in the pumphouse, and then to the City distribution system. The City could not find any file with pump or motor specifications, pump test results or pump curves. The Jesse Neilson, P.E., the City Engineer checked with IDEQ but they did not have any information pertinent to this well. The Mr. Neilson stated that the IDEQ City of Notus PWS # is 3140083.

The City applied for 2.22 cfs. There are 2 municipal overlaps: 63-3075 for 1.2 cfs and 63-12189 for 1.5 cfs. The City has been engaged in a legal dispute with the School District over right 63-12189 and indicated that it will be split between the City and the School District and the City will retain about 1.44 cfs of the right for a total of 2.64 cfs. Mr. Neilson supplied a population projection graph with historical data and projections by Pharmer Engineering, the firm for which Mr. Neilson works, and a projection calculated by Canyon County for inclusion in their Master Plan. The projections range from 550 currently to between 720 - 850 by the year 2030.

The graph IDWR uses for domestic water use shows that a diversion rate of 1.05 cfs is the standard for 700 households [not individuals]. My calculations range from 0.79 cfs based on a theoretical to 1.1 cfs based on the flow rate when the well was drilled. This is the maximum rate calculated. The only information available from which to calculate a reasonable diversion rate is the flowmeter reading Of 450 gpm which is 1.0 cfs, which I can assume is the maximum flow rate . If the license is approved for the 1.0 cfs, the City will have a total of 2.7 cfs which is ample for the current population, the minor irrigation and any industrial or other uses within the city. The City has not demonstrated that it needs additional water so the rights will be limited to 2.7 cfs.

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?

Delete the water bearing zone condition.

Change permit service area condition to # 124 Place of use is within the service area of the City of Notus municipal water supply system as provided for under Idaho Law.

Also, thought the City is currently using their municipal ground water for irrigation and not using the appurtenant surface water, it is because the surface water is not available. They are trying to rectify this and so the condition has been met and condition 102 retained.

Add E52 - The rights listed below are limited to a total combined diversion rate of 2.7 cfs. Combined Right Nos.: 63-3075, 63-12189 and 63-12467.

F. FLOW CALCULATIONS☒ Additional computation sheets attached

Measured Method:

theoretical calculations attached based on [1] well log and assumptions for h.p. and pressure [2] the flowmeter reading on the day of the field exam. [3] the IDWR reference sheet EXPECTED FLOWS FOR PIPE DIAMETERS which is attached and indicates that for a 6" pipe, a diversion rate of 0.98 or 1 cfs is reasonable. the flowmeter reading represents an actual measurement and is more dependable than the theoretical, which uses too many assumptions.

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

 $V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = \text{not applicable}$ $V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 =$ $V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} =$

2. Volume Calculations for Other Uses:

H. RECOMMENDATIONS**1. Recommended Amounts**

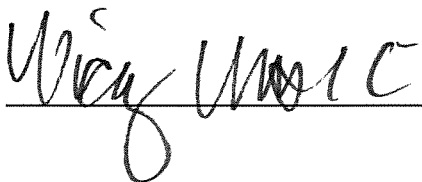
Beneficial Use	Period of Use		Rate of Diversion	Annual Volume
	From	To	Q (cfs)	V (afa)
municipal	1/1	12/31	1.0	not applicable
Totals:			1.0 cfs	

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



Date

12/12/11

SEAL

Reviewer

Date

F. Additional Calculations

calculations based on:

[1] Well log – pumping level = 142', drawdown = 126', static water level = 16', 500 gpm

[a] $500 \text{ gpm} / 448.8 \text{ gpm/cfs} = 1.1 \text{ cfs}$ [close to the flowmeter reading on day of exam]

[b] Theoretical calculations [too many unknowns/ assumptions] -
assumptions: 40 hp pump based on application, pressure = 40, 70% efficiency

$$(8.8)(40)(.70) / 142 + (2.31)(40 \text{ psi}) = 246.4 / 234.4 = 1.05 \text{ cfs}$$

assumptions: 30 hp pump based on application, pressure = 40, 70% efficiency

$$(8.8)(30)(.70) / 142 + (2.31)(40 \text{ psi}) = 184.8 / 234.4 = .79 \text{ cfs}$$

[2] Flowmeter – $450 \text{ gpm} / 448.4 \text{ gpm/cfs} = 1 \text{ cfs}$ [best method based on observable data]

EXPECTED FLOWS FOR PIPE DIAMETERS

City of Norwalk
63-12467

This is for rough estimate for **pump & closed pipeline** system.

Use to double check other measurements/estimates.

Assumes optimum design.

$$Q = VA \quad \text{where: } V = 5 \text{ ft/sec} \quad A = \pi r^2 \quad (\text{radius in ft.})$$

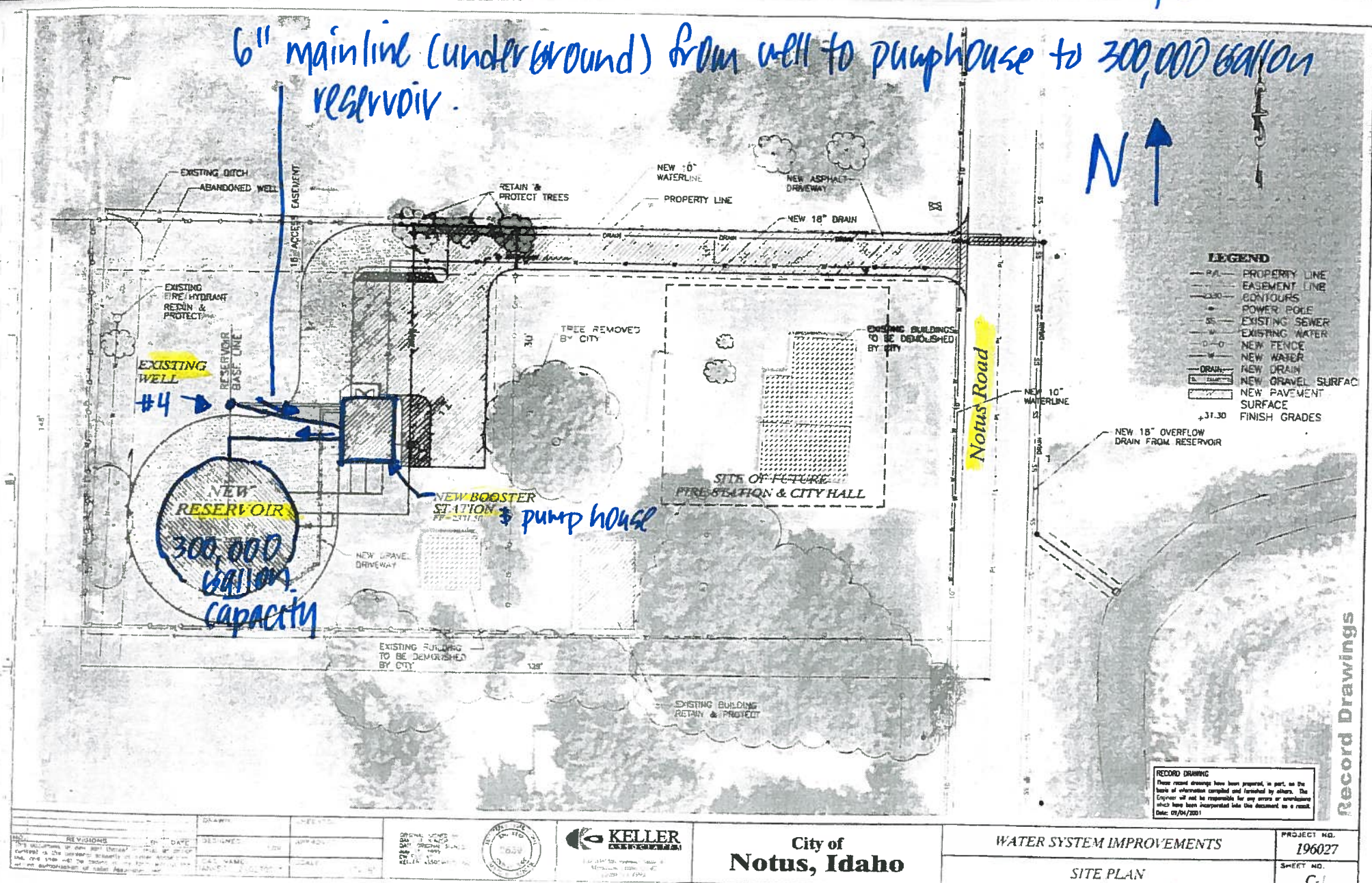
DIAMETER (INCHES)	RATE (CFS)
01	0.03
02	0.11
03	0.25
04	0.44
06	0.98
08	1.74
10	2.73
12	3.93
14	5.34
16	6.98
18	8.83
20	10.90
22	13.19
24	15.70
36	35.34
48	62.83



63-12467
City of Notus

6" mainline (underground) from well to pump house to 300,000 gallon reservoir.

N ↑



Pump house

63-12467
City of Notus

LOUVER SCHEDULE

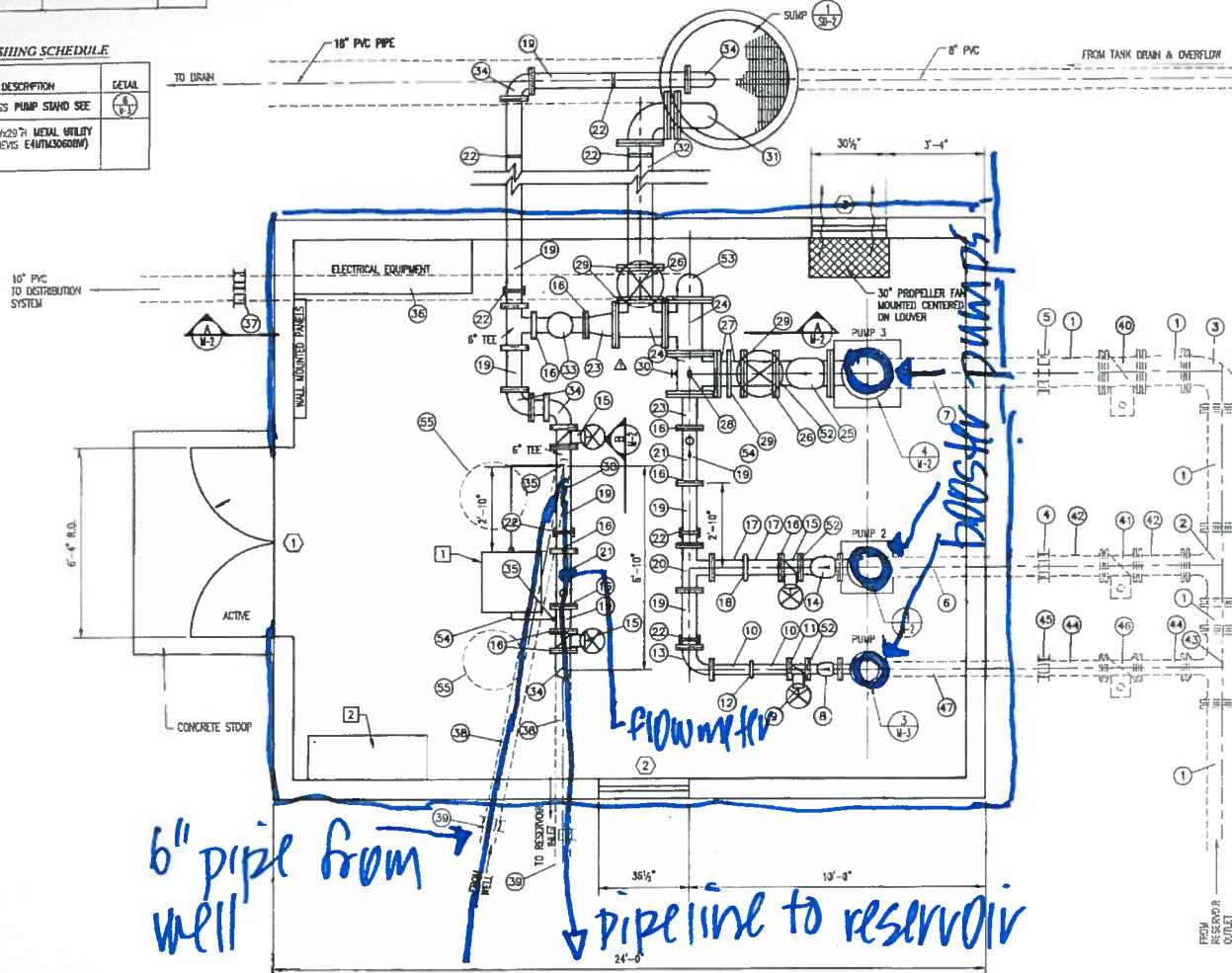
MARK	SIZE	WIDTH	HEIGHT	OPERATOR	MOUNTING HEIGHT (BOTTOM ABOVE FLOOR)	DETAIL
(2)	36	36	36	MOTOR	2'-8"	(A)
(3)	30	30	30	MOTOR	4'-4"	(B)

DOOR SCHEDULE

MARK	STYLE	TYPE	SIZE	FRAME	DETAILS	THRESHOLD	DOOR BOTTOM	WEATHERSTOP	LOCKSET	CLOSER	STOP	FLUSH BOLT
(1)	FULL FLUSH	HOLLOW STEEL INSULATED DOUBLE WITH ASTIRACAL	6'-0" 7'-0" 1 1/2"	16 GA. HOLLOW METAL	PAINT	3 PWR	PEMCO 176A	PEMCO 315CH	PEMCO 303AS	2 REQ'D	2 REQ'D	REQ'D

FURNISHING SCHEDULE

MARK	DESCRIPTION	DETAIL
(1)	FIBERGLASS PUMP STAND SEE	(A)
(2)	30" DIA 50" W 29 7/8" METAL UTILITY TABLE (BEYOND E-UTM3060HW)	(B)



EQUIPMENT LIST

- (1) 12" PVC Pipe
- (2) 12"x8" MJ Ductile Iron Tee With Thrust Blocks
- (3) 12" MJ Ductile Iron Tee With Thrust Blocks
- (4) 6" Flexible Transition Coupling
- (5) 12" Flexible Transition Coupling
- (6) 8-5/8" Steel Pipe
- (7) 12-3/4" Steel Pipe
- (8) 4" Check Valve
- (9) 4" Butterfly Valve with Handwheel Operator
- (10) 4" Ductile Iron Pipe PE x Groove End
- (11) Flange
- (12) 4" Groove End Coupling
- (13) 6" x 4" Ductile Iron Reducing Bend
- (14) 6" Check Valve
- (15) 6" Butterfly Valve with Handwheel Operator
- (16) Flange
- (17) 6" Ductile Iron Pipe PE x Groove End
- (18) 6" Groove End Coupling
- (19) 6" Ductile Iron Pipe
- (20) 6" Ductile Iron Pipe
- (21) 6" Flowmeter
- (22) Pipe Support (See Detail 4/M-3)
- (23) 10" x 6" Forged Steel Sudden Expansion Spool
- (24) 10" Ductile Iron Pipe
- (25) 10" Check Valve (UL/FM Listed)
- (26) 10" Gate Valve O S & Y (UL/FM Listed)
- (27) 10" Ductile Iron Pipe PE x Groove End
- (28) Pressure Gauge With Slocock (0-160 psi)
- (29) Flange
- (30) 3/4" Hose Bibb
- (31) 10" Ductile Iron Bend
- (32) 10" Ductile Iron Pipe
- (33) 6" Relief Valve
- (34) 6" Ductile Iron Bend
- (35) 1" Topping Saddle
- (36) 10" Ductile Iron Pipe
- (37) 10" Flexible Coupling
- (38) 6" Ductile Iron Pipe
- (39) 6" Flexible Coupling
- (40) 12" Buried Butterfly Valve with Valve Box
- (41) 6" Buried Butterfly Valve with Valve Box
- (42) 6" PVC Pipe
- (43) 12"x6" MJ Ductile Iron Tee With Thrust Blocks
- (44) 6" PVC Pipe
- (45) 6" Spill Disk Check Valve
- (46) 6" Buried Butterfly Valve with Valve Box
- (47) 6" Ductile Iron Pipe
- (48) 10" Ductile Iron Bend with Restrained Joints
- (49) 10" Ductile Iron Pipe PE x FLG
- (50) 6" Ductile Pipe PE x FLG
- (51) 6" Ductile Iron Bend with Restrained Joints
- (52) Pipe Support (See Detail 5/M-3)
- (53) 10" Ductile Iron Bend
- (54) Chemical Feed Line (See Detail 7/M-3)
- (55) Chemical Drum (By City)

RECORD DRAWING
These record drawings have been prepared, in part, on the basis of information compiled and furnished by others. The Engineer will not be responsible for any errors or omissions which have been incorporated into this document as a result. Date: 07/24/2021

APPROVED: 11/17/20
DESIGNED: DRK
CAD NAME: 0270M01d
SCALE: 1/2"=1'-0"

ORIGINAL SIGNED BY:
DATE: 11/17/20
DATE: 11/17/20
BY: 11/17/20
KELLER ASSOCIATES, INC.



KELLER ASSOCIATES, INC.
131 SW 5th Avenue, Suite A
Meridian, Idaho 83642
(208) 288-3992

City of
Notus, Idaho

WATER SYSTEM IMPROVEMENTS
FLOOR AND PIPING PLAN

PROJECT NO.
196027
SHEET NO.
M-1

Record Drawings

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: : :

1. WELL TAG NO. D 000 9380
 DRILLING PERMIT NO. 63-98-W-0641-000
 Other IDWR No. 63-12467

2. OWNER:
Name City of Natus, Idaho
Address P.O. Box 257
City Natus State ID Zip 83456

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N
 W E S
 Twp. 5 North ☒ or South ☐
 Rge. 4 East ☐ or West ☒
 Sec. 34 1/4 1/4 1/4 NE 1/4
 Gov't Lot _____ County Canyon
 Lat. : : Long. : :
 Address of Well Site 207 Notus
 Rd. City _____
 (Give at least name of road + distance to Road or landmark)

Lt. _____ Blk. _____ Sub. Name _____

4. USE:

☐ Domestic ☒ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other

5. TYPE OF WORK check all that apply (Replacement etc.)

☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD

☐ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other *Reverse*

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	
Bentonite 5"	0	180	42500#	Overbore
ESS7 Sand	190	280'	13500#	overbore
Bentonite 3"	290'	395'	27500#	Overbore

Was drive shoe used? ☐ Y ☒ N Shoe Depth(s) _____
Was drive shoe seal tested? ☐ Y ☐ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Linear	Welded	Threaded
18"	+3	180'	375	Steel	☒	☐	☒	☐
10"	120	205	368	Steel	☒	☐	☒	☐
10"	235'	245'	369	Steel	☒	☐	☒	☐

Length of Headpipe 35' Length of Tailpipe 10'

9. PERFORATIONS/SCREENS

Perforations
Screens
Method *S.S.*
Screen Type *Johnson wire*

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
205	215	1025		10"	SS.	☒	☐
215	225	1035		10"	SS.	☒	☐
225	235	1015		10"	SS.	☒	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE: MICRO

16 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or
control devices: 3" access

11. WELL TESTS:

☒ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
500	126'	142'	3 days

Water Temp. 59° Bottom hole temp. _____
Water Quality test or comments: _____

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

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
28"	0	15	Top soil		
1	15	33	Sand & Gravel		
	33	50	Brn. Clay		
	50	71	Fine to Med. Sand		
	71	203	Blue Clay & S&S Sand		
18"	203	220	Fine & Coarse Sand		
1	220	223	Blue Clay		
	223	227	Fine Sand		
1	227	595	Blue Clay & S&S Sand		
12" Hole From 245' to Bottom Filled with 3" Bentonite					
RECEIVED JUL 16 1999 Department of Water Resources					
Completed	Depth		245'	(Measurable)	
Date: Started	4-16-99		Completed	7-2-99	

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 Riverside Inc. Firm No. 333

Firm Official _____ Date _____

Driller or Operator *[Signature]* Date *7-12-99*

(Sign once if Firm Official & Operator)

IDAHO DEPARTMENT OF WATER RESOURCES

WELL INSPECTION FORM

1. DRILLING PERMIT NO: 63-98-W-0641 OTHER APPLICABLE NO: 63-12467
2. OWNER: City of NOTUS Phone: _____
Address: P.O. Box 251, NOTUS, ID 83656-0251
3. WELL LOCATION: Twp 5N, Rge. 4W, Sec. 34, SW 1/4 NE 1/4
County Canyon (Provide sketch map and photo on reverse.)
4. DRILLER: Riverside Inc. Lic. No. 333
When Drilled? 1-2-1999
5. WELL CONSTRUCTION:
Casing Diameter 10 inches Water tight cap? ☒ Yes ☐ No Access Port: ☒ Yes ☐ No
Casing $\geq$ 12 inches above ground? ☒ Yes ☐ No - Describe _____
Depth of Casing 245 ft. Method Drilled REVERSE
Condition of Well Casing: ☒ Good ☐ Fair ☐ Poor Describe _____
Control Valve? ☐ Yes ☒ No Pressure Gauge: ☒ Yes ☐ No
Condition of Piping and Valving wheat
Auger to a depth of n/a ft. Evidence of Annular Seal ☒ Yes ☐ No
Are there obvious construction problems that may be a source for contamination or waste of water?
☐ Yes ☒ No (Describe in Remarks and Attach Photo - On Reverse)
6. HYDROLOGIC INFORMATION:
Depth to Static Water 16 ft. Water Temperature 59 °F
Flowing Artesian ☐ Yes ☐ No Pressure: _____ (psi)
Water Sample Taken? ☐ Yes ☒ No If yes, describe purpose _____
Water Quality Measurements/Observations (Describe) n/a - regulated by IDEQ
7. WELL USE:
☐ Domestic ☐ Irrigation ☐ Stock
☐ Test ☒ Municipal ☐ Industrial
☐ Abandoned ☐ Waste Disposal/Injection ☐ Not Used
☐ Other: _____

8. POSSIBLE CONTAMINATION SOURCES:

Is there evidence of Chemigation? ☐ Yes ☒ No

If yes, is there a check-valve present? ☐ Yes ☐ No

Is there a possible source of contamination nearby? ☐ Yes ☒ No

If yes, what Type? _____

How far away from the well is this source? _____

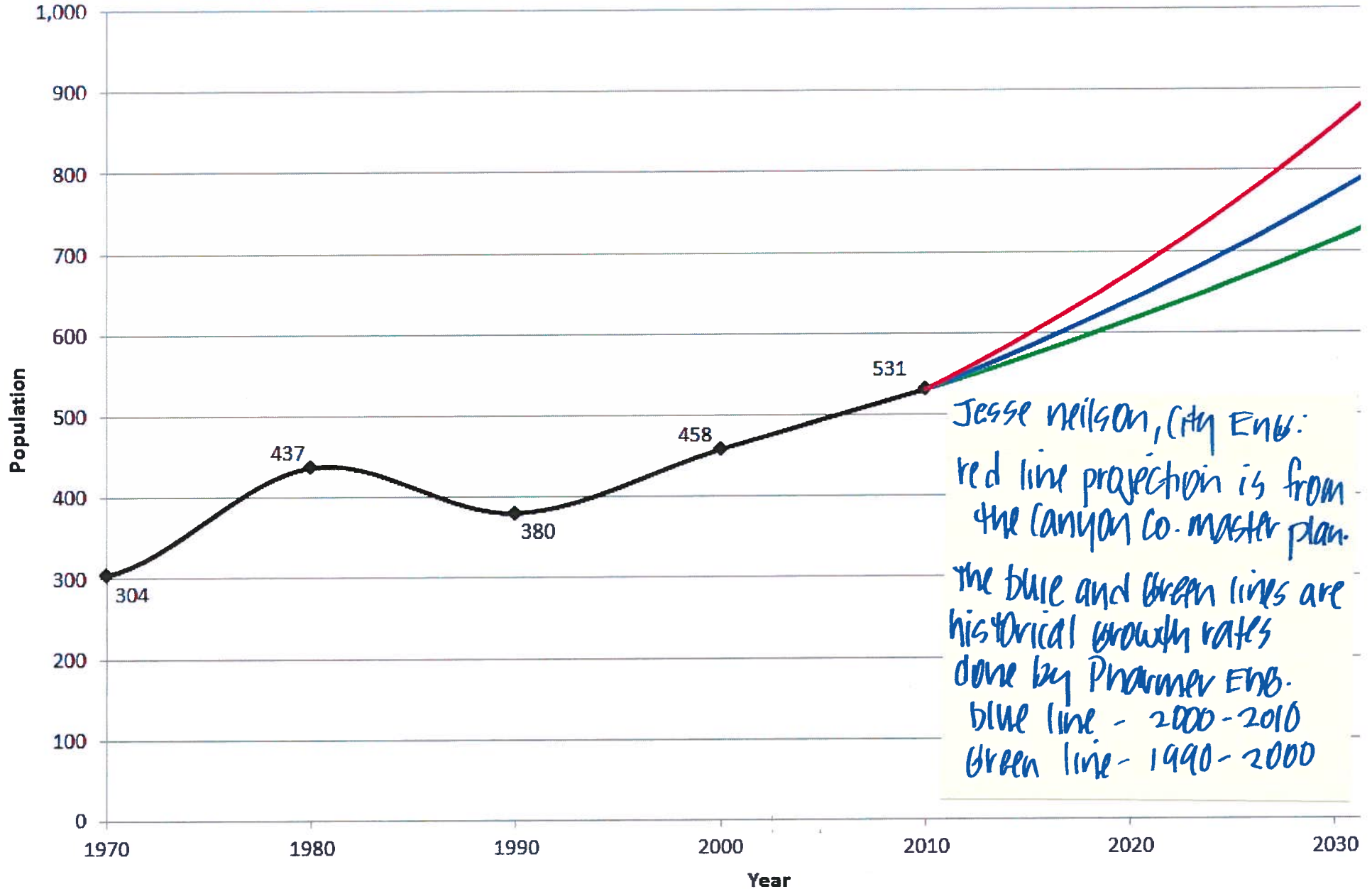
9. REMARKS:

Signature of Dept. Representative & Title

Inspection Date

PHOTOS, DRAWINGS, OTHER ATTACHMENTS:

Population - City of Notus





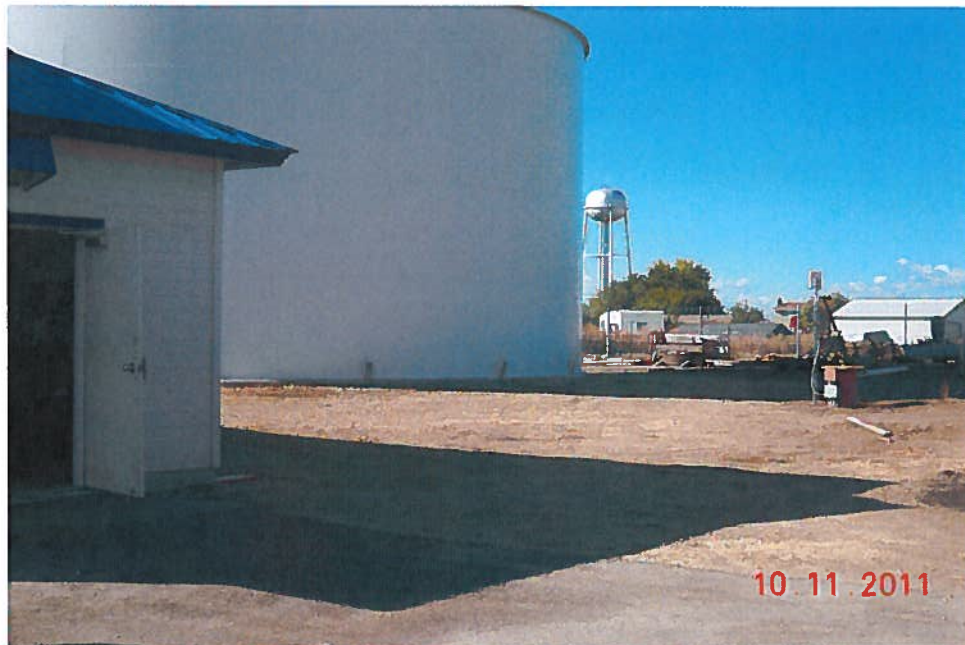
Inside pumphouse. Flowmeter gauge seen middle of photo. Water is pumped through 6" pipe up to piping seen in middle right and then underground [middle left] to reservoir . Piping in front of picture is from reservoir to booster pumps.



Booster pumps.



Well # 4. Drilled to 595' and filled with bentonite from 295' to 595'. 10" diameter. Screened from 205' to 235'. Submersible pump – specs of pump and motor unknown.



Pump house seen in left front, 300,000 gallon reservoir – middle, well – right



State of Idaho

DEPARTMENT OF WATER RESOURCES

Western Region, 2735 Airport Way, Boise, Idaho 83705-5082

Phone: (208) 334-2190 FAX: (208) 334-2348 www.idwr.idaho.gov

C.L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Interim Director

December 12, 2011

Jesse Neilson, P.E.
City Engineer
City of Notus
P.O. Box 257
Notus, Id 83656

Re Licensing of Permit 63-12467

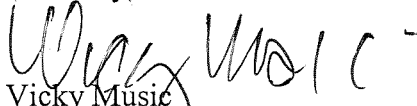
Dear Mr. Neilson:

IDWR is about to finalize licensing of this permit, however, I wanted to inform you about the quantity to be licensed. The original application was for 2.22 cfs. Based on the flowmeter reading during the field exam and other calculations, 1.0 cfs is the maximum IDWR can license. The quantity will be combined with the other City water right nos. 63-3075 and 63-12189 to 2.7 cfs, the current quantity for all rights.

This quantity is ample for the City needs and there is no evidence that the City has developed a greater quantity. To illustrate, IDWR uses a table to estimate reasonable domestic use. The table indicates that 1.0 cfs is sufficient for 550 domestic households. The current population of Notus is approximately 500 people, not households. Hence, the combined quantity is sufficient for the population, the irrigation occurring because the surface water infrastructure is being modified, and any industrial or manufacturing uses the City may currently provide. If you disagree, please provide information that justifies a greater combined quantity.

Any additional information you wish to provide is due by January 13, 2012. Otherwise, the license will be issued for 1.0 cfs and a quantity of 2.7 cfs when combined with water right nos. 63-3075 and 63-12189. Thank you for your attention to this matter.

Sincerely,


Vicky Music
Sr. Water Resource Agent

63-12467
City of NOTUS



- LEGEND**
- Fire Hydrant Locations
 - Water Blowoff Valves
 - Water Meter Locations
 - New Water System (Installed 2000)
 - Existing Water System
 - Existing Sewer System
 - Existing Telephone, Fiber Optic & Cable Lines
 - Existing Culverts

RECORD DRAWING
These record drawings have been prepared, in part, on the basis of information compiled and furnished by others. The Engineer will not be responsible for any errors or omissions which have been incorporated into this document as it reads.