
**VILLAGE OF SUGAR GROVE
BOARD REPORT**

TO: VILLAGE PRESIDENT & BOARD OF TRUSTEES
FROM: BRAD MERKEL, DIRECTOR OF PUBLIC WORKS
SUBJECT: RESOLUTION: WELL #10 PUMP REMOVAL AND INSPECTION
AGENDA: OCTOBER 3, 2023, REGULAR BOARD MEETING
DATE: SEPTEMBER 25, 2023

ISSUE

Should the Village Board approve the Well #10 Pump Removal and Inspection.

DISCUSSION

At the January 9, 2023, Regular Board Meeting, the Village Board approved an agreement with Layne Christensen Company, Inc for water system needs. Layne Christensen has been providing well rehabilitation and construction services to the Village of Sugar Grove for more than 50 years. The service agreement is non-binding and does not obligate the Village to utilize Layne Christensen for work. Individual Task Orders detailing the description of the work, costs, schedule, etc., will need to be executed for each project.

Recently staff noticed the capacity at Well #10 was abnormally low on production so Layne was contacted to perform an orifice test which in fact did confirm that Well #10 is down on production. Layne believes the column pipe may have developed a hole. The only way to resolve or find the source of the lack of production is to pull the pump.

Attached for your review are the proposal and task order detailing the description of work, costs and schedules for the Well #10 Pump Removal and Inspection.

The Pump Maintenance Proposal includes mobilization, remove pump, rack pipe, measure well total depth, conduct component field inspection for an estimated cost of \$43,000.00. The cost to reinstall the pump is also estimated at \$40,000.00.

Given the unknown condition of the pump and column pipe, necessary repairs are estimated at \$110,000.00. Once the Pump is removed a proposal will be submitted with costs to make necessary repairs.

Well #9 was scheduled to be removed and inspected this FY however it is staff's recommendation to remove Well #10 this FY and move Well #9 to next FY.

COST

The estimated cost of the Well #10 Pump Removal and Inspection is \$43,000.00. The total estimated cost of the removal, inspection, repairs and reinstallation is estimated at \$110,000.00. FYE 2024 Account 51-71-7008 includes \$313,000.00 for Well #9 repairs which was included in the Capital Improvement Plan. With this recommended change, FYE 2024 expenses will estimate at \$110,000, pushing the \$313,000 budgeted for Well #9 into FY2024-2025. Completing the Well #10 repairs in FY2024 will push the Capital Improvement Plan repairs and rehabilitation from FY2030 to FY2034

RECOMMENDATION

The Village Board authorizes an agreement for the Well #10 Pump Removal and Inspection with Layne Christensen Company.



RESOLUTION NO. 20231003PW1

VILLAGE OF SUGAR GROVE, KANE COUNTY, ILLINOIS

RESOLUTION AUTHORIZING EXECUTION OF AN AGREEMENT WITH LAYNE CHRISTENSEN COMPANY, INC FOR THE WELL #10 REMOVAL AND INSPECTION.

WHEREAS, the Village of Sugar Grove Board of Trustees find that it is in the best interest of the Village to engage the services of Layne Christensen Company, Inc. to provide professional services to the Village of Sugar Grove, and to execute an agreement;

NOW, THEREFORE, BE IT RESOLVED by the President and Board of Trustees of the Village of Sugar Grove, Kane County, Illinois, as follows:

That it is in the best interests of the Village of Sugar Grove to enter into an agreement between Layne Christensen Company, Inc. and the Village of Sugar Grove for the Well #10 Removal and Inspection. The Director of Public Works is hereby authorized to execute said agreement on behalf of the Village and to take such further actions as are necessary to fulfill the terms of said agreement.

Passed by the President and Board of Trustees of the Village of Sugar Grove, Kane County, Illinois, at a regular meeting thereof held on the 3rd day of October, 2023.

Jennifer Konen, President of the Board
of Trustees of the Village of Sugar Grove,
Kane County, Illinois

ATTEST:

Alison Murphy, Clerk
Village of Sugar Grove

	Aye	Nay	Absent	Abstain
Trustee Matthew Bonnie	_____	_____	_____	_____
Trustee Sean Herron	_____	_____	_____	_____
Trustee Heidi Lendi	_____	_____	_____	_____
Trustee Michael Schomas	_____	_____	_____	_____
Trustee Sean Michels	_____	_____	_____	_____
Trustee James F. White	_____	_____	_____	_____
President Jennifer Konen	_____	_____	_____	_____

September 8, 2023

Mr. Brad Merkel, Public Utilities Supervisor
Village of Sugar Grove
601 Heartland Drive
Sugar Grove, IL 60554

Re: Well #10

Mr. Merkel:

Layne conducted an orifice test on Well 10 yesterday and confirmed that the well's pump is abnormally low on production. The test suggests that a hole may be developing in the column pipe. Layne recommends that Well 10 be taken offline until the pump is removed and the low capacity issue resolved.

If contracted, Layne will perform the work on a time and material basis per the attached Schedule B and will follow the terms and conditions of our Professional Services Agreement (PSA) with the Village. The attached Work Order Form lists Layne's standard published rates. The estimates in this letter include the PSA stipulated 5% deduct applied toward labor and 10% deduct applied toward special services. The following maintenance budget is based upon normal pump removal without unusual circumstances such as pump separation.

Layne recommends a Phase I scope of work to include

- Mobilize and remove pump, rack pump components onsite.
- Conduct meg-ohm testing throughout the pump removal and cable/motor separation.
- Perform a visual inspection of pump components on site
- Perform a shop inspection of the Byron Jackson motor, the cable assembly, and an unassembled bowl assembly.
- Reinstall and test pump after necessary repairs.

It is difficult to budget the cost of necessary repairs prior to inspecting the pump components. It is Layne's custom to meet with a Village representative and our Crew Foreman to conduct a preliminary inspection of the racked components on site. During this inspection, it is decided which components require additional clean up and inspection in Layne's Aurora, IL yard. Layne encourages the Village to visit our yard to inspect components with us. At this point, Layne is in position to present a Pump Inspection Report with observations, recommendations, and an accurate repair cost estimate.

Phase I Budget Estimate

- | | |
|--|-----------------|
| 1. Mobilize, remove pump, rack on site, measure well total depth, conduct component field inspection | \$40,000 |
| 2. Shop inspect motor, Hi-Pot test cable, and inspect unassembled bowl | \$ 3,000 |
| 3. Reinstall pump after necessary repairs, conduct capacity test to waste, demobilize | <u>\$40,000</u> |

Total Phase I Estimate	\$83,000
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Possible Repair Costs, Services

- | | |
|--|------------|
| A. Haul string of Line Pipe (column) from and to well site | \$12,000 |
| B. Sandblast Line Pipe for inspection | \$ 6,000 |
| C. Disassemble, clean, inspect bowl assembly | \$ 3,000 |
| D. Televiser well | \$ 1,350 |
| E. Cut and rethread 10" Line Pipe | \$200 each |
| F. Sand bailing | \$473 / hr |

Possible Repair Costs, Materials

- | | |
|---|------------|
| a. 10" T&C Line Pipe, epoxy coated, Layne inventory | \$162 / ft |
| b. Estimate miscellaneous consumables; airline, stainless banding, etc. | \$2,000 |

A rough total project budget is \$110,000 based upon rebuilding the bowl, replacing 40' of epoxy coated Line Pipe.

Based upon our current schedule, Layne is in position to mobilize to the site within two to three weeks of the Village's written authorization to proceed.

Thank you for the opportunity to furnish this information. If you have any questions, or if Layne can be of any service, please do not hesitate to contact me.

Layne Christensen Company



William Balluff, P.E.
WRD Account Manager III



WORK ORDER



Layne Christensen Company

721 W. Illinois Avenue, Aurora, IL 60506; Phone (630) 897-6941
229 W. Indiana Ave., P.O. Box 489, Beecher, IL 60401; Phone (708) 946-2244

PROFESSIONAL SERVICES AGREEMENT

SCHEDULE B

Purchaser: VILLAGE OF SUGAR GROVE, IL

Job Location: WELL 10

SERVICE RATES - EFFECTIVE OCTOBER 1, 2022

	Straight Time		Overtime Doubletime	
	Per Hr.	8 Hr. Day	Per Hr.	Per Hr.
Serviceman w/hand tools	206.00	1648.00	309.00	412.00
Serviceman w/service truck and hand tools, or welder	246.00	1968.00	349.00	452.00
Helper	182.00	1456.00	273.00	364.00
Serviceman and 1 Helper	388.00	3104.00	582.00	776.00
<u>Small Rig or Winch Truck</u>				
1 Man Crew	257.00	2056.00	360.00	463.00
2 Man Crew	439.00	3512.00	633.00	827.00
3 Man Crew	621.00	4968.00	906.00	1191.00
<u>Middle Rig, Large Hoist or Flatbed Crane</u>				
1 Man Crew	274.00	2192.00	377.00	480.00
2 Man Crew	456.00	3648.00	650.00	844.00
3 Man Crew	638.00	5104.00	923.00	1208.00
<u>Big Rig, Large Hoist and Poles, or Large Crane</u>				
1 Man Crew	316.00	2528.00	419.00	522.00
2 Man Crew	498.00	3984.00	692.00	886.00
3 Man Crew	680.00	5440.00	965.00	1250.00
4 Man Crew	862.00	6896.00	1238.00	1614.00
Power Tong Usage, per 8 hour shift		470.00		
<u>Machine Shop/Yard Labor and Equipment</u>				
Machinist and Equipment	197.00	1576.00	286.00	375.00
12" Threading Machine and Operator	223.00	1784.00	312.00	401.00
Serviceman w/hand tools	178.00	1424.00	267.00	356.00
Helper	172.00	1376.00	258.00	344.00
Sandblast Equipment and 2 man crew	395.00	3160.00	570.00	745.00

Mileage: Auto: \$0.65

Pickup: \$0.90

1-Ton: \$1.35

2-1/2 Ton Flatbed: \$2.50

Semi-Tractor: \$4.00

Subsistence-Per Man

Over 55 miles radius from home office.....\$68.00 + Hotel

The undersigned Purchaser hereby instructs Layne Christensen Company (Contractor), to proceed with the work described with the understanding that the Terms and Conditions shown on the reverse are hereby incorporated as part of this Quotation and with the specific understanding that Contractor will not be held liable for any damage in any way whatsoever for failure to complete the described work, nor for any injury or damage resulting from Contractor's efforts to perform such work, or for delay on Contractor's part in completing same. All work described herein will be provided as quoted above or on a cost plus basis at the hourly rates provided. All quotes indicated, if any, are estimates based on the best information available prior to beginning work. Purchaser's pumps, motors, parts and/or accessories may be stored by the Contractor for sixty (60) days from the date of invoice or other written notice from Contractor. After said sixty (60) days, disposal of such equipment may be made by the Contractor without incurring any liability. All hours worked before or after Contractor's normal work day hours and all hours worked on Saturdays, will be billed at time and one-half rates. All work on Sundays and/or any federally recognized holiday will be billed at double time rates.

REMARKS:

SUBMITTED WITH REPAIR ESTIMATE OF 09/08/2023

Work Authorized on Behalf of Purchaser By: _____

Date: _____

Title: _____



WELL TEST DATA SHEET

Layne Christensen Company

Layne-Western Division

P-5 Type / common

W13

PROFESSIONAL SERVICES FOR WATER SYSTEMS

229 West Indiana Avenue • Beecher, Illinois 60401 • Phone: 708/946/2244

Job Sugar Grove
 Location 455 Anson Ave
 Dia. of Well 18"
 Depth of Well 1436'
 Length of Airline 887'
 Non-Pumping Level 527'
 Orifice Size 8x6

Well No. 10Date Tested 9-7-23Tested By WalkerlinDrive 300HP, 14" 460V, Type HPump Used: Column and Shaft 10" T & CBowls 135T. 12 kmmManufacturer Bryan JacksonSerial No. Moran S/N: 14T-1002-4-1

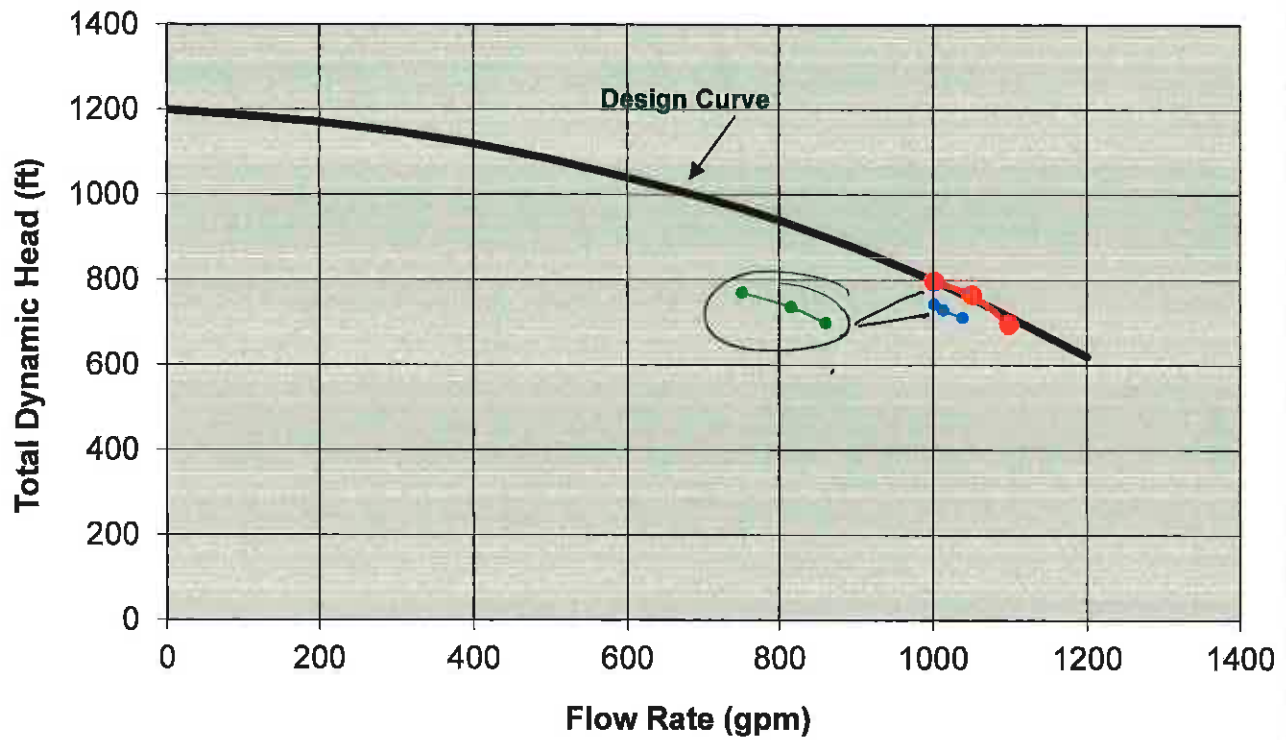
Time	Piezometer Reading (in.)	G.P.M.	Air Gauge Reading (feet)	Pumping Level	Drawdown	Disch. Pressure		Total Pumping Head	Remarks
						Lbs.	Feet		
			360	527	static				FLA=367
								318-317-307	
8:35	22.5	875 751	284	603	76	70		Clear	
8:45	22.5	751	280	607	80	70			
8:55	22.5	751	279	608	81	70	162	770	
9:05	25.5	815	272	615	88	50		308-307-299	
9:15	25.5	815	268	619	82	50			
9:25	25.5	815	267	620	93	50	116	736	
9:35	29.5	860	260	627	100	30			
9:45	29.5	860	260	627	100	30		313-312-302	
9:55	29.5	860	258	629	102	30	69	698	
$SPQ = 751/81 = 9.3$ $= 815/93 = 8.8$ $= 860/102 = 8.4$									
Meg From Starter									
				40					
				38					
				38					

SUGAR GROVE	WELL #10			WELL AND PUMP HISTORY							
DATE	ACTION	SL	CAP	PL	DD	#	TDH	AMPS/367	SPQ	TD	NOTES
12/19/2005	TEST PUMP	497	1566	742	245				6.4	1432	NEW WELL
12/21/2005	TEST PUMP	502	1461	747	245				6.0		NEW WELL
9/14/2006	NEW PUMP	528	1038	682	154	60	821	313/312/325	6.7		NEW PUMP
11/7/2012	PM	543	1060	663	120	50	779	317/329/319	8.8		METER
12/2/2013	PM	541	1097	644	103	50	760	318/328/317	10.7		METER
12/3/2015	PM	543	1116	643	100	50	759	320/331/318	11.2		METER
11/15/2016	PM	536	1119	626	90	50	742	320/325/323	12.4		meter, meg 4000 +
1/9/2018	PM	528	1110	649	121	50	765	327/323/327	9.2		meter, meg < 1
4/2/2019	PM	539	1102	613	74	50	729	339/339/331	14.9		meter, meg < 1
6/18/2021	MAINT	582	1050	649	67	50	765	305/308/303	15.7		INSTALLSPRMTR, NEWBWL
2/22/2022	PM	527	1062	627	100	50	743	311/304/315	10.6		ORIFICE
2/8/2023	PM	507	1001	627	120	50	743	315/312/307	8.3		ORIFICE
9/7/2023	PM	527	815	620	93	50	736	308/307/299	8.8		ORIFICE TESTED DUE TO LOSS IN CAPACITY

~~WAT~~ ←
 WAT ORF IN CAPACITY, SAME AMPS -
 INDICATES A HOLE IN PIPE



Sugar Grove - Well No. 10 Pump Curve Date Tested: 04/02/2019 PM



Design Pump Curve (Byron Jackson 13 st 12EMM)		6/18/2021 NEW BOWL		2/8/2023 PM		9/7/2023 TEST	
Flow Rate	Total Head	Flow Rate	Total Head	Flow Rate	Total Head	Flow Rate	Total Head
0	1200	1001	797	1001	743	751	770
200	1170	1050	765	1013	729	815	736
400	1120	1098	696	1038	711	860	698
600	1040						
800	940						
1000	800						
1200	620						

9/7/23 Test WAY OFF
2.21 & Feb PWM Test