



Terry Arps, Mayor, Trustee One
Jerrod Davis, Trustee Two
Carla Caruthers, Trustee Three
Jeff Schwarzmeier, Vice Mayor, Trustee Four
Joshua Rowton, Trustee Five

**BOARD OF TRUSTEES FOR THE
LUTHER PUBLIC WORKS AUTHORITY
TUESDAY, JUNE 13, 2023, AT 7:00 P.M.
LUTHER TOWN HALL
108 SOUTH MAIN STREET, LUTHER, OKLAHOMA 73054**

REGULAR MEETING AGENDA

Official action can only be taken on items which appear on the agenda. The Trustees may adopt, approve, ratify, deny, defer, recommend, amend, strike, or continue any agenda item. When more information is needed to act on an item, the Trustees may refer the matter to the Chairman or the Town Attorney, or back to a committee or recommending body. Under certain circumstances, items may be deferred to a specific later date or stricken from the agenda entirely.

1. Call to order
2. Roll Call
3. Determination of a quorum
4. Approval of the Consent Agenda,
 - a. Approval of the Board Minutes from the meetings of May 9 and May 23, 2023.
 - b. Approval of Claims, including Payroll
5. Trustee Comments

Trustee One (Terry Arps)

6. Consideration, discussion, and possible action to adopt **Resolution 2023-02R, A RESOLUTION OF THE BOARD OF TRUSTEES OF THE LUTHER PUBLIC WORKS AUTHORITY, LUTHER, OKLAHOMA, ADOPTING THE FISCAL YEAR 2023-2024 ANNUAL BUDGET FOR THE LPWA IN ACCORDANCE WITH THE PROVISIONS OF THE MUNICIPAL BUDGET ACT.**

Trustee Two (Jerrod Davis)

7. Consideration, discussion, and possible action to authorize repairs on the sewer lift station at Wildhorse Park.

Trustee Three (Carla Caruthers)

Trustee Four (Jeff Schwarzmeier)

Trustee Five (Joshua Rowton)

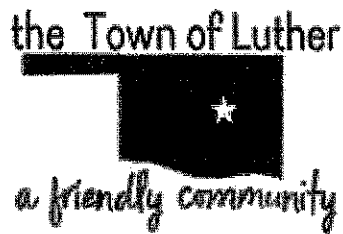
8. **New Business:** In accordance with the Open Meeting Act, Title 25 O.S. 311.A.9 of the Oklahoma Statutes, new business is defined as any matter not known about or which could not have been reasonably foreseen prior to the time of posting the agenda.
9. **Citizen participation:** Citizens may address the Board during open meetings on any matter on the agenda prior to the Board taking action on the matter. On any item not on the current agenda, citizens may address the Board under the agenda item Citizen Participation. Citizens should fill out a Citizen's Participation Request form and give it to the Mayor. Citizen Participation is for information purposes only, and the Board cannot discuss, act or make any decisions on matters presented under Citizens Participation. Citizens are requested to limit their comments to two minutes.
10. **Adjourn.**



Scherrie Pidcock, Town Clerk



Agenda Posted Monday, June 12, 2023, at Luther Town Hall, via MailChimp, on the website at www.townoflutherok.com and on Facebook at The Town of Luther, prior to 7:00 pm.



**BOARD OF TRUSTEES FOR THE LUTHER PUBLIC WORKS AUTHORITY
TUESDAY, MAY 9, 2023, 7:00 P.M.
LUTHER TOWN HALL
108 SOUTH MAIN STREET, LUTHER, OKLAHOMA 73054**

REGULAR MEETING MINUTES

1. Call to Order by Terry Arps.
2. Roll Call by Terry Arps. Present were Terry Arps, Jerrod Davis and Jeff Schwarzmeier. Carla Caruthers was not present during roll call but returned to the room during Item 8. Joshua Rowton was absent.
3. Determination of a quorum was made by Terry Arps.
4. Approval of the Consent Agenda,
 - a. Approval of the Board Minutes from the meeting of April 11 and 27, 2023.
 - b. Approval of Claims, including Payroll
 - c. Review and Approval of Treasurer's Report – Terry Arps made a motion to approve the consent agenda as presented, 2nd by Jeff Schwarzmeier. The Vote: 3 Yes.
5. Consideration of Items Removed from the Consent Agenda – None.
6. Trustee Comments – None.

Trustee One (Terry Arps)

7. Consideration, discussion and possible action to replace failed check valves at the Wildhorse Park sewer lift station at a cost not to exceed \$8,500.00. – Terry Arps made a motion to replace the checks valves using the best bid received, not to exceed \$8,500.00, 2nd by Jerrod Davis. The Vote: 3 Yes.

Trustee Two (Jerrod Davis)

Trustee Three (Carla Caruthers)

Trustee Four (Jeff Schwarzmeier)

8. Consideration, discussion, and possible direction regarding the Fiscal Year 2023-2024 LPWA budget. – A replacement LPWA vehicle, utility rates, and expenses for the new shop were discussed. No Action. Carla Caruthers returned during this item.

Trustee Five (Joshua Rowton)

9. New Business: In accordance with the Open Meeting Act, Title 25 O.S. 311.A.9 of the Oklahoma Statutes, new business is defined as any matter not known about or which could not have been reasonably foreseen prior to the time of posting the agenda. – None.

10. Citizen participation: Citizens may address the Board during open meetings on any matter on the agenda prior to the Board taking action on the matter. On any item not on the current agenda, citizens may address the Board under the agenda item Citizen Participation. Citizens should fill out a Citizen's Participation Request form and give it to the Mayor. Citizen Participation is for information purposes only, and the Board cannot discuss, act or make any decisions on matters presented under Citizens Participation. Citizens are requested to limit their comments to two minutes. - **None.**
11. Adjourn. – **Terry Arps made a motion to adjourn, 2nd by Jeff Schwarzmeier. The Vote: 4 Yes.**



Minutes transcribed by Scherrie Pidcock, Town Clerk

the Town of Luther



a friendly community

**MINUTES OF SPECIAL MEETING OF
THE LUTHER PUBLIC WORKS AUTHORITY
TUESDAY, MAY 23, 2023, 6:30 P.M.
LUTHER TOWN HALL
108 SOUTH MAIN STREET, LUTHER, OKLAHOMA 73054**

1. Call to Order by Terry Arps.
2. Roll Call by Terry Arps. Present were Terry Arps, Jerrod Davis, Jeff Schwarzmeier. Carla Caruthers and Joshua Rowton were absent.
3. Determination of a quorum was made by Terry Arps.
4. Trustee Comments – None.

Trustee One (Terry Arps)

Trustee Two (Jerrod Davis)

Trustee Three (Carla Caruthers)

Trustee Four (Jeff Schwarzmeier)

5. Consideration, discussion, and possible direction regarding the Fiscal Year 2023-2024 budget. – Discussion was held, with questions and answers. Utility rates and increased expenses were discussed. Jerrod Davis made a motion to add \$2,000 to the Capital Outlay budget for the final presentation and public hearing, 2nd by Terry Arps. The Vote: All (3) Yes.

Trustee Five (Joshua Rowton)

6. Citizen participation: Citizens may address the Board during open meetings on any matter on the agenda prior to the Board taking action on the matter. On any item not on the current agenda, citizens may address the Board under the agenda item Citizen Participation. Citizens should fill out a Citizen's Participation Request form and give it to the Mayor. Citizen Participation is for information purposes only, and the Board cannot discuss, act or make any decisions on matters presented under Citizens Participation. Citizens are requested to limit their comments to two minutes. – None.
7. Adjourn. – Terry Arps made a motion to adjourn, 2nd by Jeff Schwarzmeier. The Vote: All (3) Yes.

Minutes transcribed by Scherrie Pidcock, Town Clerk



Luther Public Works Authority
Budget vs. Actuals - FY 2022-2023
MAY 2023 AND YTD

	May 2023				YTD			
	Actual	Budget	over Budget	% of Budget	Actual	Budget	over Budget	% of Budget
Income								
Other/Interest/Tower Rent	1,101.43	1,600.00	-498.57	68.84%	17,870.17	17,600.00	270.17	101.54%
Sales Tax	613.00	613.00	0.00	100.00%	16,923.00	15,905.00	1,018.00	106.40%
Trash & Landfill			0.00		50.00	0.00	50.00	
Utility Revenue (Daily Deposit)	33,295.98	28,600.00	4,695.98	116.42%	348,300.69	314,600.00	33,700.69	110.71%
Water Drop Sales	108.00	250.00	-142.00	43.20%	432.00	2,750.00	-2,318.00	15.71%
Total Income	\$ 35,118.41	\$ 31,063.00	\$ 4,055.41	113.06%	\$ 383,575.86	\$ 350,855.00	\$ 32,720.86	109.33%
Gross Profit	\$ 35,118.41	\$ 31,063.00	\$ 4,055.41	113.06%	\$ 383,575.86	\$ 350,855.00	\$ 32,720.86	109.33%
Expenses								
Capital Outlay		0.00	0.00		17,831.18	30,000.00	-12,168.82	59.44%
Debt Service - 2020 Truck	612.64	613.00	-0.36	99.94%	6,739.04	6,743.00	-3.96	99.94%
Debt Service-Water		0.00	0.00		9,157.48	9,182.00	-4.52	99.95%
LPWA Maintenance & Operations			0.00		0.00	0.00	0.00	
Accounting Services	720.00	420.00	300.00	171.43%	9,700.00	10,700.00	-1,000.00	90.65%
Billing Software		60.00	-60.00	0.00%	994.10	660.00	334.10	150.62%
Credit Card/Bank Fees	415.14	400.00	15.14	103.79%	4,522.25	4,400.00	122.25	102.78%
Dues, Fees, Training, Licenses	387.38	50.00	337.38	774.76%	1,156.88	550.00	606.88	210.34%
Fuel	159.58	100.00	59.58	159.58%	2,012.56	1,100.00	912.56	182.96%
Insurance	609.84	250.00	359.84	243.94%	10,502.59	2,750.00	7,752.59	381.91%
Legal Notice Publications		10.00	-10.00	0.00%	0.00	110.00	-110.00	0.00%
Office Supplies / Expenses	65.61	180.00	-114.39	36.45%	1,614.14	1,980.00	-365.86	81.52%
Phones / Internet / IT	408.73	550.00	-141.27	74.31%	5,910.39	6,050.00	-139.61	97.69%
Postage & Equip	201.50	275.00	-73.50	73.27%	2,317.00	3,025.00	-708.00	76.60%
Repairs/Maintenance/Airgas	778.71	500.00	278.71	155.74%	9,826.92	5,500.00	4,326.92	178.67%
Uniforms	46.14	52.00	-5.86	88.73%	672.94	572.00	100.94	117.65%
Utilities/Street Lights/Parks	293.27	295.00	-1.73	99.41%	3,046.65	3,245.00	-198.35	93.89%
Total LPWA Maintenance & Operations	\$ 4,085.90	\$ 3,142.00	\$ 943.90	130.04%	\$ 52,276.42	\$ 40,642.00	\$ 11,634.42	128.63%
Personnel Services			0.00		0.00	0.00	0.00	
Employee Benefits	1,487.85	2,143.00	-655.15	69.43%	23,488.89	23,573.00	-84.11	99.64%
Salaries / Wages / Payroll Tax	10,620.75	9,789.00	831.75	108.50%	100,846.81	107,321.00	-6,474.19	93.97%
Total Personnel Services	\$ 12,108.60	\$ 11,932.00	\$ 176.60	101.48%	\$ 124,335.70	\$ 130,894.00	-\$ 6,558.30	94.99%

Luther Public Works Authority
Profit and Loss
 July 2022 - May 2023

	<u>Total</u>
Income	
Other/Interest/Tower Rent	17,870.17
Sales Tax	16,923.00
Trash & Landfill	50.00
Utility Revenue (Daily Deposit)	348,300.69
Water Drop Sales	432.00
Total Income	<u>\$ 383,575.86</u>
Gross Profit	<u>\$ 383,575.86</u>
Expenses	
Capital Outlay	17,831.18
Debt Service - 2020 Truck	6,739.04
Debt Service-Water	9,157.48
LPWA Maintenance & Operations	
Accounting Services	9,700.00
Billing Software	994.10
Credit Card/Bank Fees	4,522.25
Dues, Fees, Training, Licenses	1,156.88
Fuel	2,012.56
Insurance	10,502.59
Office Supplies / Expenses	1,614.14
Phones / Internet / IT	5,910.39
Postage & Equip	2,317.00
Repairs/Maintenance/Airgas	9,826.92
Uniforms	672.94
Utilities/Street Lights/Parks	3,046.65
Total LPWA Maintenance & Operations	<u>\$ 52,276.42</u>
Personnel Services	
Employee Benefits	23,488.89
Salaries / Wages / Payroll Tax	100,846.81
Total Personnel Services	<u>\$ 124,335.70</u>
Sanitation Service	
Billing Software	388.57
Collection Fee	95,963.81
Fuel	1,425.95
Uniforms	672.92
Total Sanitation Service	<u>\$ 98,451.25</u>
Sewer System	
Billing Software	400.00
Fuel	1,664.60
Insurance	965.06
Repairs / Maintenance	7,972.52

Supplies / Fees		1,201.98
Uniforms		672.93
Utilities		4,105.42
Total Sewer System	\$	16,982.51
Water System		
Billing Software		400.00
DEQ Water Testing/Permits		20,156.16
Equipment maintenance		1,738.38
Fuel		1,689.58
Meters		4,380.85
Repairs / Maintenance		4,978.22
Supplies		9,768.49
Uniforms		672.93
Utilities		6,559.21
Total Water System	\$	50,343.82
Total Expenses	\$	376,117.40
Net Operating Income	\$	7,458.46
Other Income		
Transfer from Capital Improvement		30,000.00
Transfers In/Out		0.00
Total Other Income	\$	30,000.00
Net Other Income	\$	30,000.00
Net Income	\$	37,458.46



Quotation

EDWARDS EQUIPMENT LLC

Company Address

20010 NORTH PEEBLY RD LUTHER, OK 73054
 Phone: 405-315-5488

Date 6/12/2023
 Quotation # 14020

Quotation For check valve replacement

Customer Name Scherrie Pidcock
 Company Name Town of Luther
 City, State Luther OK
 Email

Quotation valid until: 7/12/2023
 Prepared by: LE

Comments or Special Instructions

None

Salesperson	P.O. Number	Ship Date	F.O.B. Point	Terms
LE				30DAYS

Quantity	Description	Unit Price	Taxable?	Amount
1	LOT OF EQUIPMENT AND LABOR TO INSTALL PUMPS AND BASE ELBOWS.	\$ 49,943.51		\$ 49,943.51
2	4ESCMC75N4 - 7.5hp chopper pumps			\$ -
2	30' PLUG N PLAY CORDS			
2	4X4 BAF			
1	UP GRADE TO CONTROL PANEL			
1	LABOR MECHANICAL			
1	LIFT STATION VAC AND WASH DOWN			
	DELIVERY 6-8 weeks			
	Note the town will provide the pump around if needed.			

NOTE: Taxes are not included in the quoted price. If this project *IS* tax exempt we will need a copy of the tax exemption letter. If this project is *NOT* tax exempt then taxes will be added at invoicing.

Not Included: Freight, Tax, Hatches, 2" Guiderails, Valves, Hoist, Concrete, Interconnecting electrical, Anchor Bolts, Panel Mounting/Stand/Hardware, Junction Boxes, Disconnects, Anything else not specifically listed

Subtotal	\$ 49,943.51
Tax Rate	
Sales Tax	\$ -
Other	
TOTAL	\$ 49,943.51

If you have any questions concerning this quotation, please contact:
 Enter your contact details

Thank you for your business!

LAURA EDWARDS Laura@edwardsequipmentllc.com

Sithe Chopper Pumps

Specifications:

WET END

DISCHARGE: 4", 125 lb. Horizontal Flange Slotted to accommodate 100mm ISO Flanges
STRIKER PLATE: 440C Stainless Steel Heat Treated to 53-60 HRC Hole Pattern to Accomodate 4" 125 # Flange
VOLUTE: Cast Iron ASTM A-48, Class 30
WEAR RING: C954 Lead-Free Bronze
IMPELLER: *Design:* Enclosed Monovane, With Pump Out Vanes on Back Side, Dynamically Balanced ISO G6.3
Material: Ductile Iron ASTM A-536, 65-45-12
SLICING BLADE: 440C Stainless Steel Heat Treated to 53-60 HRC
"O" RINGS: Buna-N
HARDWARE: 300 Series Stainless Steel
COATING SYSTEM: Axalta Corlar® amidoamine epoxy

DRIVER

MOTOR: *Design:* NEMA B Three Phase Torque Curve, Air-Filled, Squirrel Cage Induction, Inverter Duty rated per NEMA MG1
Insulation: Class H
Efficiency: IE3
Voltage: 208, 230, 460, 575 (±10% voltage variation)
Service Factor: 1.15

SHAFT: 416 Stainless Steel
STARTS PER HOUR: 15 per hour, evenly spread
COOLING SYSTEM: Closed loop cooling system
MAX LIQUID TEMPERATURE: 104°F (40°C) Continuous
SUBMERGENCE: Max Depth 66ft (20m)
MOTOR HOUSING: Cast Iron ASTM A-48, Class 35B
SEAL BRACKET: Cast Iron ASTM A-48, Class 35B
BEARING BRACKET ASSEMBLY: Cast Iron ASTM A-48, Class 35B
"O" RINGS: Buna-N
HARDWARE & LIFTING BAIL: 300 Series Stainless Steel
SEAL: *Design:* Tandem Mechanical,
Material: **Inboard:** Carbon Rotating Face, Silicon Carbide Stationary Face
Outboard: Silicon Carbide Rotating Face, Silicon Carbide Stationary Face
Elastomer: Buna-N
Hardware: 300 Series Stainless Steel

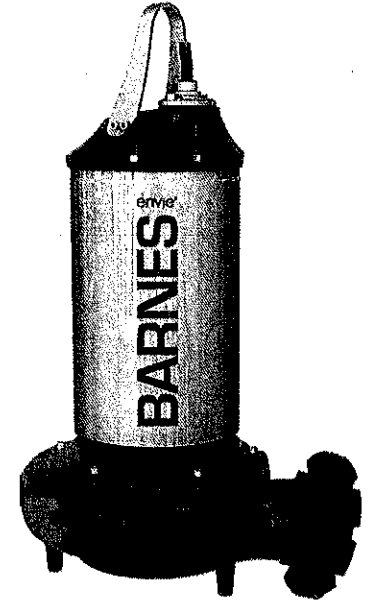
CORD ENTRY: Custom Molded, Quick Connected for Sealing and Strain Relief
POWER CORD: CSA Certified Submersible Power Cable 2000V - Ordered Separately
SPEED: 1750 RPM
UPPER BEARING: *Design:* Single Row, Ball, permanently Grease Lubricated
Load: Radial
LOWER BEARING: *Design:* Double Row, Ball, permanently Grease Lubricated
Load: Radial & Thrust
COATING SYSTEM: Resicoat® R4 Powder Coat Epoxy

MONITORING

MOISTURE SENSOR: Normally Open (N/O) Float Sensor with Resistor, Located in Seal Chamber, Requires Relay in Control Panel
TEMPERATURE SENSOR: Three Normally Closed (N/C) Thermal Sensors, One per Phase, Embedded in Stator Windings, To be wired in series with control circuit
OVERLOAD PROTECTION: Must be included in control panel
MARKING: CSA

OPTIONS

OPTIONAL EQUIPMENT: White Iron Impeller, Impeller Trims, Impeller Types, Cord Length, Seal options, Certified Testing
ACCESSORIES: Break Away Fittings (BAF), Vertical Suction Elbow Stand, Horizontal Cart System, Horizontal Fixed Bracket System, Control Panel, Level Controls, Conditioning Stand, Leg kit, Concrete Adapter Plate



SITHE ENVIG

Series: 4ESCM 5 - 15HP, 1750RPM, 60Hz, IE3 Premium

This product may be covered by one or more of the following patents and other patent(s) pending: NZ DSN NO. 424412, NZ DSN NO. 424413, AUS DSN NO. 201812608, AUS DSN NO. 201812609, EU Design Reg. 005293040-0001

DESCRIPTION:

SUBMERSIBLE WET/DRY PIT
CHOPPER PUMP DESIGNED FOR
RAW SEWAGE APPLICATIONS.



WARNING:
CANCER AND REPRODUCTIVE HARM -
WWW.P66WARNINGS.CA.GOV

Sithe Chopper Pumps

MODEL NO	Driver	HP	VOLT / PH	RPM (Nom)	NEMA START CODE	FLA	LRA	CORD P/N ▲	CORD SIZE	POWER FACTOR AT % LOAD			MOTOR EFFICIENCY AT % LOAD			Weight (lbs)	Working Pressure (PSI)
										100	75	50	100	75	50		
4ESCMS064	E21	5	208/3	1750	J	15.0	101	125496	12/4 - 18/4	78.2	72.5	61.4	89.5	90.1	88.9	561	55
4ESCMS064	E21	5	208-230/3	1750	J	14.1 / 13.8	80.3 / 86.8	125496	12/4 - 18/4	75.5	68.8	57.5	89.9	89.9	88.6	561	55
4ESCMS064	E21	5	460/3	1750	J	6.9	43.4	125497	12/4 - 18/4	75.5	68.8	57.5	89.9	89.9	88.6	561	55
4ESCMS054	E21	5	575/3	1750	J	5.5	37.0	125497	12/4 - 18/4	77.9	72	60.8	89.5	90.1	88.8	561	55
4ESCMS7564	E21	7.5	208/3	1750	H	21.0	133	125496	12/4 - 18/4	82.4	78.7	69.8	91.7	92.8	92.2	561	55
4ESCMS7564	E21	7.5	208-230/3	1750	H	20.4 / 18.7	109 / 126	125496	12/4 - 18/4	79.6	74.5	64	91.7	91.2	90.1	561	55
4ESCMS7564	E21	7.5	460/3	1750	H	9.7	60	125497	12/4 - 18/4	81.9	77.9	68.6	91.7	92.7	92.1	561	55
4ESCMS7564	E21	7.5	575/3	1750	H	7.5	50	125497	12/4 - 18/4	79.6	74.5	64	91.7	91.2	90.1	561	55
4ESCMS10064	E21	10	208/3	1750	H	28.0	181	125498	8/4 - 18/4	81	76.9	67.3	91.7	92.5	92.2	561	55
4ESCMS10064	E21	10	208-230/3	1750	H	27.5 / 25.6	146 / 170	125498	8/4 - 18/4	80.3	75.4	65.1	91.7	91.5	90.9	561	55
4ESCMS10064	E21	10	460/3	1750	H	12.8	81	125497	12/4 - 18/4	80.3	75.4	65.1	91.7	91.5	90.9	561	55
4ESCMS10054	E21	10	575/3	1750	H	10.2	69	125497	12/4 - 18/4	80.3	75.7	65.7	91.7	92.4	92	561	55
4ESCMS15064	E21	15	208/3	1750	J	42.0	330	125498	8/4 - 18/4	80.1	74.7	63.6	92.4	92.9	92.3	561	55
4ESCMS15064	E21	15	208-230/3	1750	J	40 / 38	262 / 302	125498	8/4 - 18/4	78.5	72.5	60.6	93.1	93.2	92.4	561	55
4ESCMS15064	E21	15	460/3	1750	J	19.2	151	125497	12/4 - 18/4	78.5	72.5	60.6	93.1	93.2	92.4	561	55
4ESCMS15064	E21	15	575/3	1750	J	8.2	120	125497	12/4 - 18/4	79.4	73.4	62	92.4	93.3	92.7	561	55

IMPORTANT !

Moisture and Temperature sensor leads are integral to power cord.

▲ Cord Suffix: XC - 30 Feet, XF - 50 Feet, XJ - 75 Feet, or XL - 100 Feet.

▲ Cord sold separately.

* Tri-voltage pumps (i.e. 208-230/460V) are operable at 208V, but will not meet IE3 efficiency. A true 208V, single voltage pump must be ordered to obtain an IE3 rating.

NOTE: Envie3 Dry Run Submersible motors tested per CSA C390/IEEE-112. Efficiency levels are comparable to that of motors meeting the IEC60034-30 standard.

KEY

LRA: Locked Rotor Amps FLA: Full Load Amps

Pump rated for operation at ± 10% voltage at motor.

BARNES SITHE CHOPPER PUMP INDUSTRY'S BEST SOLUTION TO PUMP CLOGGING

SITHE chopper pumps are Barnes solution to highly demanding waste water applications in the municipal collection systems and treatment market.

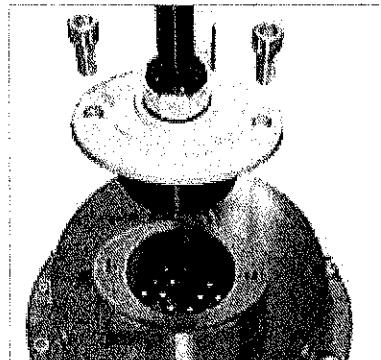
SITHE chopper pumps are available from 3HP to 60HP, in 3", 4" and 6" discharge sizes. All pumps, including optional explosion proof models are available with industry best lead time of 3 weeks, and come with a 60 month standard warranty.

SITHE chopper pumps provide immense value to customers including:

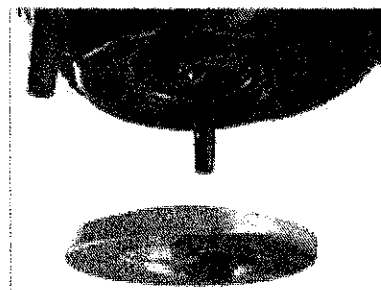
- Superior non clogging & solids size reduction • High reliability
- Ease of servicing • Ability to upgrade • Low life cycle cost



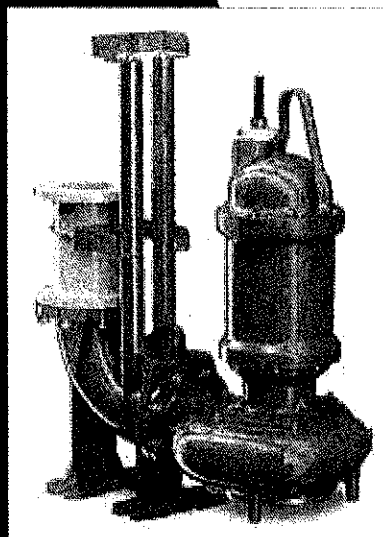
Unique, patented open center cutter mechanism; Heat treated 440C stainless cutter blades that can last 7 to 8 years; Can chop solids including mop heads, pantyhose, wood, bottles, metal cans and other solids bigger than 3".



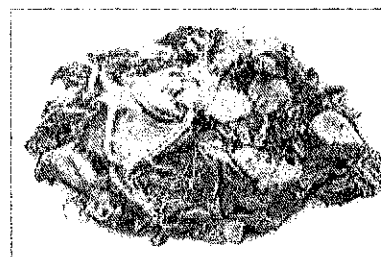
Plug-n-Play quick disconnect cord drastically reduces maintenance time and cost



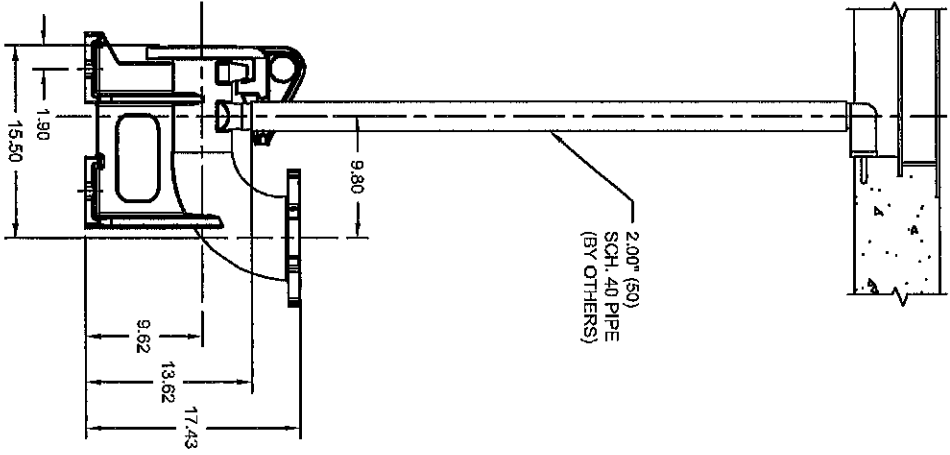
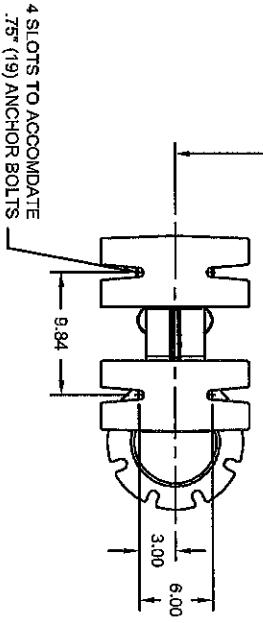
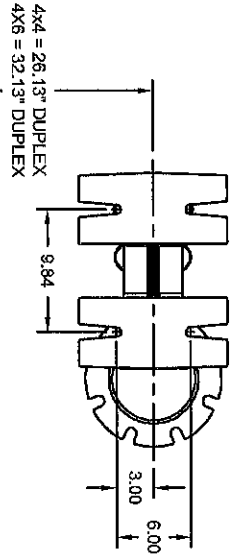
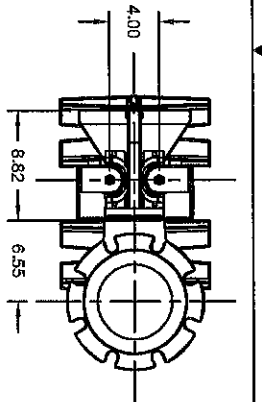
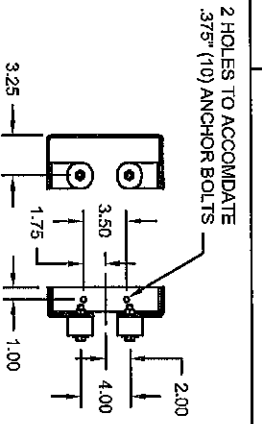
Field replaceable blades reduce maintenance time



Vast array of options, accessories and kits available including four cord sizes, seal materials, Break away fittings, competitive adaptors, panels and level controls



Solids size reduction to 1" to 3" prevent clogging of downstream components; solids get trapped in headwork screens.



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SLICING ACTION IN CHOPPER PUMPS

Why Slicing is Better Than Harsh Chopping

Chopper Pumps & Non Clogging

Chopper pumps are used extensively in heavy duty solids-laden water applications including municipal waste water, industrial sewage, food processing, agricultural byproduct, and raw untreated drainage run-off from metal, paper and chemical industries.

Chopper pumps increasing popularity can be attributed to the combination of increasing solids loading in water streams and decreasing water drain-off from residential, commercial and industrial sources. Chopper pumps solve the biggest challenge that municipalities and private waste water treatment operators face – Pump clogging.

Different Chopping Technologies

Several chopper solutions are available in the market. All solutions include two sets of blades or cutters moving against one another, and producing a cutting action on the solids to reduce their size.

The relative movement between the blades or cutters is achieved by usually securing one cutting surface (blade) to the pump

casing, and rotating the other cutting surface (blade) by either affixing it to the impeller or by making use of a hardened impeller. Number of cuts per minutes depend on each solution's design and RPM.

The design, position and relative movement of the cutting surfaces determine the effectiveness of chopping and the ability to reduce solid size. In almost all designs, the rotating cutting surface 'strikes' against the stationary cutting surface to produce chopping action. There are very few, if not only one, chopper pumps that are designed to 'slice' solids instead of chopping them.

The Barnes Sitcher chopper pump's patented design employs a stationary striker plate and a rotating slicing blade that tears and slices solids. Slicing and chopping actions are analogous to cutting with scissors and a knife.

Science Behind Chopping

The act of chopping consists of two surfaces hitting one another till one survives and the other doesn't. This creates a 'compressive explosive force'. At high speeds, such as a pump, the solid being chopped is typically pinched until it can com-

Figure 1

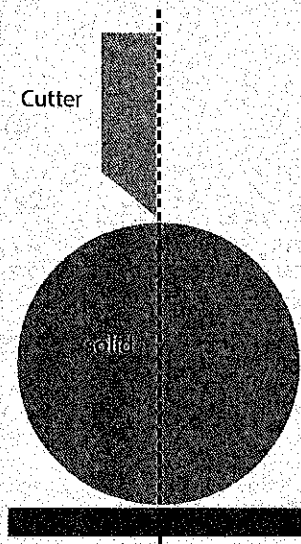
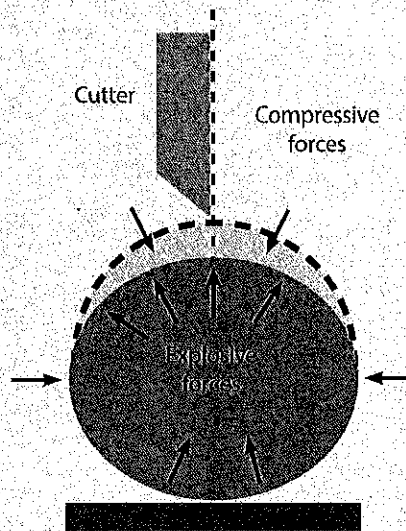


Figure 1: Chopping Action
In chopping action, the solid is hit by a cutter. The solid is pinched until it breaks from inside out.

Figure 2: Forces In Chopping Action
In chopping action, the solid is pinched by the cutter. This results in compressive forces on the solid. Equivalent explosive forces are generated

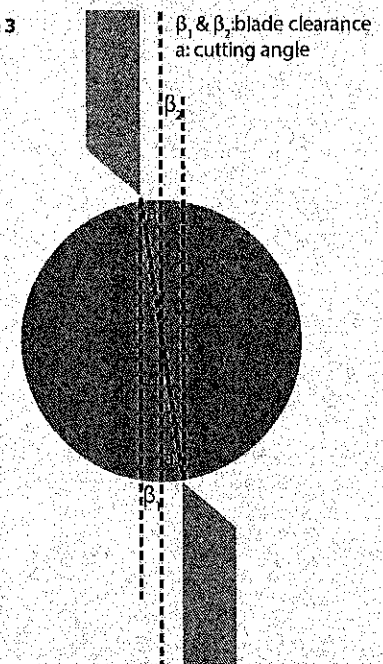
Figure 2



within the solid to counter the compressive forces. When explosive forces become too high, the solid disintegrates into smaller pieces, sometimes even too small to clog downstream pumps and components.

Figure 3: Forces In Slicing Action
In slicing action, the cutter blades slide through

Figure 3



the solid. The solid is reduced in size from outside in. Cutting force is distributed along the cutter surface at different times. As a result, slicing is less energy consuming and generates less stress on internal pump components. Solid size reduction is more controlled and uniform which provides superior non clogging capability, not just in the pump but in the entire system.

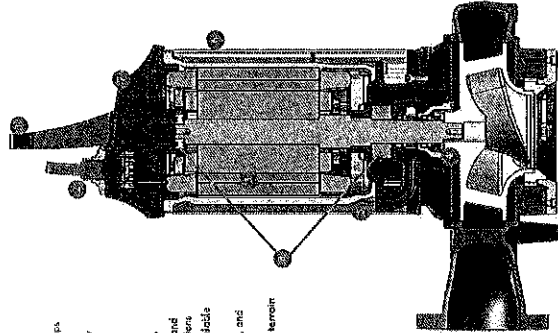
VERSATILITY MEETS HIGH PERFORMANCE

Envie's high efficiency chopper motors are engineered without application limitations. Designed to run both submerged and dry run, envie³ motors are available with Barnes' chopper and non-clog pumps.

FEATURES AND BENEFITS

- Patent pending, closed-loop glycol cooling system that keeps motor safe-free, even in the most demanding applications.
- Premium efficient, IE3 motor that delivers significant energy savings versus traditional motor offerings.
- Available for both non-clog and chopper pumps.
- One of the market's most flexible solutions.
- Made in the USA with best in class manufacturing lead times.
- Available in both vertical and horizontal configurations, and offered with a variety of use-friendly mounting, to drive various mechanical seals and bearing components.
- Rugged and modern design that looks great on the job, and will withstand the test of time.
- Suitable for shallow wells, high water tables, and rocky terrain.

1. Large Stainless Steel Handle
2. Plug & Play Quick Connect Cord
3. IE3 Premium Efficient Motor / VFD Ready
4. Tapered Keyed Shaft
5. Closed Loop Cooling System
6. Stainless Steel Outer Shell / Stainless Steel Hardware
7. Rasalcoat® B4 Powder Coat Epoxy
8. High Capacity Sealed Bearings



ENVIE³ CHOPPER PHASE 1 RANGE

	3/4"	1"	1 1/2"	2"
Shaft Dia	3/4"	1"	1 1/2"	2"
Shaft Dia	3/4"	1"	1 1/2"	2"
Shaft Dia	3/4"	1"	1 1/2"	2"
Shaft Dia	3/4"	1"	1 1/2"	2"

ENVIE³ NON-CLOG PHASE 1 RANGE

	3/4"	1"	1 1/2"	2"
Shaft Dia	3/4"	1"	1 1/2"	2"
Shaft Dia	3/4"	1"	1 1/2"	2"
Shaft Dia	3/4"	1"	1 1/2"	2"
Shaft Dia	3/4"	1"	1 1/2"	2"

*NOTE: Please see the motor offer for details of Phase 1. Addressed offering coming soon.

envie³



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