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**ODELL'S PUMP SERVICE**

1650 Bell Ave. #120  
Sacramento, CA 95838  
Phone 916-925-8508  
Fax 916-925-3914  
CONTRACTOR LICENSE #883605 C-61

DATE: 3 - 3 - 17

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To: NATOMAS BASIN CONSERVANCY

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INCLUDED ARE FOUR LOCATIONS OUT OF NINE PUMPS TESTED THAT THAT COULD  
REBOWLED FOR BETTER PERFORMANCE.

**NOT INCLUDED IN THE QUOTES ARE PARTS FOUND IN  
NEED OF REPLACING AFTER INSPECTION OF PULLED  
PUMPS.**

PERRY ODELL

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**ODELL'S PUMP SERVICE**

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CONTRACTOR LICENSE #883605

Date: 3-3-17

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To: JOHN ROBERTS 224-2000

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Company: NATOMAS BASIN CONSERVANCEY FAX: 649-3322

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From: Perry Odell

PROJECT: **FRAZIER NORTH** 50 HP FLOWAY  
TURBINE PUMP DELIVERS 946 GALLONS PER  
MINUTE @ 109', IF NEW BOWLS WERE  
INSTALLED NEW CAPACITY OF 1,100 G.P.M. @  
124'.

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**ODELL'S QUOTE # 3317**

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ODELL'S PUMP SERVICE WOULD LIKE TO OFFER THE FOLLOWING EQUIPMENT.

QTY	DESCRIPTION
1	NEW BOWL UNIT HROFLO 2 STAGE 12KC

TOTAL PARTS	\$ 4,806.00
TAX	372.47
LABOR	4,650.00
TOTAL ESTIMATE	<u>\$ 9,828.47</u>

DELIVERY: 3 WEEKS

**NOT INCLUDED:**

1. ANY ITEM NOT SPECIFICALLY MENTIONED IS NOT INCLUDED, NOR WAS IT INTENDED TO BE INCLUDED.

**THIS PROPOSAL IS VALID FOR 30 DAYS**

I HOPE THIS QUOTATION MEETS WITH YOUR APPROVAL AND SHOULD YOU DESIRE ANY FURTHER ASSISTANCE PLEASE FEEL FREE TO CONTACT ME.

THANK YOU,

*Perry Odell*

Company:  
Name:  
Date: 2/2/2017

*Frazier N.*



**Pump:**

Size: 12KC (2 stage)  
Type: Vertical  
Synch Speed: 1800 rpm  
Curve: 110711  
Specific Speeds:  
Dimensions:  
Vertical Turbine:  
Speed: 1770 rpm  
Dia: 9.08 in  
Impeller: 12KH SS ENCL.  
Ns: ---  
Nss: ---  
Suction: 8 in  
Discharge: 8 in  
Bowl Size: 11.8 in  
Max Lateral: 0.625 in  
Thrust K Factor: 7 lbf/ft

**Search Criteria:**

Flow: 1100 US gpm Head: 124 ft

**Fluid:**

Water  
Density: 62.32 lb/ft<sup>3</sup>  
Viscosity: 0.9946 cP  
NPSHa: ---  
Temperature: 68 °F  
Vapor Pressure: 0.3391 psi a  
Atm Pressure: 14.7 psi a

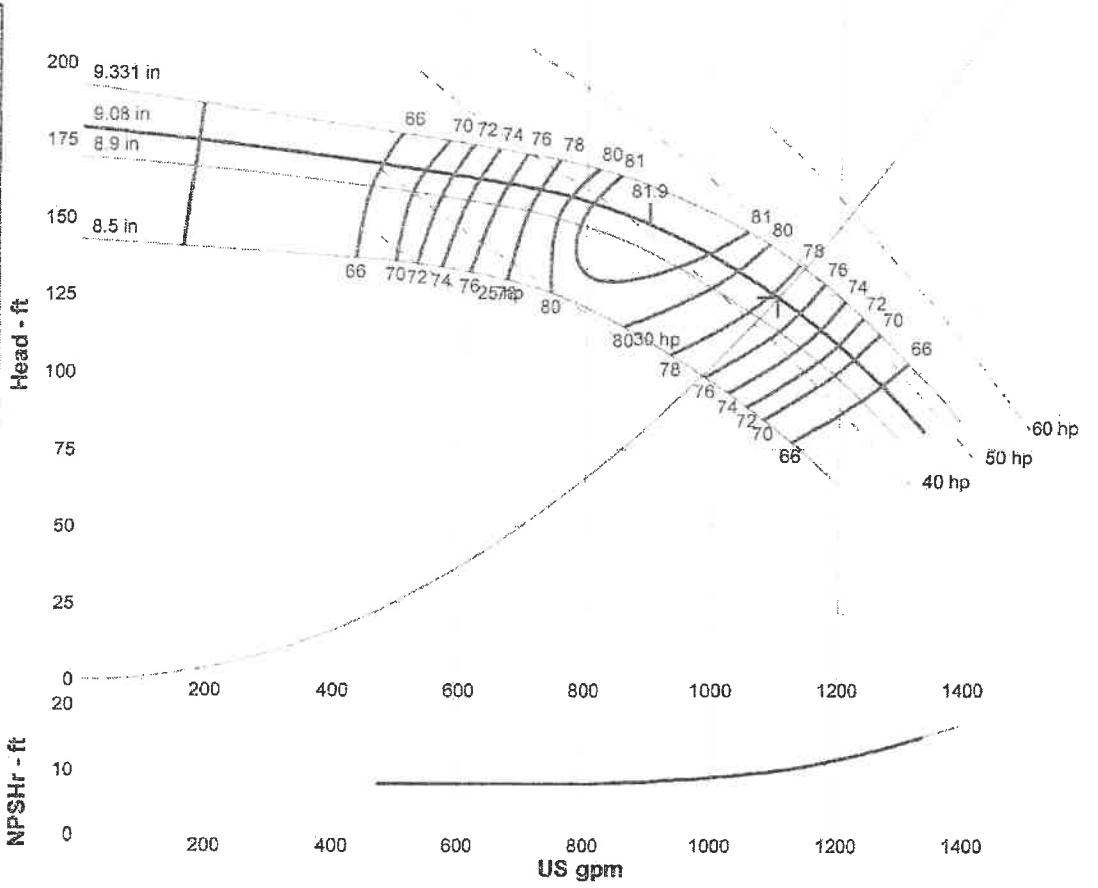
**Motor:**

Standard: NEMA  
Enclosure: WP1  
Sizing Criteria: Max Power on Design Curve  
Size: 50 hp  
Speed: 1800 rpm  
Frame: 328T

**Pump Limits:**

Temperature: 140 °F  
Pressure: 400 psi g  
Sphere Size: 0.875 in  
Power: 385 hp  
Eye Area: ---

Duty Point	
Flow:	1100 US gpm
Head:	124 ft
Eff:	77.6%
Power:	44.4 hp
NPSHr:	9.89 ft
--- Design Curve ---	
Shutoff Head:	179 ft
Shutoff dP:	77.5 psi
Min Flow:	180 US gpm
BEP:	81.9% @ 899 US gpm
NCL Power:	46.7 hp @ 1337 US gpm
--- Max Curve ---	
Max Power:	52 hp @ 1393 US gpm



**Performance Evaluation:**

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
1320	1770	84.4	60.2	46.6	14.6
1100	1770	124	77.6	44.4	9.88
880	1770	149	81.7	40.6	8.22
660	1770	162	75.4	35.7	7.88
440	1770	168	64.1	29.3	7.88

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CONTRACTOR LICENSE #883605

Date: 3 - 2 - 17

---

To: JOHN ROBERTS 224-2000

---

Company: NATOMAS BASIN CONERVANCY

FAX: 649-3322

---

From: Perry Odell

**PROJECT: NATOMAS FARMS 60 HP J-LINE  
TURBINE PUMP DELIVERS 690 GALLONS PER  
MINUTE @130', WITH NEW BOWLS 975 G.P.M. @  
175'. EXISTING PUMP HAS 142' OF PIPE, NEW  
BOWLS WOULD DRAW THE WATER LEVEL TO  
175' SO MORE PIPE MUST BE ADDED.**

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**ODELL'S QUOTE # 3217**

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ODELL'S PUMP SERVICE WOULD LIKE TO OFFER THE FOLLOWING EQUIPMENT.

QTY	DESCRIPTION
1	NEW BOWL HYDROFLO 3 STAGE 11MH
60'	10" COLUMN, 2" OIL TUBE, 1 3/16" SHAFTING

TOTAL PARTS	\$ 8,538.00
TAX	704.39
LABOR	5,550.00
TOTAL ESTIMATE	<u>\$14,792.39</u>

DELIVERY: 3 WEEKS

**NOT INCLUDED:**

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**THIS PROPOSAL IS VALID FOR 30 DAYS**

I HOPE THIS QUOTATION MEETS WITH YOUR APPROVAL AND SHOULD YOU DESIRE ANY FURTHER ASSISTANCE PLEASE FEEL FREE TO CONTACT ME.

THANK YOU,

*Perry Odell*

Company:  
Name:  
Date: 2/9/2017

*NATOMAS FARMS*  
*Del Paso Rd*



**Pump:**  
Size: 11MH (3 stage)  
Type: Vertical  
Synch Speed: 1800 rpm  
Curve: 11MH  
Specific Speeds:  
Dimensions:  
Vertical Turbine:  
Speed: 1770 rpm  
Dia: 8 in  
Impeller: 11MH SS ENCL  
Ns: 2130  
Nss: ---  
Suction: 8 in  
Discharge: 8 in  
Bowl Size: 11 in  
Max Lateral: 0.75 in  
Thrust K Factor: 7.8 lbf/ft

**Search Criteria:**  
Flow: 975 US gpm      Head: 175 ft  
Secondary Operating Point: 1000 US gpm, 200 ft

**Fluid:**  
Water  
Density: 62.32 lb/ft<sup>3</sup>  
Viscosity: 0.9946 cP  
NPSHa: ---  
Temperature: 68 °F  
Vapor Pressure: 0.3391 psi a  
Atm Pressure: 14.7 psi a

**Motor:**  
Standard: NEMA  
Enclosure: WP1  
Sizing Criteria: Max Power on Design Curve  
Size: 60 hp  
Speed: 1800 rpm  
Frame: 364T

**Pump Limits:**  
Temperature: 120 °F  
Pressure: 400 psi g  
Sphere Size: 0.68 in  
Power: ---  
Eye Area: ---

**Pump Selection Warnings:**  
One or more operating points are not within the selection window.

**Duty Point**

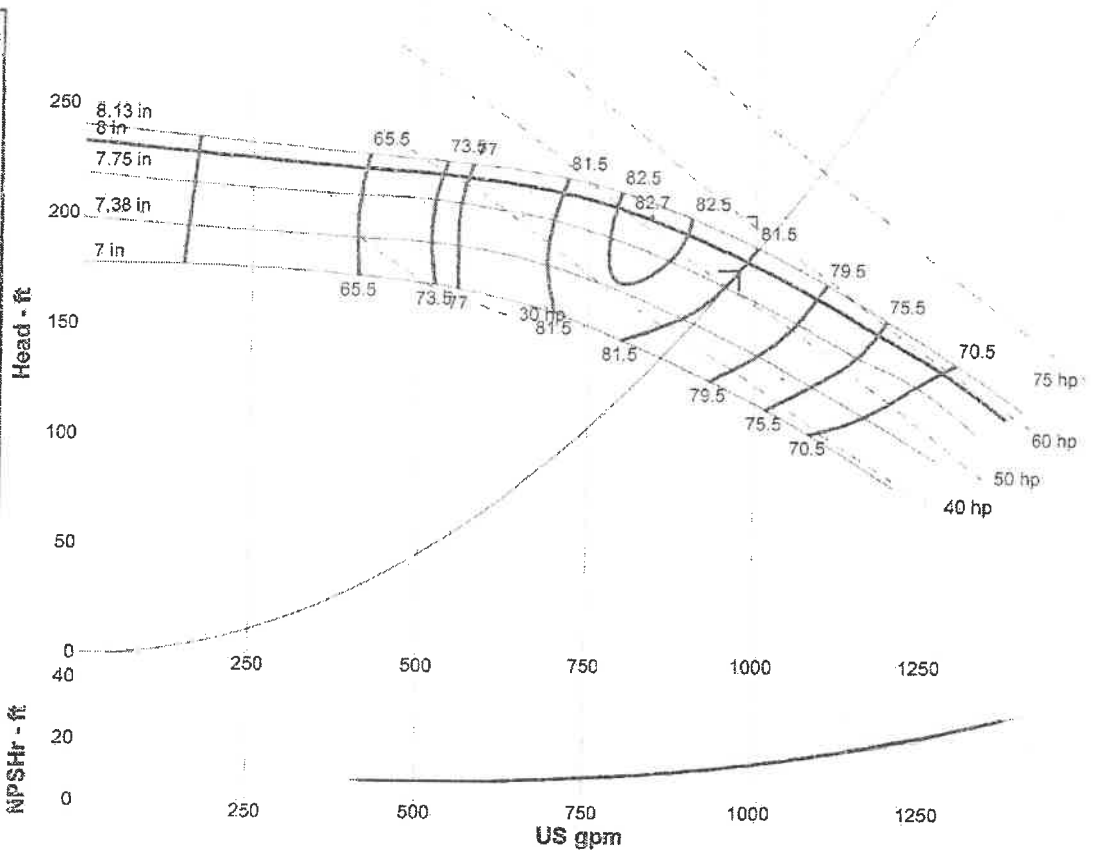
Flow: 987 US gpm  
Head: 179 ft  
Eff: 81.5%  
Power: 54.8 hp  
NPSHr: 12.7 ft

**Design Curve**

Shutoff Head: 233 ft  
Shutoff dP: 101 psi  
Min Flow: 169 US gpm  
BEP: 82.7% @ 845 US gpm  
NOL Power: 59.4 hp @ 1279 US gpm

**Max Curve**

Max Power: 61.9 hp @ 1300 US gpm



**Performance Evaluation**

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
1170	1770	149	76	57.8	18.6
975	1770	181	81.6	54.5	12.4
780	1770	205	82.4	49	8.74
585	1770	216	77.5	41.1	7.11
390	1770	222	63.5	34.6	7

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Date: 3 - 2 - 17

---

To: JOHN ROBERTS 224-2000

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Company: NATOMAS BASIN CONSERVANCY      FAX: 649-3322

---

From: Perry Odell

PROJECT: **KISMIT: 7.5 HP LOW LIFT PUMP**  
ONLY 1,263 GALON PER MINUTE @ 14' LIFT,  
REPLACING PUMP BOWL UNIT WOULD  
INCREASE VOLUME TO 1,600 G.P.M..

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ODELL'S QUOTE # 3217

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ODELL'S PUMP SERVICE WOULD LIKE TO OFFER THE FOLLOWING EQUIPMENT.

QTY	DESCRIPTION
1	FLOW MASTER #8MH-7.5 BOWL UNIT INSTALLED

NOTE: MAY BE ADDITIONAL PARTS NEEDED AFTER INSPECTION

TOTAL PARTS	\$3,925.00
TAX	333.63
LABOR	2,100.00
TOTAL ESTIMATE	<u>\$6,358.63</u>

DELIVERY: 2 WEEKS

**NOT INCLUDED:**

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**THIS PROPOSAL IS VALID FOR 30 DAYS**

I HOPE THIS QUOTATION MEETS WITH YOUR APPROVAL AND SHOULD YOU DESIRE ANY FURTHER ASSISTANCE PLEASE FEEL FREE TO CONTACT ME.

THANK YOU,

*Perry Odell*

KISMIT

**PROPELLER PUMPS**  
**SELECTION CHARTS**

Showing recommended motor size, operating speed and capacity in Gallons per Minute at total dynamic head in feet.

**SINGLE STAGE PERFORMANCE**

PUMP SIZE	R.P.M.	MOTOR H.P.	PROP. TYPE	30	28	26	24	22	20	18	16	14	12	11	10	9	8	7	6	5	4	3	2	1
6	1760	3	8ML-3												830	950	1080	1170	1250	1330	1400	1460	1510	
8	1760	5	8MM-5												1330	1370	1420	1460	1500	1560	1600			
8	1760	5	8MH-5												1230	1280	1310	1350	1380					
10	1760	3	8ML-3		770										870	1000	1130	1230	1320	1400	1480	1560	1600	
10	1760	3	8ML-5												1400	1618	1800	1970	2105	2240	2300	2340	2360	
10	1760	5	8ML-7 1/2												2070	2200	2300	2430	2500	2600	2690	2760	2780	
10	1760	5	8MM-5												1400	1450	1500	1545	1590	1645	1690			
10	1760	5	8MM-7 1/2												2090	2170	2250	2320	2390	2440				
10	1760	7 1/2	8MH-7 1/2												1070	1180	1280	1370	1420	1470				
10	1760	10	8MH-10												1200	1470	1600	1760	1840	1900	2030	2070		
12	1760	10	10ML-10												1580	1840	2060	2250	2430	2570	2650	2780	2880	
12	1760	15	10ML-15																					
12	1760	15	10MM-10												1610	1750	1860	1960	2060	2160	2260	2360	2460	
12	1760	15	10MM-15												2410	2620	2790	2940	3090	3160	3240	3300	3360	
12	1760	20	10MM-20												3240	3500	3720	3930	4140	4340	4400	4460	4520	
12	1760	15	10MH-15												2100	2250	2380	2470	2560	2650	2740	2830	2920	
12	1760	20	10MH-20		1590	1700	1860	1990	2120	2280	2380	2470	2560	2650	2690	2730	2770	2810	2850	2890	2930	2970	3010	
12	1760	25	10MH-25		2100	2250	2450	2640	2800	3000	3150	3280	3400	3500	3540	3580	3620	3660	3700	3740	3780	3820	3860	
12	1760	30	10MH-30		2660	2980	3180	3340	3510	3670	3800	3900	3980	4060	4110	4160	4210	4260	4310	4360	4410	4460	4510	
12	1760	30	10MH-30		2160	3000	3320	3600	4080	4320	4500	4700	4840	4950	5000	5050	5100	5150	5200	5250	5300	5350	5400	
14	1160	15	12MM-15												4000	4200	4360	4500	4600	4700	4800	4900	4950	
14	1160	20	12MM-20												4650	5000	5300	5500	5650	5750	5850	5950	6050	
16	1160	30	14MM-30												6250	6750	7150	7350	7500	7700	7850			
16	1160	30	14MH-30												7960	8550	9000	9250	9450	9650	9750			
18	1160	40	14MM-40												5300	5900	6400	6900	7200	7450	7650			
18	1160	40	14MH-40												8500	9450	10200	10900	11500	11750				
20	870	40	18MM-40												10700	11700	12600	13000	13200					
20	870	60	18MH-60												10700	11700	12600	13000	13200					
24	870	50	18MM-50												10700	11700	12600	13000	13200					
24	870	75	18MH-75												10700	11700	12600	13000	13200					

**TWO STAGE PERFORMANCE**

PUMP SIZE	R.P.M.	MOTOR H.P.	PROP. TYPE	50	48	46	44	42	40	38	36	34	32	30	28	26	24	22	20	18	16	14	12	
10	1760	10	8MM-5												1100	1190	1270	1340	1400	1450	1500	1545	1590	
10	1760	10	8MH-5												1070	1100	1180	1230	1280	1320	1370	1420	1460	
10	1760	15	8MM-7 1/2												1650	1790	1900	2000	2090	2170	2250	2320	2390	
10	1760	15	8MH-7 1/2												1600	1690	1760	1840	1900	1970	2050	2120	2190	
10	1760	20	8MH-10												2060	2150	2250	2340	2430	2510	2590	2670	2750	
12	1760	20	10MM-10												1940	2010	2090	2170	2250	2320	2400	2480	2560	
12	1760	30	10MM-15												2940	3000	3090	3160	3240	3300	3380	3460	3540	
12	1760	40	10MM-20												3930	4040	4140	4240	4340	4400	4480	4560	4640	
12	1760	30	10MH-15												2870	2940	3030	3110	3190	3260	3340	3420	3500	
12	1760	40	10MH-20												3830	3930	4040	4140	4240	4340	4400	4480	4560	
12	1760	40	10MH-20		1700	1930	1990	2060	2120	2180	2240	2300	2360	2430	2470	2520	2570	2620	2670	2720	2770	2820	2870	
12	1760	40	10MH-20		2050	2450	2570	2640	2730	2800	2870	2940	3010	3080	3150	3220	3290	3360	3430	3500	3570	3640	3710	
12	1760	50	10MH-25		2960	3180	3270	3340	3450	3510	3580	3650	3720	3790	3860	3930	3990	4060	4130	4200	4270	4340	4410	
12	1760	60	10MH-30		3510	3630	3730	3840	3950	4060	4170	4280	4390	4500	4610	4720	4830	4940	5050	5160	5270	5380	5490	
16	1160	60	14MM-30												6250	6750	7150	7350	7500	7700	7850			

NOTE: 1-total dynamic head equals water to water head plus friction plus velocity head in feet. Velocity head in feet equals V times V divided by 64.4 where V is the velocity in ft./sec. of the water in the pipe. The velocity head usually is equal to approximately one foot.

2-For information covering other applications, refer to factory

DISTRIBUTOR

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CONTRACTOR LICENSE #883605

Date: 3 - 3 - 17

---

To: JOHN ROBERTS 224-2000

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Company: NATOMAS BASIN CONSERVANCY FAX: 649-3322

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From: Perry Odell

PROJECT: **LUCICH** 75 HP GOULDS TURBINE  
PUMP DELIVERS 2,072 GALLONS PER MINUTE  
@ 81', NEW BOWLS WOULD DELIVER 2,400  
G.P.M. @ 91'.

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ODELL'S QUOTE # 3317

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ODELL'S PUMP SERVICE WOULD LIKE TO OFFER THE FOLLOWING EQUIPMENT.

QTY	DESCRIPTION
1	NEW BOWL HYDROFLO 2 STAGE #12HHC

TOTAL PARTS	\$ 4,910.00
TAX	380.53
LABOR	4,700.00
TOTAL ESTIMATE	<u>\$ 9,990.53</u>

DELIVERY: 2 WEEKS

**NOT INCLUDED:**

1. ANY ITEM NOT SPECIFICALLY MENTIONED IS NOT INCLUDED, NOR WAS IT INTENDED TO BE INCLUDED.

**THIS PROPOSAL IS VALID FOR 30 DAYS**

I HOPE THIS QUOTATION MEETS WITH YOUR APPROVAL AND SHOULD YOU DESIRE ANY FURTHER ASSISTANCE PLEASE FEEL FREE TO CONTACT ME.

THANK YOU,

*Perry Odell*



Company:  
Name:  
Date: 2/2/2017

LUCICH

**Pump:**  
Size: 12HHC (2 stage)  
Type: Vertical  
Synch Speed: 1800 rpm  
Curves: 010311  
Specific Speeds:  
Dimensions:  
Vertical Turbine:  
Speed: 1770 rpm  
Dia: 9.88 in  
Impeller: 12HHC SS ENCL.  
Ns: ---  
Nss: ---  
Suction: 10 in  
Discharge: 10 in  
Bowl Size: 11.8 in  
Max Lateral: 0.75 in  
Thrust K Factor: 16.2 lbf/ft

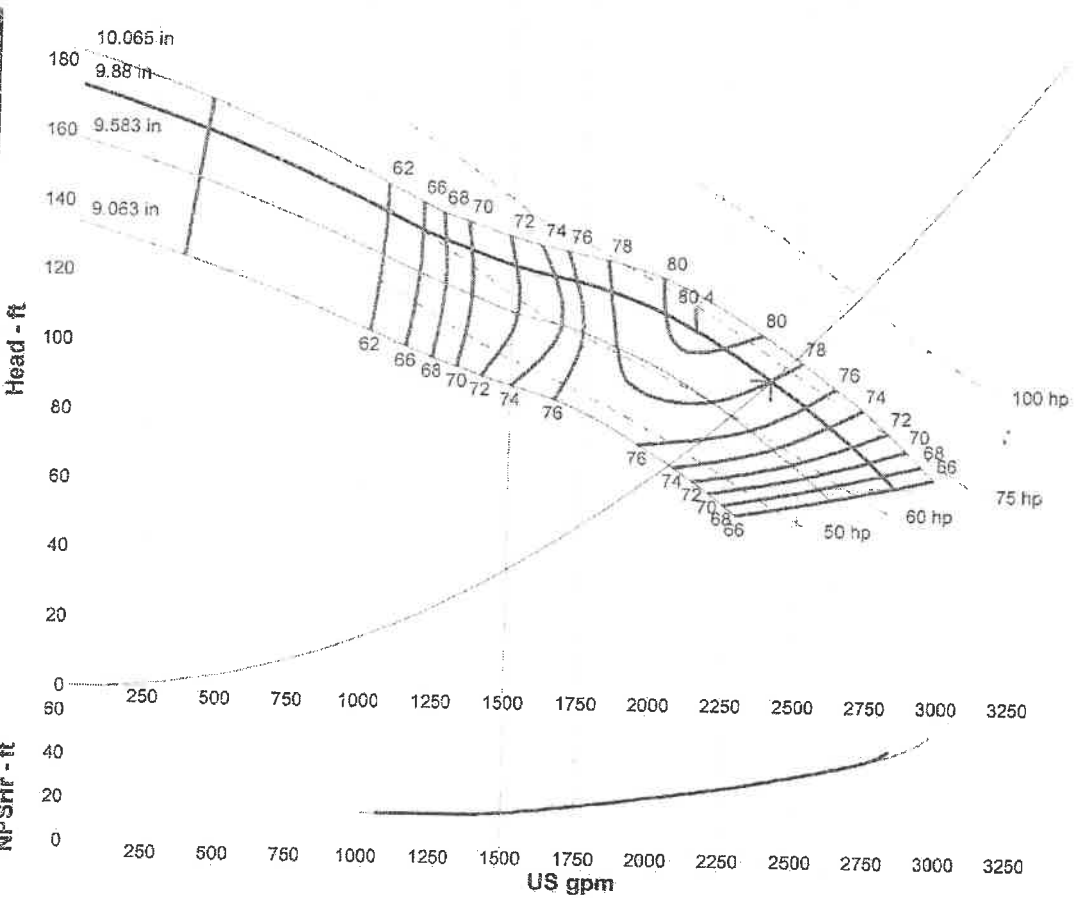
**Search Criteria:**  
Flow: 2400 US gpm  
Head: 91 ft

**Fluid:**  
Water  
Density: 62.32 lb/ft<sup>3</sup>  
Viscosity: 0.9946 cP  
NPSHa: ---  
Temperature: 68 °F  
Vapor Pressure: 0.3391 psi a  
Atm Pressure: 14.7 psi a

**Motor:**  
Standard: NEMA  
Enclosure: WP1  
Sizing Criteria: Max Power on Design Curve  
Size: 75 hp  
Speed: 1800 rpm  
Frame: 365T

**Pump Limits:**  
Temperature: 140 °F  
Pressure: 300 psi g  
Sphere Size: 1.38 in  
Power: 300 hp  
Eye Area: 29.7 in<sup>2</sup>

Duty Point	
Flow:	2400 US gpm
Head:	91 ft
Eff:	78%
Power:	70.7 hp
NPSHr:	31.6 ft
Design Curve	
Shutoff Head:	173 ft
Shutoff dP:	75 psi
Min Flow:	427 US gpm
BEP:	80.4% @ 2134 US gpm
NOL Power:	70.7 hp @ 2398 US gpm
Max Curve	
Max Power:	78 hp @ 2508 US gpm



**Performance Evaluation:**

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
2880	1770	---	---	---	---
2400	1770	91.1	78	70.7	31.6
1920	1770	113	78.9	69.6	22.4
1440	1770	125	71.1	63.9	15.6
960	1770	142	58.7	59.3	15