WHISPERING CANYONS P.A.D.
Phases 3 & 4

SEWER ANALYSIS

PREPARED FOR:
Old Capital Investments, L.L.C.
7321 N 16th Street
Phoenix, AZ 85020
(602) 889-5844

DESIGN: Scott A. Lyon, P.E.
DATE: April 8th , 2005

LYON ENGINEERING
Civil Engineers • Land Surveyors

121 W. Navajo Drive
Suite C
Prescott, AZ 86301
928-776-1750

TABLE OF CONTENTS

WHISPERING CANYONS Phase 3 & 4, SEWER REPORT

I. PROJECT DESCRIPTION

Whispering Canyons (WC) is a master planned community located approximately 9 miles north of Prescott, Arizona, covering portions of Sections 33 & 34 of Township 16 North, Range 3 West, of the Gila and Salt River Basin. Accessed by Williamson Valley Road at the Northeast corner of the project, WC is bordered by the Inscription Canyon community to the North, Talking Rock Community to the West, the Prescott National Forest to the Southwest, and several unsubdivided parcels to the Southeast and East. WC encompasses 894 acres of rolling terrain with elevations ranging from 4755 to 5300 feet above sea level. See Exhibit 1 for vicinity map.
Phase 3 is a continuation of Whispering Canyons Drive to the West and includes 41 residential lots. Phase 4, located along the North boundary of Whispering Canyons access from Electra and includes 42 residential lots.

II. LAND USES

Whispering Canyons will include 400 lots ranging in size from 0.5 acres to 5.2 acres. An additional lot will be provided for a community center. See Exhibit **2**.

III. OVERVIEW

The Inscription Canyon Sanitary Sewer District (ICSSD) will serve Whispering Canyons. The ICSSD currently contains an on-site sewage treatment plant with capacity above and beyond the additional capacity required for WC. See Exhibit **2** for the location of the treatment plant.

Whispering Canyons Phases 3 and 4 will include a total of 83 residential lots (41 and 42 respectively). These phases will be an extension of the sewer main that was installed during construction of Phases 1 & 2. A minor road realignment in Phases 3 & 4 is now depicted in Exhibit 2. All lots within WC will be serviced by a low pressure sewer (LPS) system using Barnes pumps and design criteria, See Appendix A1, and Exhibit **2**

VI. CONCLUSION

Off site improvements are currently completed and in operation which service Whispering Canyons. These improvements were design for a total of 400 residential lots, of which after Phase 4 there will be a total of 175. With the revised layout for both phases an updated master plan was required. To maintain an accurate analysis of the system these changes were modeled using the manufactures design guidelines. As future phases are developed updates will be provided. Any changes to this report will be submitted in addendum form to the Yavapai County Environmental Services Department

SECTION 1 – LOW PRESSURE SEWER (LPS) DESIGN

DESIGN CRITERIA:

The ADEQ Engineering Bulletin No. 11 was used for all design criteria as follows:

Capita per Dwelling Unit: 2.5 persons (single family home)

Flow per Capita: 100 gpd (gallons per day)

Peaking Factor: Peaking factors were not used in the design of the low pressure sewer since the Barnes LPS software adjusts for the maximum number of pumps that will be running at any point in time based on the number of homes on the system.

Number of Lots: *401

(* - Note: WC contains 400 single-family lots and 1 tract for a future community center. For ease of calculation the community center was calculated as a single family home. This figure is conservative since the community center will have less than the Average Daily Flow of a home.)

APPENDIX
Sewer Analysis

A1) Low Pressure Sewer Analysis

A1) Low Pressure Sewer Analysis

BARNES PRESSURE SYSTEMS

Barnes Pumps Inc.
420 Third Street
Piqua, Ohio 45356

www.Barnes-PS.com

Project Location: Prescott, AZ

Project Name: Whispering Canyons

Assumptions: AN + B = Q
Gal./EDU= 250
A= 0.625 Constant
N= EDU's Number of EDU's on a given pipe segment
B= 20 GPM for one pump
Pipe Type: PVC SCH 40

Hazen-Williams "C" Factor: 150

PIPE SEGMENT NUMBER	FLOWS INTO SEGMENT	NUMBER OF (EDU's)	ACCUM EDU's CONNECTED	LOW DATUM in Segment	CONTROL DATUM of Segment	PIPE LENGTH (FEET)	MAX FLOW (GAL/MIN)	PIPE SIZE (INCH)	PIPE ID (INCHES)	MAX VELOCITY (FT/SEC)	FRICTION FACTOR (FT/C.FT)	FR LOSS THIS PIPE (FEET)	ACCUM FL (FEET)	MAX HEAD REQUIRED (FEET)	PIPE SEGMENT NUMBER	SEGMENT RETENTION TIME	HOURS TO DISCHARGE
1	4	1	1	4992	5010	238	20.63	2.00	2.05	2.01	0.82	1.94	46.06	64.06	1	3.91	6.50
2	3	3	3	4930	5010	607	21.88	2.00	2.05	2.13	0.91	5.52	54.80	134.80	2	3.33	7.25
3	4	3	6	4964	5010	487	23.75	2.00	2.05	2.31	1.06	5.16	49.28	95.28	3	1.33	3.92
4	12	0	7	5000	5010	532	24.38	2.00	2.05	2.37	1.11	5.92	44.12	54.12	4	1.25	2.59
5	6	3	3	4920	5010	367	21.88	2.00	2.05	2.13	0.91	3.34	52.96	142.96	5	2.01	5.36
6	12	5	8	4947	5010	980	25.00	2.00	2.05	2.43	1.17	11.42	49.62	112.62	6	2.01	3.35
7	8	3	3	4988	5010	129	21.88	2.00	2.05	2.13	0.91	1.17	43.76	65.76	7	0.71	2.84
8	11	2	5	4964	5010	172	23.13	2.00	2.05	2.25	1.01	1.74	42.59	88.59	8	0.57	2.14
9	10	3	3	4956	5010	73	21.88	2.00	2.05	2.13	0.91	0.66	46.66	100.66	9	0.40	2.88
10	11	5	8	4938	5010	441	25.00	2.00	2.05	2.43	1.17	5.14	45.99	117.99	10	0.91	2.48
11	12	0	13	5000	5010	183	28.13	2.00	2.05	2.74	1.45	2.65	40.85	50.85	11	0.23	1.57
12	16	0	28	5000	5010	813	37.50	2.00	2.05	3.65	2.47	20.08	38.20	48.20	12	0.48	1.34
13	14	3	3	4932	5010	168	21.88	2.00	2.05	2.13	0.91	1.53	30.16	108.16	13	0.92	3.33
14	15	6	9	4894	5010	757	25.63	2.00	2.05	2.49	1.22	9.24	28.63	144.63	14	1.38	2.41
15	16	1	10	4934	5010	100	26.25	2.00	2.05	2.56	1.28	1.28	19.39	95.39	15	0.16	1.03
16	25	0	38	5000	5010	922	43.75	2.50	2.44	2.99	1.39	12.82	18.12	28.12	16	0.57	0.86
17	18	3	3	4950	5010	209	21.88	2.00	2.05	2.13	0.91	1.90	18.80	78.80	17	1.15	3.14
18	21	2	5	4982	5010	384	23.13	2.00	2.05	2.25	1.01	3.87	16.90	44.90	18	1.26	2.00
19	20	3	3	5000	5010	114	21.88	2.00	2.05	2.13	0.91	1.04	16.58	26.58	19	0.62	2.01
20	21	3	6	4982	5010	238	23.75	2.00	2.05	2.31	1.06	2.52	15.54	43.54	20	0.65	1.39
21	25	6	17	4982	5010	455	30.63	2.00	2.05	2.98	1.70	7.72	13.02	41.02	21	0.44	0.73
22	23	3	3	4984	5010	137	21.88	2.00	2.05	2.13	0.91	1.25	19.94	45.94	22	0.75	2.62
23	24	6	9	5000	5010	605	25.63	2.00	2.05	2.49	1.22	7.38	18.69	28.69	23	1.10	1.87
24	25	5	14	4986	5010	398	28.75	2.00	2.05	2.80	1.51	6.01	11.31	35.31	24	0.47	0.76
25	0	0	69	5000	5010	560	63.13	3.00	3.04	2.79	0.95	5.30	5.30	15.30	25	0.29	0.29
26	27	3	3	5060	5102	98	21.88	2.00	2.05	2.13	0.91	0.89	78.69	120.69	26	0.54	4.14
27	28	6	9	5022	5102	397	25.63	2.00	2.05	2.49	1.22	4.84	77.80	157.80	27	0.72	3.60
28	29	9	18	5004	5102	673	31.25	2.00	2.05	3.04	1.76	11.86	72.95	170.95	28	0.61	2.87
29	30	1	19	5000	5102	116	31.88	2.00	2.05	3.10	1.83	2.12	61.10	163.10	29	0.10	2.26
30	45	0	19	5000	5102	235	31.88	2.00	2.05	3.10	1.83	4.30	58.98	160.98	30	0.20	2.16
31	32	3	3	4996	5008	113	21.88	2.00	2.05	2.13	0.91	1.03	30.29	42.29	31	0.62	2.35
32	35	4	7	4988	5008	331	24.38	2.00	2.05	2.37	1.11	3.68	29.26	49.26	32	0.78	1.73
33	34	3	3	4978	5008	177	21.88	2.00	2.05	2.13	0.91	1.61	28.10	58.10	33	0.97	2.31

				150											Pipe Type:		PVC SCH 40
PIPE SEGMENT NUMBER	FLOWS INTO SEGMENT	NUMBER OF (EDU's)	ACCUM EDU's CONNECTED	LOW DATUM in Segment	CONTROL DATUM of Segment	PIPE LENGTH (FEET)	MAX FLOW (GAL/MIN)	PIPE SIZE (INCH)	PIPE ID (INCHES)	MAX VELOCITY (FT/SEC)	FRICTION FACTOR (FT/C.FT)	FR LOSS THIS PIPE (FEET)	ACCUM FL (FEET)	MAX HEAD REQUIRED (FEET)	PIPE SEGMENT NUMBER	SEGMENT RETENTION TIME	HOURS TO DISCHARGE
34	35	1	4	4980	5008	95	22.50	2.00	2.05	2.19	0.96	0.91	26.49	54.49	34	0.39	1.34
35	36	7	18	4986	5008	661	31.25	2.00	2.05	3.04	1.76	11.65	25.58	47.58	35	0.60	0.95
36	39	1	19	5004	5008	42	31.88	2.00	2.05	3.10	1.83	0.77	13.93	17.93	36	0.04	0.35
37	38	3	3	5022	5022	116	21.88	2.00	2.05	2.13	0.91	1.06	16.38	16.38	37	0.64	1.65
38	39	2	5	5016	5016	214	23.13	2.00	2.05	2.25	1.01	2.16	15.32	15.32	38	0.70	1.02
39	0	4	28	5002	5008	533	37.50	2.00	2.05	3.65	2.47	13.16	13.16	19.16	39	0.31	0.31
40	46	0	116	5084	5102	776	92.50	3.00	3.04	4.08	1.92	14.90	47.17	65.17	40	0.24	1.83
41	45	4	4	5015	5102	354	22.50	2.00	2.05	2.19	0.96	3.39	58.07	145.07	41	1.45	3.41
42	44	6	9	5032	5102	421	25.63	2.00	2.05	2.49	1.22	5.14	55.10	125.10	42	0.77	2.96
43	42	3	3	5052	5102	112	21.88	2.00	2.05	2.13	0.91	1.02	56.12	106.12	43	0.61	3.58
44	40	1	10	5040	5102	219	26.25	2.00	2.05	2.56	1.28	2.79	49.96	111.96	44	0.36	2.19
45	40	0	116	5010	5102	391	92.50	3.00	3.04	4.08	1.92	7.51	54.68	146.68	45	0.12	1.96
46	56	0	130	5084	5102	480	101.25	4.00	4.00	2.59	0.60	2.89	32.27	50.27	46	0.23	1.59
47	48	3	3	5010	5102	210	21.88	2.00	2.05	2.13	0.91	1.91	44.36	136.36	47	1.15	4.12
48	51	1	4	5010	5102	144	22.50	2.00	2.05	2.19	0.96	1.38	42.45	134.45	48	0.59	2.97
49	50	3	3	5018	5102	128	21.88	2.00	2.05	2.13	0.91	1.16	43.65	127.65	49	0.70	3.68
50	51	1	4	5032	5102	147	22.50	2.00	2.05	2.19	0.96	1.41	42.48	112.48	50	0.60	2.98
51	52	1	9	5012	5102	215	25.63	2.00	2.05	2.49	1.22	2.62	41.07	131.07	51	0.39	2.37
52	55	1	10	5018	5102	154	26.25	2.00	2.05	2.56	1.28	1.96	38.45	122.45	52	0.25	1.98
53	54	3	3	5040	5102	123	21.88	2.00	2.05	2.13	0.91	1.12	38.86	100.86	53	0.67	2.94
54	55	1	4	5030	5102	131	22.50	2.00	2.05	2.19	0.96	1.26	37.74	109.74	54	0.54	2.27
55	56	4	18	5038	5102	403	31.25	2.00	2.05	3.04	1.76	7.10	36.48	100.48	55	0.37	1.73
56	61	0	148	5084	5102	480	112.50	4.00	4.00	2.88	0.73	3.51	29.38	47.38	56	0.20	1.36
57	58	3	3	5048	5102	146	21.88	2.00	2.05	2.13	0.91	1.33	34.42	88.42	57	0.80	3.07
58	60	3	6	5048	5102	197	23.75	2.00	2.05	2.31	1.06	2.09	33.10	87.10	58	0.54	2.27
59	60	3	3	5028	5102	246	21.88	2.00	2.05	2.13	0.91	2.24	33.25	107.25	59	1.35	3.08
60	61	2	11	5036	5102	385	26.88	2.00	2.05	2.62	1.33	5.13	31.01	97.01	60	0.58	1.73
61	73	0	159	5084	5102	521	119.38	4.00	4.00	3.05	0.82	4.25	25.88	43.88	61	0.21	1.16
62	63	3	3	4986	5102	100	21.88	2.00	2.05	2.13	0.91	0.91	83.76	199.76	62	0.55	5.01
63	64	6	9	4996	5102	992	25.63	2.00	2.05	2.49	1.22	12.10	82.85	188.85	63	1.81	4.46
64	69	5	14	5012	5102	500	28.75	2.00	2.05	2.80	1.51	7.55	70.75	160.75	64	0.59	2.65
65	66	3	3	5000	5102	238	21.88	2.00	2.05	2.13	0.91	2.17	88.91	190.91	65	1.30	5.08
66	67	6	9	5030	5102	450	25.63	2.00	2.05	2.49	1.22	5.49	86.74	158.74	66	0.82	3.78
67	68	9	18	5032	5102	842	31.25	2.00	2.05	3.04	1.76	14.84	81.25	151.25	67	0.77	2.96
68	69	3	21	5084	5102	164	33.13	2.00	2.05	3.22	1.96	3.22	66.42	84.42	68	0.13	2.19
69	72	1	36	5060	5102	187	42.50	2.00	2.05	4.14	3.11	5.82	63.20	105.20	69	0.09	2.06
70	71	3	3	5030	5102	127	21.88	2.00	2.05	2.13	0.91	1.16	60.14	132.14	70	0.70	3.20
71	72	2	5	5044	5102	160	23.13	2.00	2.05	2.25	1.01	1.61	58.99	116.99	71	0.53	2.50
72	73	6	47	5058	5102	2055	49.38	2.50	2.44	3.37	1.74	35.75	57.37	101.37	72	1.02	1.98
73	76	0	206	5084	5102	412	148.75	4.00	4.00	3.80	1.23	5.05	21.63	39.63	73	0.13	0.95
74	75	3	3	5066	5102	146	21.88	2.00	2.05	2.13	0.91	1.33	21.37	57.37	74	0.80	2.52
75	76	3	6	5062	5102	327	23.75	2.00	2.05	2.31	1.06	3.47	20.04	60.04	75	0.90	1.72
76	129	0	212	5084	5102	616	152.50	4.00	4.00	3.90	1.28	7.91	16.58	34.58	76	0.18	0.83

				150											Pipe Type:		PVC SCH 40
PIPE SEGMENT NUMBER	FLOWS INTO SEGMENT	NUMBER OF (EDU's)	ACCUM EDU's CONNECTED	LOW DATUM In Segment	CONTROL DATUM of Segment	PIPE LENGTH (FEET)	MAX FLOW (GAL/MIN)	PIPE SIZE (INCH)	PIPE ID (INCHES)	MAX VELOCITY (FT/SEC)	FRICTION FACTOR (FT/C.FT)	FR LOSS THIS PIPE (FEET)	ACCUM FL (FEET)	MAX HEAD REQUIRED (FEET)	PIPE SEGMENT NUMBER	SEGMENT RETENTION TIME	HOURS TO DISCHARGE
77	0	3	3	5010	5074	916	21.88	2.00	2.05	2.13	0.91	8.34	8.34	72.34	77	5.02	5.02
78	79	8	9	5080	5134	1020	25.63	2.00	2.05	2.49	1.22	12.44	103.80	157.80	78	1.86	5.46
79	83	4	13	5120	5134	751	28.13	2.00	2.05	2.74	1.45	10.89	91.35	105.35	79	0.95	3.59
80	81	3	3	4996	5062	150	21.88	2.00	2.05	2.13	0.91	1.37	7.05	73.05	80	0.82	1.67
81	0	6	9	5014	5062	466	25.63	2.00	2.05	2.49	1.22	5.69	5.69	53.69	81	0.85	0.85
82	83	4	13	5062	5134	493	28.13	2.00	2.05	2.74	1.45	7.15	87.61	159.61	82	0.62	3.27
83	92	1	27	5134	5134	524	36.88	2.00	2.05	3.59	2.39	12.55	80.47	80.47	83	0.32	2.65
84	85	3	3	5160	5230	303	21.88	2.00	2.05	2.13	0.91	2.76	100.16	170.16	84	1.66	6.85
85	86	6	9	5174	5230	1137	25.63	2.00	2.05	2.49	1.22	13.87	97.41	153.41	85	2.08	5.19
86	91	2	11	5184	5184	324	26.88	2.00	2.05	2.62	1.33	4.32	83.53	83.53	86	0.48	3.12
87	88	3	3	5138	5166	360	21.88	2.00	2.05	2.13	0.91	3.28	92.91	120.91	87	1.97	6.23
88	90	4	7	5156	5166	417	24.38	2.00	2.05	2.37	1.11	4.64	89.64	99.64	88	0.98	4.26
89	90	3	3	5130	5166	440	21.88	2.00	2.05	2.13	0.91	4.00	89.01	125.01	89	2.41	5.69
90	91	1	11	5166	5166	434	26.88	2.00	2.05	2.62	1.33	5.78	85.00	85.00	90	0.65	3.28
91	92	4	26	5152	5160	487	36.25	2.00	2.05	3.53	2.32	11.30	79.22	87.22	91	0.31	2.63
92	109	2	55	5134	5134	1587	54.38	2.50	2.44	3.72	2.08	33.01	67.92	67.92	92	0.68	2.33
93	94	3	3	5042	5116	158	21.88	2.00	2.05	2.13	0.91	1.44	43.76	117.76	93	0.87	3.54
94	95	6	9	5048	5116	429	25.63	2.00	2.05	2.49	1.22	5.23	42.32	110.32	94	0.78	2.68
95	109	2	11	5066	5116	163	26.88	2.00	2.05	2.62	1.33	2.17	37.09	87.09	95	0.24	1.89
96	99	2	2	5168	5250	680	21.25	2.00	2.05	2.07	0.86	5.87	80.15	162.15	96	5.59	9.98
97	98	3	3	5172	5250	612	21.88	1.50	1.59	3.52	3.10	18.96	94.99	172.99	97	2.03	7.16
98	99	1	4	5210	5250	182	22.50	2.00	2.05	2.19	0.96	1.75	76.03	116.03	98	0.75	5.14
99	102	2	8	5218	5250	539	25.00	2.00	2.05	2.43	1.17	6.28	74.29	106.29	99	1.11	4.39
100	101	3	3	5192	5250	519	21.88	2.00	2.05	2.13	0.91	4.72	81.10	139.10	100	2.84	7.60
101	102	5	8	5204	5250	718	25.00	2.00	2.05	2.43	1.17	8.37	76.37	122.37	101	1.48	4.76
102	105	0	16	5205	5250	138	30.00	2.00	2.05	2.92	1.63	2.25	68.01	113.01	102	0.14	3.28
103	104	3	3	5222	5250	244	21.88	2.00	2.05	2.13	0.91	2.22	70.50	98.50	103	1.34	5.30
104	105	2	5	5234	5250	251	23.13	2.00	2.05	2.25	1.01	2.53	68.28	84.28	104	0.83	3.97
105	108	2	23	5222	5250	477	34.38	2.00	2.05	3.35	2.10	10.03	65.75	93.75	105	0.34	3.14
106	107	3	3	5180	5220	393	21.88	2.00	2.05	2.13	0.91	3.58	70.11	110.11	106	2.15	6.86
107	108	5	8	5164	5220	927	25.00	2.00	2.05	2.43	1.17	10.80	66.53	122.53	107	1.90	4.70
108	109	3	34	5200	5220	1669	41.25	2.50	2.44	2.82	1.25	20.81	55.72	75.72	108	1.15	2.80
109	112	0	100	5116	5116	537	82.50	3.00	3.04	3.64	1.55	8.34	34.91	34.91	109	0.19	1.65
110	111	3	3	5132	5132	157	21.88	2.00	2.05	2.13	0.91	1.43	35.15	35.15	110	0.86	3.39
111	112	6	9	5110	5116	586	25.63	2.00	2.05	2.49	1.22	7.15	33.72	39.72	111	1.07	2.53
112	117	0	109	5116	5116	507	88.13	3.00	3.04	3.89	1.76	8.90	26.57	26.57	112	0.17	1.46
113	114	3	3	5058	5116	128	21.88	2.00	2.05	2.13	0.91	1.16	35.33	93.33	113	0.70	3.21
114	115	6	9	5064	5116	316	25.63	2.00	2.05	2.49	1.22	3.86	34.17	86.17	114	0.58	2.51
115	116	9	18	5054	5116	623	31.25	2.00	2.05	3.04	1.76	10.98	30.31	92.31	115	0.57	1.94
116	117	1	19	5106	5116	91	31.88	2.00	2.05	3.10	1.83	1.66	19.33	29.33	116	0.08	1.37
117	119	0	128	5116	5116	311	100.00	4.00	4.00	2.56	0.59	1.83	17.67	17.67	117	0.15	1.29
118	119	3	3	5138	5138	392	21.88	2.00	2.05	2.13	0.91	3.57	19.41	19.41	118	2.15	3.28
119	128	0	131	5084	5102	760	101.88	4.00	4.00	2.60	0.61	4.62	15.84	33.84	119	0.36	1.14

Pipe Type: PVC SCH 40

PIPE SEGMENT NUMBER	FLOWS INTO SEGMENT	NUMBER OF (EDU's)	ACCUM EDU's CONNECTED	150 LOW DATUM in Segment	CONTROL DATUM of Segment	PIPE LENGTH (FEET)	MAX FLOW (GAL/MIN)	PIPE SIZE (INCH)	PIPE ID (INCHES)	MAX VELOCITY (FT/SEC)	FRICTION FACTOR (FT/C.FT)	FR LOSS THIS PIPE (FEET)	ACCUM FL (FEET)	MAX HEAD REQUIRED (FEET)	PIPE SEGMENT NUMBER	SEGMENT RETENTION TIME	HOURS TO DISCHARGE
120	121	3	3	5052	5102	390	21.88	2.00	2.05	2.13	0.91	3.55	24.50	74.50	120	2.14	4.17
121	122	6	9	5068	5102	493	25.63	2.00	2.05	2.49	1.22	6.01	20.95	54.95	121	0.90	2.04
122	128	3	12	5080	5102	267	27.50	2.00	2.05	2.68	1.39	3.71	14.94	36.94	122	0.37	1.14
123	124	3	3	5106	5114	180	21.88	2.00	2.05	2.13	0.91	1.64	22.55	30.55	123	0.99	2.90
124	125	6	9	5104	5114	374	25.63	2.00	2.05	2.49	1.22	4.56	20.91	30.91	124	0.68	1.91
125	127	2	11	5100	5102	132	26.88	2.00	2.05	2.62	1.33	1.76	16.35	18.35	125	0.20	1.23
126	127	2	2	5092	5102	195	21.25	2.00	2.05	2.07	0.86	1.68	16.27	26.27	126	1.60	2.64
127	128	1	14	5090	5102	223	28.75	2.00	2.05	2.80	1.51	3.37	14.59	26.59	127	0.26	1.03
128	129	0	157	5084	5102	319	118.13	4.00	4.00	3.02	0.80	2.55	11.22	29.22	128	0.13	0.77
129	139	0	369	5084	5102	402	250.63	6.00	6.03	2.81	0.44	1.75	8.67	26.67	129	0.16	0.65
130	124	2	2	5190	5190	1245	21.25	2.00	2.05	2.07	0.86	10.74	31.65	31.65	130	10.23	12.15
131	132	3	3	5160	5188	76	21.88	2.00	2.05	2.13	0.91	0.69	67.76	95.76	131	0.42	4.03
132	133	6	9	5182	5188	511	25.63	2.00	2.05	2.49	1.22	6.23	67.07	73.07	132	0.93	3.61
133	134	8	17	5134	5172	768	30.63	2.00	2.05	2.98	1.70	13.04	60.83	98.83	133	0.74	2.68
134	137	0	19	5134	5134	625	31.88	2.00	2.05	3.10	1.83	11.42	47.80	47.80	134	0.54	1.94
135	136	3	3	5150	5184	243	21.88	2.00	2.05	2.13	0.91	2.21	42.51	76.51	135	1.33	3.74
136	137	3	6	5138	5168	370	23.75	2.00	2.05	2.31	1.06	3.92	40.30	70.30	136	1.01	2.41
137	138	5	30	5100	5130	769	38.75	2.00	2.05	3.77	2.62	20.18	36.37	66.37	137	0.42	1.39
138	139	5	35	5084	5102	723	41.88	2.50	2.44	2.86	1.28	9.27	16.19	34.19	138	0.48	0.97
139	0	0	401	5086	5105	1379	270.63	6.00	6.03	3.04	0.50	6.92	6.92	25.92	139	0.49	0.49
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Compare Our Features

Barnes	Environment/One
200' TDH Constant Duty	92' TDH Constant Duty
200' TDH Constant Duty	138'TDH Intermittent Duty
Flows To 30 gpm	Flows To 15 gpm
Vortex bronze	Cast Rotor
One Piece Fiberglass Tank OR Polyethylene / polystyrene combination (NO Welded Seams)	Polyethylene Tank (W/"Welded" Seams)
Tank Custom Made For Project AND can be field adjusted with no additional costs (ECOTRAN)	Tanks Over 96" Require A "Field Joint"
True Submersible Pump	Must Have Breather—Cannot Be Submerged
Angled Blades On Cutter (Like Scissors)	Straight Blades
Hardened Shredding Ring & Stationary	Only Stationary Hardened
Reversible Stationary For Double Life	Not Reversible
Motor Delivers 30.6 Ft Lbs Starting Torque	Motor Delivers 8.4 Ft Lbs Starting Torque
Run Dry Protection Not Required	No Run Dry Protection
Closed Valve Protection Optional	No Closed Valve Protection
Three (3) Separate Switches Used For Level Control OR Sealed Diaphragm Switch Requiring No Maintenance (Unaffected by Grease)	Two (2) Switches (Combined On/Off) Used For Level Control

BARNES PRESSURE SYSTEMS

www.cranepumps.com

Model OGP

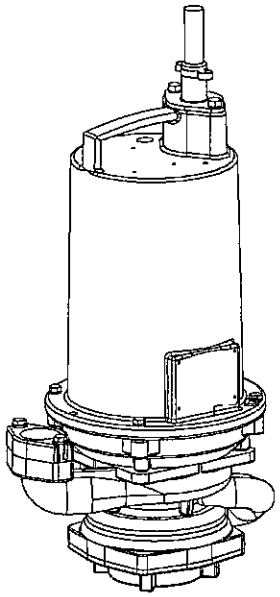
Recessed Vortex

PS-091

Submersible Grinder Pumps

Specifications:

DISCHARGE		1¼" NPT, Vertical, Bolt-on Flange
LIQUID TEMPERATURE		104°F (40°C) Continuous
VOLUTE		Cast Iron ASTM A-48, Class 30
MOTOR HOUSING		Cast Iron ASTM A-48, Class 30
SEAL PLATE		Cast Iron ASTM A-48, Class 30
IMPELLERS:	*Design*	12 Vane,Vortex, With Pump Out Vanes On Back Side. Dynamically Balanced, ISO G6.3.
	Material	85-5-5-5 Bronze
IMPELLER SPACER		300 Series Stainless Steel
SHREDDING RING		Hardened 440C Stainless Steel Rockwell® C-55.
CUTTER		Hardened 440CStainless Steel, Rockwell® C-55.
SHAFT		416 Stainless Steel
SQUARE RINGS		Buna-N
HARDWARE		300 Series Stainless Steel
PAINT		Air Dry Enamel.
SEAL:	*Design*	Single Mechanical
	Material	Rotating Faces - Silicon-Carbide Stationary Faces - Silicon-Carbide Elastomer - Buna-N Hardware -300 Series Stainless
CORD ENTRY		15 ft. (4.5m) Std. Cord. Custom Molded Quick Connect, for Sealing and Strain Relief
CORD	*Manual*	CSA/UL Approved 12/3 Type SOW
UPPER BEARING:		
	Design	Single Row, Angular contact Ball
	Lubrication	Oil
	Load	Radial & Thrust
LOWER BEARING:		
	Design	Single Row, Angular contact Ball
	Lubrication	Oil
	Load	Radial & Thrust
MOTOR:	*Design*	NEMA L-Single Phase Torque Curve, Oil-Filled, Squirrel Cage Induction
	Insulation	Class F
SINGLE PHASE		Capacitor Start/Capacitor Run.
OPTIONAL EQUIPMENT		Cord Length, Moveable Fitting



Series: OGP
2HP, 3450RPM, 60Hz

Submersible Wastewater Pump Association SWPA MEMBER

omni GRIND plus GRINDER PUMPS

UL® CSA® CSA 108 - File No. LR16567
UL 778

DESCRIPTION:

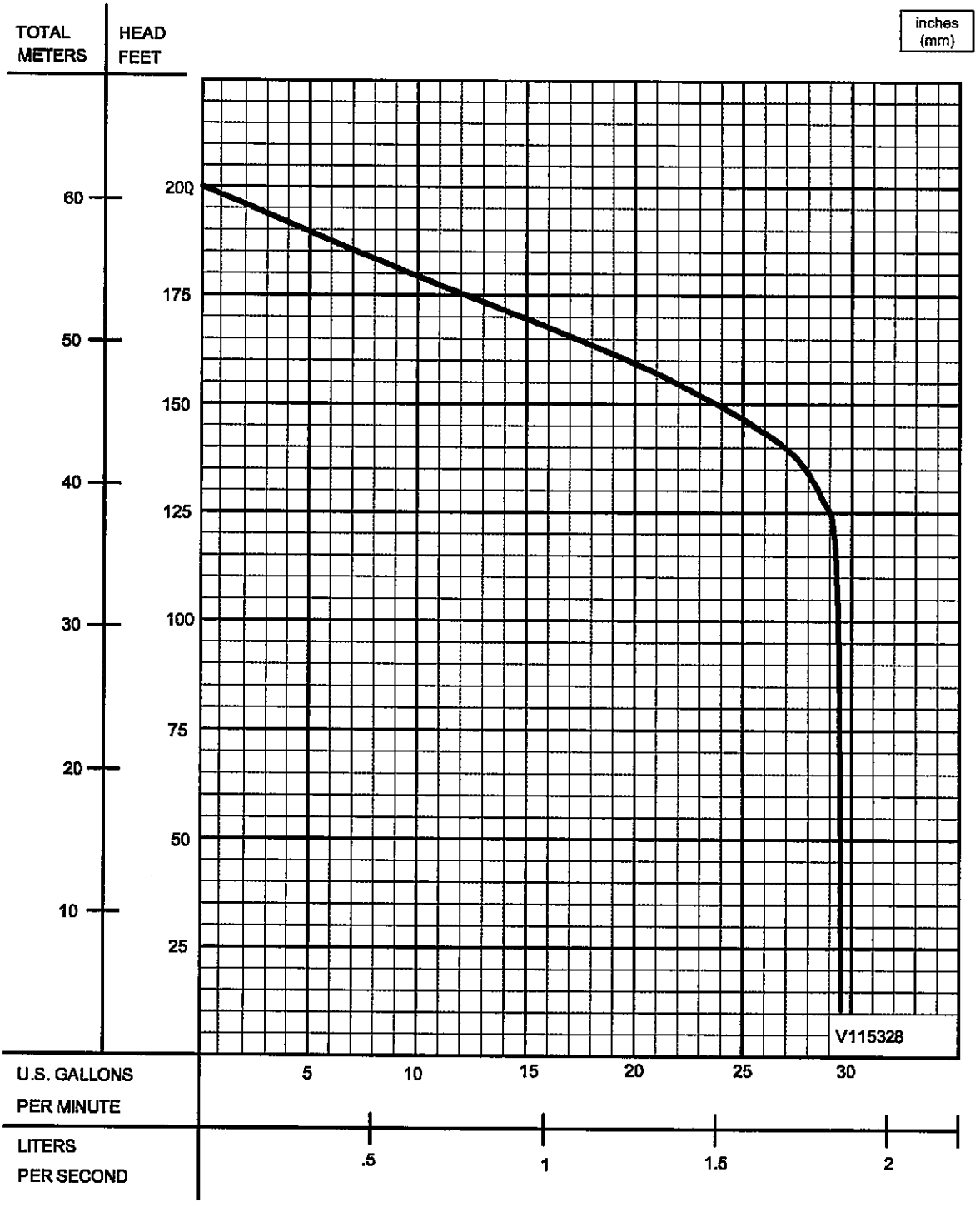
THE GRINDER PUMP IS DESIGNED TO REDUCE DOMESTIC SEWAGE TO A FINELY GROUND SLURRY.

Models OGP

Performance Curve
2HP, 3450RPM, 60Hz

PS-093

Submersible Grinder Pumps



Testing is performed with water, specific gravity 1.0 @ 68° F @ (20°C), other fluids may vary performance