ROLLANS *SOIL & ENVIRONMENTAL SERVICES*

2120 Graham Road, Mount Ulla, NC 28125 *Phone/Fax (704) 278 – 0989*

Ashley Rollans, NC Licensed Soil Scientist
Mobile: (704) 746-5046
E-mail: Rollansfortcj@aol.com

Brady Freeman, Registered Sanitarian
Mobile: (704) 746-6497
E-mail: bfree209@yahoo.com

Attached is a proposed design for a PPBPS Septic System with low pressure distribution for a 3 bedroom single family residence on Lot 11 in Oak Ridge Subdivision Iredell County, North Carolina.

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December 22, 2006
Project #:01-1296
Design By: Rollans Soil & Environmental Services

LP PPBPS SYSTEM
FOR WASTEWATER TREATMENT

Owner/Applicant:	Corinthian Development LTD
Address:	P.O. Box 3421 Mooresville, NC 28117
Phone:	704-664-4822
County:	Iredell
Location:	Oak Ridge Subdivision Lot #11
Source of Wastewater Flow:	3 Bedroom Single Family Residence
Estimated Daily Wastewater Production:	360 gpd
System Flow:	24.60

Design Specifications

Drainfield Size:	260
Loading Rate:	.25 gpd/ft.^{2}
Depth of Gravel in Trench:	NA (PPBPS)
Gravel Size:	NA (PPBPS)
Trench Depth:	36 in.
Trench Width:	36 in.
Septic Tank Size:	1000
Pump Tank Size:	1000
Estimated Supply Line Length:	112
Supply Line Diameter:	2 in. SCH 40 PVC
Supply Line Volume:	19.49
Dosing Volume:	144.72
Supply Manifold:	N/A
Supply Manifold Length:	N/A
Supply Manifold Volume:	N/A
Recommended Float Controls:	SJE Sensor Float Control Switches as Required for Control Panel or County Approved Equivalents
Recommended Control Panel:	SJE-Rhombus Model 112 (NEMA 4x) Control Panel or County Approved Control Panel.
Pressure Head:	2 ft.
Friction Head:	1.42
Elevation Head:	9.40
Total Dynamic Head:	14.75
Threaded Union:	In Tank
Gate Valves:	1 in Tank 1 per lateral
Check Valves:	In Tank
Anti-Siphon Hole:	NA
Additional Comments:	Soil suitability was performed by Rollans Soil & Environmental Services

Oak Ridge Subdivision Lot #11
LP PPBPS

DESIGN FLOW:	360
SOIL APPLICATION RATE:	.25 gpd/ft.2
TOTAL AREA TRENCH BOTTOM:	780
TOTAL LATERAL LENGTH:	260
NUMBER OF FIELDS:	1
LATERAL LENGTH REQUIRED PER FIELD:	240.00
SUPPLY LINE LENGTH:	112
TOTAL DYNAMIC HEAD:	14.75
MANIFOLD SIZE:	N/A
DOSING VOLUME:	144.72
PUMP TANK DRAW DOWN*:	6.9
SEPTIC TANK SIZE:	1000
PUMP TANK SIZE:	1000

**Pump tank draw down based on a volume basis of 21 gallons per inch. Draw down may vary among pump tank manufacturers.*

OAK RIDGE LOT #11

Project #:01-1296

LAYOUT FOR 3 BEDROOM HOME — December 22, 2006

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		2.7			100.00		
INSTR. 1			102.70				
HOUSE CNR				7.40	95.30		
P. TANK				8.50	94.20		
1	BLUE			3.30	99.40	31	31
2	DARK PINK			3.60	99.10	60	60
3	ORANGE			3.70	99.00	55	55
4	PINK			3.90	98.80	45	45
5	BLUE			4.00	98.70	33	33
6	DARK PINK			4.10	98.60	45	45
6	***DARK PINK***			***4.10***	***98.60***	***40***	***40***
7	***ORANGE***			***5.50***	***97.20***	***70***	***70***
8	***BLUE***			***6.30***	***96.40***	***55***	***55***
9	***ORANGE***			***6.80***	***95.90***	***55***	***55***
10	***DARK PINK***			***7.20***	***95.50***	***40***	***40***
					Total	529	529

	LINE LENGTH	LTAR GPD/FT2	SYSTEM TYPE	SOIL LTAR GPD/FT2	TRENCH SYSTEM	DISTRIBUTION
**** System***	***260***	***0.25***	***MOD.***	***0.25***	***PPBPS***	***LOW PRESSURE***
Repair	269	0.25	MOD.	***0.25***	PPBPS	LOW PRESSURE

Notes:
** TBM located top of ground (see site plan)
**TBM is assumed to be 100'
**All measures in feet
**Nitrification lines are demonstrated on contour via colored pin flags
**BS, HI, and FS indicate rod readings

LP PPBPS TAPSHEET - Oak Ridge Lot 11

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/hole	Trench Area	Number of Panels
6	*DARK PINK*	98.6	*40*	0.156	**0.41**	120	9
7	*ORANGE*	97.2	*70*	0.156	**0.41**	210	16
8	*BLUE*	96.4	*55*	0.156	**0.41**	165	13
9	*ORANGE*	95.9	*55*	0.156	**0.41**	165	13
10	*DARK PINK*	95.5	*40*	0.156	**0.41**	120	9
							60
	total	**feet =**	**260**	**gal/min =**	**24.6**		

Des. Flow	**360**
Pump Run=	**5.88**
soil LTAR	**0.25**
LTAR +5%	**0.2625**
LTAR with mod.	**0.333333333**
LTAR with mod.. + 5%	**0.35**

.156 equals 5/32 inch hole

CALCULATIONS

Location OAK RIDGE

Project Number 01-1296

Lot No: Lot 11

No. of Bedrooms 3

Design Flow 360 $^{gal}/_{day}$

LTAR 0.25 $^{gal}/_{ft^2\ day}$

PPBPS? (YES OR NO) YES

Supply Line Length 112 ft.

Supply Line Volume 19.488 gal.

Required Feet of Line 240 ft.
Amount of Line from Layout 260 ft.

Gallons per Minute 24.6 $^{gal}/_{min}$

Note: Flow/hole (.41gpm) x # of panels

Required Septic Tank Capacity 1000 gal.
Minimum Standard Tank Size 1000

Panel Volume 3.6 gal.
# of Panels 60
Dosing Volume 145 gal.

Note: Dosing Volume based on 67% of # of panels times 3.6 gal/panel

Tank Draw Down 6.9 *Generic Draw Down of 21 gal.per in.*

Pump Run Time 5.88 minutes

Elevation Head 9.4 ft.
Pressure Head 2 ft.
Friction Factor 1.27 ft./100 ft. *(From the interpolater.)*
Friction Head 1.42 ft.

Total Dynamic Head (+15%) 14.75 ft.

FRICTION FACTOR
INTERPOLATER
2" SCH 40 PVC

GPM	*f*
20	0.84
	-0.88
25	1.27
	-1.28
30	1.78
	-1.76
35	2.37
	-2.25
40	3.03
43.07	3.48
45	3.77
48.14	4.28
50	4.58
57.11	5.89
60	6.42