ON-SITE WASTEWATER SECTION

COUNTY: _____

SOIL/SITE EVALUATION
for ON-SITE WASTEWATER SYSTEM

OWNER: ____James Craven Jr._____ APPLICATION DATE_____
ADDRESS:___151 Beechwood Farm_____ DATE EVALUATED: __Feb. 2006
PROPOSED FACILITY: __3BR Res.____ PROPOSED DESIGN FLOW (.1949): ___360gpd__ PROPERTY SIZE: _____0.462ac_____
LOCATION OF SITE: ____151 Beechwood Farm Road_____ PROPERTY RECORDED: _____
WATER SUPPLY: ☑ Private ☐ Public ☒ Well ☐ Spring ☐ Other _____
EVALUATION METHOD: ☒ Auger Boring ☐ Pit ☐ Cut TYPE OF WASTEWATER: ☑ Sewage ☐ Industrial Process ☐ Mixed

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941)		OTHER PROFILE FACTORS				PROFILE CLASS & LTAR
			.1941 STRUCTURE/ TEXTURE	.1941 CONSISTENCE/ MINERALOGY	.1942 SOIL WETNESS/ COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	
1	L/5-10%	0-3	BSL GR	FR SS SP SEXP		47"	N/A	N/A	PS-47 0.3 GPD/FT2
		3-25	BRC MSBK	FR SS SP SEXP					
		25-47	RBCL WSBK	FR SS SP SEXP					
2	L/5-10%	0-10	BSL GR	FR SS SP SEXP	-FEW SAP INCL.	48"	N/A	N/A	PS-48 0.3 GPD/FT2
		10-30	RC MSBK	FR SS SP SEXP					
		30-48	RCL WSBK	FR SS SP SEXP					
3	L/5-10%	0-8	BSL GR	FR SS SP SEXP	FEW SAP INCL COMM. SAP INCL	48"	N/A	N/A	PS-48 0.3 GPD/FT2
		8-42	RC MSBK	FR SS SP SEXP					
		42-48	RCL WSBK	FR SS SP SEXP					
4	L/5-10%	0-12	BSL GR	FR SS SP SEXP	FEW SAP INCL COMM. SAP INCL	46"	N/A	N/A	PS-46 0.3 GPD/FT2
		12-20	RC MSBK	FR SS SP SEXP					
		20-46	RCL WSBK	FR SS SP SEXP					

DESCRIPTION	INITIAL SYSTEM	REPAIR SYSTEM
Available Space (.1945)	900SF	416SF
System Type(s)	25% RED.	PPBPS
Site LTAR	0.3gpd/ft2	0.3gpd/ft2

OTHER FACTORS (.1946): _____
SITE CLASSIFICATION (.1948): ___PS_____

EVALUATED BY: _____Samuel A. Rollans_____
OTHER(S) PRESENT: _____

COMMENTS:

SOIL/SITE EVALUATION

(Continuation Sheet)

Sheet ____ of ____

DEPARTMENT OF ENVIRONMENT
AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH

Pits 1 & 2 = Lot #2
" 3-5 = Lot #1

PROPERTY ID #: _____
DATE OF EVALUATION: _____
COUNTY: _____

PROFILE #	.1940 LANDSCAPE POSITION/ SLOPE %	HORIZON DEPTH (IN.)	SOIL MORPHOLOGY (.1941) .1941 STRUCTURE/ TEXTURE	SOIL MORPHOLOGY (.1941) .1941 CONSISTENCE/ MINERALOGY	OTHER PROFILE FACTORS .1942 SOIL WETNESS/ COLOR	.1943 SOIL DEPTH	.1956 SAPRO CLASS	.1944 RESTR HORIZ	PROFILE CLASS & LTAR
P1	L/6-10%	0-6	Bsl sr	Fr SS SP SEXP	- Comm sap incl	38"	PS		0.3
		6-30	RB C fmsbk	Fr SS SP SEXP					
		30-38	RB cl fmsbk	Fr SS SP SEXP					
		38-53	very l mass	" NS NP NEXP					
P2	L/5-10%	0-12	B sl-scl gr	Fr SS SP SEXP	- comm sap	38"	PS		0.3
		12-28	Rc fmsbk	" " " "					
		28-38	Rcl fmsbk	" " " "					
		38-51	very l mass	" NS NP NEXP					
P3	L/5-10%	0-10	B sl sr	Fr SS SP SEXP	- few clay incl	34"	PS		0.3
		10-34	Rc gr mfabk/sbk	" " P "					
		34-50	very l mass	Fr SS SP SEXP					
P4	L/5-10%	0-8	B scl wfsbk	Fr SS SP SEXP	- few Rock sap incl - comm sap incl - few clay incl.	35"	PS		0.3
		8-22	R c wmsbk	" " " "					
		22-35	Rcl wsbk	" " " "					
		35-45	very l mass	" " " "					
P5	L/5-10%	0-20	RB C wmsbk	Fr SS SP SEXP	- comm sap incl - few clay incl	36"	PS		0.3
		20-36	R cl wfsbk	" " " "					
		36-48	very l mass	" " " "					

COMMENTS: _____

ROLLANS *SOIL & ENVIRONMENTAL SERVICES*

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

Ashley Rollans, NC Licensed Soil Scientist
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Brady Freeman, Registered Sanitarian
Mobile: (704) 746-6497
E-mail: bfree209@yahoo.com

Attached is a proposed design for an Accepted (25% reduction) Septic System with Pressure Manifold distribution for a 3 bedroom single family residence on 151 Beechwood Farm Road, Iredell County, North Carolina.

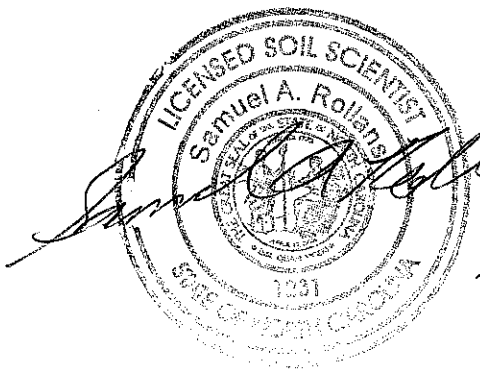
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3/22/06

March 23, 2006
Project No. Lanny Craven
Design By: Rollans Soil and Environmental Services

PRESSURE MANIFOLD SYSTEM
FOR WASTEWATER TREATMENT

Owner: James Craven Jr.

Address: 163 Bbeechwood Farm Rd.
Statesville, NC 28625
Phone: 704 878 9655
County: Iredell
Location: 151 Beechwood Farm Road

Source of Wastewater Flow: 3 Bedroom Single Family Residence
Estimated Daily Wastewater Production: 360 gpd
System Flow: 21.32

Design Specifications

Drainfield Size: 300
Loading Rate: .3 gpd/ft²
Depth of Gravel in Trench: NA (25% reduction)
Gravel Size: NA (25% reduction)
Trench Depth: 36 in.
Trench Width: 36 in.
Septic Tank Size: 1000
Pump Tank Size: 1000

Estimated Supply Line Length: 115
Supply Line Diameter: 2 in. SCH 40 PVC
Supply Line Volume: 20.01
Dosing Volume: 137.13
Supply Manifold: 4 in. SCH 80 PVC
Supply Manifold Length: 4 ft. (minimum)
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: 1.46
Elevation Head: 12.00
Total Dynamic Head: 17.78

Threaded Union: In Tank
Gate Valves: 1 in Tank
1 at Pressure Manifold
Check Valves: In Tank
Anti-Siphon Hole: NA
Additional Comments: Soil suitability was performed by Rollans Soil & Environmental Services.

151 BEECHWOOD FARM ROAD
PRESSURE MANIFOLD DESIGN

DESIGN FLOW:	360	
SOIL APPLICATION RATE:	.3 gpd/ft²	
TOTAL AREA TRENCH BOTTOM:	900	
TOTAL LATERAL LENGTH:	300	
NUMBER OF FIELDS:	1	
LATERAL LENGTH REQUIRED PER FIELD:	300	
SUPPLY LINE LENGTH:	115	
TOTAL DYNAMIC HEAD:	17.78	
MANIFOLD SIZE:	4 in.SCH 80 PVC	
DOSING VOLUME:	137.13	
PUMP TANK DRAW DOWN*:	6.5	
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.*

CALCULATIONS

Location 151 Beechwood Farm Road

Project Number Lanny Craven

Lot No: 1

No. of Bedrooms 3

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

LTAR .3 gpd/ft²

25% RED.? (YES OR NO) YES

Supply Line Length	115	ft.
Supply Line Volume	20.01	gal.
Required Feet of Line	300	ft.
Amount of Line from Layout	300	ft.
Gallons per Minute	21.32 $^{gal}/_{min}$	
Required Septic Tank Capacity	1000	gal.
Minimum Standard Tank Size	1000	
Lateral Line Volume	195.9	gal.
Dosing Volume	137.13	gal.

Note: Dosing Volume based on70% of lateral line volume

Tank Draw Down	6.5	*Generic Draw Down of 21 gal.per in.*
Pump Run Time	6.43	minutes
Elevation Head	12	ft.
Pressure Head	2	ft.
Friction Factor	1.27	ft./100 ft. *(From the interpolater.)*
Friction Head	1.46	ft.
Total Dynamic Head (+15%)	17.78	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

151 Beechwood Farm Road

Project #: Lanny Craven

LAYOUT FOR 3 BEDROOM HOME — March 23, 2006

LINE #	FLAG COLOR	BS	HI	FS	ELEVATION	FLAGGED LINE LENGTH	DESIGN LINE LENGTH
TBM		5.3			100.00		
TANK		11.90	93.40				
HOUSE		8.30	97.00				
INSTR. 1			105.30				
1	RED			3.20	102.10	41	41
2	ORANGE			3.90	101.40	58	58
3	BLUE			4.50	100.80	71	71
4	*PINK*			*4.90*	*100.40*	*91*	*38*
							50
5	*RED*			*5.70*	*99.60*	*110*	*100*
6	*ORANGE*			*6.00*	*99.30*	*112*	*100*
7	*BLUE*			*6.70*	*98.60*	*50*	*50*
					Total	**533**	**508**

	LINE LENGTH	LTAR GPD/FT²	SYSTEM TYPE	SOIL LTAR GPD/FT²	TRENCH SYSTEM	DISTRIBUTION
** System*	*300*	*0.30*	*ACCEPT.*	*0.30*	*25% RED.*	PRESSURE MANIFOLD
Repair	208	0.30	*MOD.*	0.30	PPBPS	LOW PRESSURE

Notes:

** TBM located on top of ground @right rear eip (see site plan)

** Flow divider utilized to split flow between line 4 & 7

**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

PRESSURE MANIFOLD TAPSHEET - 151 BEECHWOOD FARM ROAD

SYSTEM

Line #	Color	Elevation	Length	Hole Size	Flow/Tap	Trench Area	
4	PINK	100.4	50	SCH 40 1/2	3.55	150	FLOW DIVIDER
5	RED	99.6	100	SCH 40 1/2	7.11	300	
6	ORANGE	99.3	100	SCH 40 1/2	7.11	300	
7	BLUE	98.6	50	SCH 40 1/2	3.55	150	FLOW DIVIDER

total	feet =	300	gal/min = 21.32
		Des. Flow	360
		Pump Run=	6.43
		soil LTAR	0.3
		LTAR +5%	0.315
		LTAR with ACCEPTED	0.33075
		LTAR with ACCEPTED + 5%	0.3472875

PRESSURE MANIFOLD DETAILS