

**Phillip Marlar R.S.  
Registered Professional Sanitarian  
Certified Site Evaluator OS 9819  
P.O. Box 274 Scurry, Texas 75158  
Phone(214) 507-9521**

May 13, 2014

Tarrant County Water Control District Designated Representative

Subject: Ted & Tarayla Panchalk's property at 147 Old Hwy 85 Mabank, Texas 75156  
Subject Design: Low Pressure Dosing System

**Design Parameters:**

2 bedroom home with ~1,500 square feet living area  
(3 pods - each pod approx. 300 sq ft each)  
2 bedroom equivalent home with water saving fixtures ~ 180 gpd  
Soil Evaluation Class IV soil.  
Long Term Loading Rate .1 gal / sq ft / day  
Required Absorption Area = 180 gpd / .1 gal / sq ft / day = 1,800 sq ft  
Designed Absorption Area = 1,890 sq ft  
Total Length of Laterals = 630'

**System Parameters**

1 - 500 gallon tank / 1 - 250 gallon tank  
A Zabel A-1800 filter in the outlet of the second tank  
300 gallon pump tank chamber with high water alarm (Visual & Audible)  
Supply Line - 2" diameter sch 40 piping  
Lateral Lines - 1" diameter sch 40 piping  
Supply Line Length - 80'  
Lateral Line Length - 630'  
Hole Size in Laterals - 1/8"  
(First & Last Hole in each line must be 2' from end of & start of lines)  
Hole Spacing - 5' (See attached chart)  
# Holes - 126  
Elevation Head - 5'  
Friction Head - 1.77' (using 1.846 friction rate)  
Pressure Head - 2' (Operating Head)  
Total Head - 8.77 Ft  
.5 HP Barnes HHV 412 pump with 8.77 Ft head will pump 60+ gpm  
GPM at 2 ft Operating Head = 32.76 gpm  
Type Pump - .5 HP Submersible Barnes HHV 412 or **equivalent**  
Pump at 32.76 gpm will deliver 20+ ft. head - Pump on - off controlled by float switch  
Lateral Depth - 28 to 34" (Average Depth 31")  
Excavation width 6" to 1' wide Rock - washed clean 3/8 to 1"  
Rock Depth - at least 10" + under the pipe (laterals) then another 2" for total of 12"  
Earthen dams to be installed every 20' through out lateral lines  
Volume Supply Line - 12.96 gallons Volume Laterals - 25.83 gallons

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Volume Supply & Laterals - 38.79 gallons    Check Valve Required - YES; due to elev. of part field

Required minimum dosing volume - 142.11 gallons

Designed Minimum Dosing volume - 144 gallons

(18" of effluent depth in pump tank to be pumped at a time)

# OSSF SOIL & SITE EVALUATION

Page 1 (Soil & Site Evaluation)

Date Performed: 5 / 8 / 14

Property Owner: Ted & Tarayl Panchalk

Site Location: 147 Old Hwy 85 Mabank, Texas 75156 Proposed Excavation Depth: 28-34"

## REQUIREMENTS:

At least two soil excavations must be performed on the site, at opposite ends of the proposed disposal area. Locations of soil borings or dug pits must be shown on the site drawing. For subsurface disposal, soil evaluations must be performed to a depth of at least two feet below the proposed disposal field excavation depth. For surface disposal, the surface horizon must be evaluated. Describe each soil horizon and identify any restrictive features on this form. Indicate depths where features appear.

### Soil Boring #1:

Depth (feet)	Texture Class	Gravel Analysis (if Applicable)	Drainage (mottles / water table)	Restrictive Horizon	Observations
1 feet	II	N/A - None Found	No	No	SL
2 feet	II	N/A - None Found	No	No	SL
3 feet	II	N/A - None Found	No	No	SL
4 feet	IV	N/A - None Found	No	No	Clay
5 feet	IV	N/A - None Found	No	No	Clay

### Soil Boring #2:

Depth (feet)	Texture Class	Gravel Analysis (if Applicable)	Drainage (mottles / water table)	Restrictive Horizon	Observations
1 feet	II	N/A - None Found	No	No	SL
2 feet	II	N/A - None Found	No	No	SL
3 feet	II / IV	N/A - None Found	No	No	SL to 32" / Clay
4 feet	IV	N/A - None Found	No	No	Clay
5 feet	IV	N/A - None Found	No	No	Clay

## FEATURES OF SITE AREA

Presence of 100 year flood zone on property ☐ Yes ☒ No

Any part of OSSF located in "FEMA" 100 year flood zone ☐ Yes ☒ No

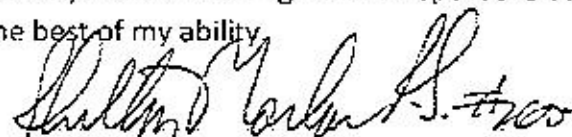
Presence of upper water shed ☐ Yes ☒ No

Presence of adjacent ponds, streams, water impoundments ☐ Yes ☒ No

Existing or proposed water well in nearby area (within 150 feet) ☒ Yes ☒ No

Ground Slope 0 to 1 %

I certify that the findings of this report are based on my field observations and are accurate to the best of my ability.

  
(Signature of person performing evaluation)

5/8/14  
Date

SE#0819  
Registration Number and Type

Ted & Taragla Pawchall  
147 Old Hwy 85  
Mabank, TX 75556 open field

21± ACRES

