

Final Report

for

GLO Contract No.: 12-299-000-5648

Inventory of On-Site Sewage Facilities to Support Watershed Planning in the Lower Nueces River Watershed



**A report of the Coastal Coordination Council Pursuant to National
Oceanic and Atmospheric Administration Award No. NA09NOS4190165**



FINAL REPORT

Inventory of On-Site Sewage Facilities to Support Watershed Planning in the Lower Nueces River Watershed

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Project Description

The purpose of this project was to continue with the development of a database of permitted On-Site Sewage Facilities (OSSFs) in Nueces and San Patricio Counties within the Lower Nueces River Watershed that may be imported into a Geographic Information System (GIS). In July and August 2011 the Texas State Soil and Water Conservation Board (TSSWCB) provided funding to the Nueces River Authority (NRA) to hire two part-time people to begin the data collection. The information was entered into an Excel spreadsheet. The attributes/fields for each OSSF included most of the required information on TCEQ's *Application for On-Site Sewage Facility*. NRA coordinated with the City of Corpus Christi GIS department to ensure that all necessary information was included and that the format was appropriate for future import into a GIS layer. The OSSF information developed during the project is just one of several data categories being compiled to characterize the watershed as part of Watershed Protection Plan.

Task 1: Inventory of OSSFs in Nueces and San Patricio Counties

The attributes/fields of the input spreadsheet were based on TCEQ's *Application for On-Site Sewage Facility*. The thought process behind including so many fields was to be sure get all that was needed, knowing that it would be easier to remove unneeded information later rather than having to go back and get additional information. The spreadsheet also contained format information and selection lists. The fields of the initial input file included:

File Name	Acreage (Acres N.3)
Application No.	Physical Location (Up to 500 char)
County (Nueces, San Patricio)	Water Service Type (Private, Public)
TCEQ Date (mm/dd/yyyy)	Public Supplier
Property Owner Last Name	Property Type (Commercial, Residential, Rural)
Property Owner First Name	Application Date (mm/dd/yyyy)
Property Owner MI (1-Char)	Facility Owner Last Name
Mailing Address	Facility Owner First Name
City	Facility Owner MI (1-Char)
State (2-Char)	Drain Pipe Type (Copper, PVC, Other)
Zip	Drain Pipe Size (Inches N.2)
911 Site Address	Daily WW Usage Rate (Gallons N.2)
911 City	Water Saving Devices (Yes, No)
911 State (2-Char)	Treatment Unit (Aerobic, Septic Tank)
911 Zip	Tank Size (Gallons N.2)
Subdivision	Liquid Depth (Feet N.2)
Section	Pretreatment Tank (Yes, No)
Block	Pretreatment Tank Size (Gallons N.2)
Lot	Disposal System Type (Drain Field, Evaporation, Irrigation, LPD, Mound, Other)
Plat Date (mm/dd/yyyy)	Disposal System Area (Acres N.2)
Survey Name	
Abstract Name/No	

Permitted OSSF information, as an Excel spreadsheet, for all of Nueces County was obtained from the Nueces County Health Department. The Nueces County Appraisal District provided information on properties within the Lower Nueces River Watershed. The two files were compared and the OSSFs within the watershed were extracted.

Permitted OSSF information for San Patricio County is stored in paper files under the owner’s name at the time of installation. The San Patricio County Appraisal District also provided information on properties within the watershed, but cross referencing these OSSF files was not very easy. Therefore, the permit files were looked at individually and based on the address, the information was included in the spreadsheet for this county.

The information for all fields was not available for all records, and not all the information entered cohered to the formats listed above. Additional time needs to be spent removing duplicate data and verifying the format of the remaining data. Coordinate data were obtained using the address and Google Earth and added to the final spreadsheet (*OSSF_Nueces_SanPat – Final.xls*). The locations were plotted using the “Add XY Data” function in ArcGIS. A GIS layer has not yet been created.

A few additional fields (highlighted below) were also added to help evaluate the information and submitted for this project. *Field Descriptions.docx* contains descriptions of each field.

FID	PhysicalLocation (Up to 500 char)
LAT	WaterServiceType (Private, Public)
LONG	PublicSupplier
County (Nueces, San Patricio)	PropertyType (Commercial, Residential, Rural)
PropertyOwnerLastName	DailyWWUsageRate (Gallons N.2)
PropertyOwnerFirstName	WaterSavingDevices (Yes, No)
PropertyOwnerMI (1-Char)	TreatmentUnit_Compiled
MailingAddress	DisposalSystem_Compiled
City	TreatmentUnit
State (2-Char)	TankSize (Gallons N.2)
Zip	Disposal System Type (Drain Field, Evaporation, Irrigation, LPD, Mound, Other)
SiteAddress911	Disposal System Area (Acres N.2)
City911	Installer
State911 (2-Char)	PermitNo
Zip911	Comment
Phone	InWatershed_InFloodPlain_Outside
Subdivision	
Acreage (Acres N.3)	

A total of 744 records are included in the final spreadsheet: 263 in Nueces County and 481 in San Patricio County. A preliminary screening of the data yielded:

	Treatment Unit Type								Total
	Within the Floodplain		Within the Watershed		Outside the Watershed		Total Per County		
	Nueces	San Patricio	Nueces	San Patricio	Nueces	San Patricio	Nueces	San Patricio	
Aerobic	0	1	2	3	0	10	2	14	16
Conventional	0	0	2	0	1	0	3	0	3
Septic Tank	0	22	6	213	2	189	8	424	432
Unknown	4	3	71	19	175	21	250	43	293
Total	4	26	81	235	178	220	263	481	744

	Disposal System Type								Total
	Within the Floodplain		Within the Watershed		Outside the Watershed		Total Per County		
	Nueces	San Patricio	Nueces	San Patricio	Nueces	San Patricio	Nueces	San Patricio	
Absorption	0	0	1	3	1	1	2	4	6
Aerobic Sprinkler	1	1	14	3	16	11	31	15	46
Conventional	1	1	18	10	24	9	43	20	63
Drain Field	0	0	0	3	0	6	0	9	9
E. T. Bed	0	0	0	2	0	1	0	3	3
EZ Flow	0	8	0	52	0	57	0	117	117
Graveless Pipe	1	0	2	3	6	0	9	3	12
Gravity	0	5	0	18	0	14	0	37	37
Infiltrator	0	1	0	29	0	19	0	49	49
Leaching chamber	0	0	1	16	5	10	6	26	32
Low Pressure Dosing	0	3	22	18	66	19	88	40	128
Multipipe	0	0	0	6	1	2	1	8	9
Pipe and Gravel	0	1	0	5	0	3	0	9	9
PTI	0	0	0	2	0	0	0	2	2
Pumped	0	1	0	23	0	21	0	45	45
Sand Filter	0	0	1	0	2	0	3	0	3
Standard	0	0	0	2	0	1	0	3	3
Trench Beds	0	0	0	6	0	3	0	9	9
Other	1	0	21	2	53	1	75	3	78
Unknown	0	5	1	32	4	42	5	79	84
Total	4	26	81	235	178	220	263	481	744

	Water Service Type								Total
	Within the Floodplain		Within the Watershed		Outside the Watershed		Total Per County		
	Nueces	San Patricio	Nueces	San Patricio	Nueces	San Patricio	Nueces	San Patricio	
Private	4	22	29	200	81	189	114	411	525
Public	0	1	52	9	97	5	149	15	164
Unknown	0	3	0	26	0	26	0	55	55
Total	4	26	81	235	178	220	263	481	744

	Water Service Type								Total
	Within the Floodplain		Within the Watershed		Outside the Watershed		Total Per County		
	Nueces	San Patricio	Nueces	San Patricio	Nueces	San Patricio	Nueces	San Patricio	
Private	4	22	29	200	81	189	114	411	525
Public	0	1	52	9	97	5	149	15	164
Unknown	0	3	0	26	0	26	0	55	55
Total	4	26	81	235	178	220	263	481	744

Task 2: OSSF Education Workshop for Homeowners

Using the information-to-date as of from the septic inventory spreadsheet and mailing lists for the Nueces River Watershed Partnership (NRWP), notices for a free OSSF Education Workshop for Homeowners were mailed to 789 addresses and emailed to 124 people on May 31, 2012. 389 of the mailed notices were returned. The notice was also posted on the Partnership’s website: <http://www.nuecesriverpartnership.org/>.

Ryan Gerlich with Texas AgriLife Extension Service (TAES) in College Station conducted the workshop on June 11, 2012. He was assisted by Brent Clayton with TAES in Corpus Christi. It was held in the Calallen Independent School District Magee Intermediate Cafeteria. The meeting location was provided free of charge. Fifteen people signed the sign-in sheet.

The workshop described proper routine maintenance techniques that improve the effectiveness of wastewater treatment systems. The purpose and proper function of the OSSF was described with an emphasis on how water use patterns, cleaning products, personal care products, and organic material can impact OSSF function.

Task 3: Project Administration and Coordination

Progress Reports were submitted monthly:

- #1 02/10/2012 for December 29, 2011 – January 2012
- #2 03/09/2012 for February 2012
- #3 04/05/2012 for March 2012
- #4 05/08/2012 for April 2012
- #5 06/07/2012 for May 2012
- #6 07/10/2012 for June 2012
- #7 08/10/2012 for July 2012
- #8 08/30/2012 for August 2012

Requests for reimbursements were submitted quarterly:

- #1 03/23/2012 for December 29, 2011 – February 2012
- #2 06/07/2012 for March – May 2012
- #3 08/30/2012 for June – August 2012

Budget amendments were submitted prior to the second and third reimbursements requests.

Project Contribution to Future Work

As referenced above under the Project Description, NRA is developing a WPP for the Lower Nueces River – the Texas Commission on Environmental Quality (TCEQ) Segment 2102. This endeavor began as a Source Water Protection program under a contract with the City of Corpus Christi. This section of the river is the primary drinking water source for nearly 500,000 people in the Coastal Bend region. The City of Corpus Christi funded the program from August 2010 through July 2012.

The NRWP was formed to serve as a means to gather stakeholder input and direction in the development of the SWPP and ultimately the WPP. The NRWP met six times between January 2011 and July 2012. Workgroups were also formed to provide more specific input and information. The following workgroups each met once between February 2011 and May 2011: Education and Outreach, Water Quality, Utilities, Agriculture, and Recreation.

A Source Water Protection Plan (SWPP) (<http://www.nuecesriverpartnership.org/Misc/SWPP-Final.pdf>) was delivered to the City of Corpus Christi in August 2012. The SWPP will be used as the basis for the development of the full WPP for the Lower Nueces River in accordance with the United States Environmental Protection Agency's (USEPA) Elements of Successful Watershed Plans.

TSSWCB and NRA have developed a proposed scope of work to complete the development of a comprehensive WPP for the Lower Nueces River watershed beginning in Fiscal Year (FY) 2013 and continuing through FY 2015. This proposed project was included in TSSWCB's FY 2012 Clean Water Act (CWA) §319(h) Nonpoint Source (NPS) grant application to USEPA. As of September 6, 2012, TSSWCB is awaiting USEPA approval of this proposed project. TSSWCB will contribute funds to aspects of the plan that are somewhat outside the jurisdiction and/or the purview of the City's SWPP.

One of the specific tasks within the proposed scope of work is to complete the OSSF inventory, including Jim Wells County, provide education workshops for homeowners, and develop a voluntary OSSF inspection and financial assistance program.

NRA will, with input and technical assistance from federal, state, and local regulatory agencies (USEPA, GLO, TCEQ, county health departments, etc.), develop a voluntary OSSF inspection and financial assistance management plan for qualified participants. This management plan will be incorporated into the WPP. The completion of the OSSF inventory will include additional analysis of the data, such as prioritizing targeted areas for the management plan based on age, density, etc. NRA will also coordinate and collaborate with TAES to deliver four additional workshops similar to the one conducted for this GLO contract.

Acknowledgements

NRA would like to acknowledge and thank the following entities for their funding and/or support and as we develop the WPP for the Lower Nueces River:

- Texas General Land Office Coastal Management Program
- City of Corpus Christi
- Texas AgriLife Extension Service
- Texas State Soil and Water Conservation Board
- Coastal Bend Bays and Estuaries Program
- Nueces County Health Department
- Nueces County Appraisal District
- San Patricio County Health Department
- San Patricio County Appraisal District
- Jim Wells County Health Department