

Digitizing Albany County Septic and Well Data

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Stormwater Coalition of Albany County

University at Albany – SUNY Student Mapping Projects

NYSDEC WQIP Grant Contract C00081GG

Presentation Outline

- I. Origins of the Project
- II. Understanding Septic Systems & Wells
- III. Understanding the Albany County Department of Health Data Set
 - Guidance Documents
 - Folder 29359
- IV. Folder Investigations & Spreadsheets
- V. Preparing Data for “GIS” Software
- VI. Maps
- VII. Lessons Learned

I. Origins of Project

NYSDEC MS4 Stormwater Permit Minimum Control Measure 3

Identifying sources of surface water pollution and eliminate them

Failing septic systems - source of pollution

...to groundwater and surface water

NYSDEC WQIP Grant #C00081GG

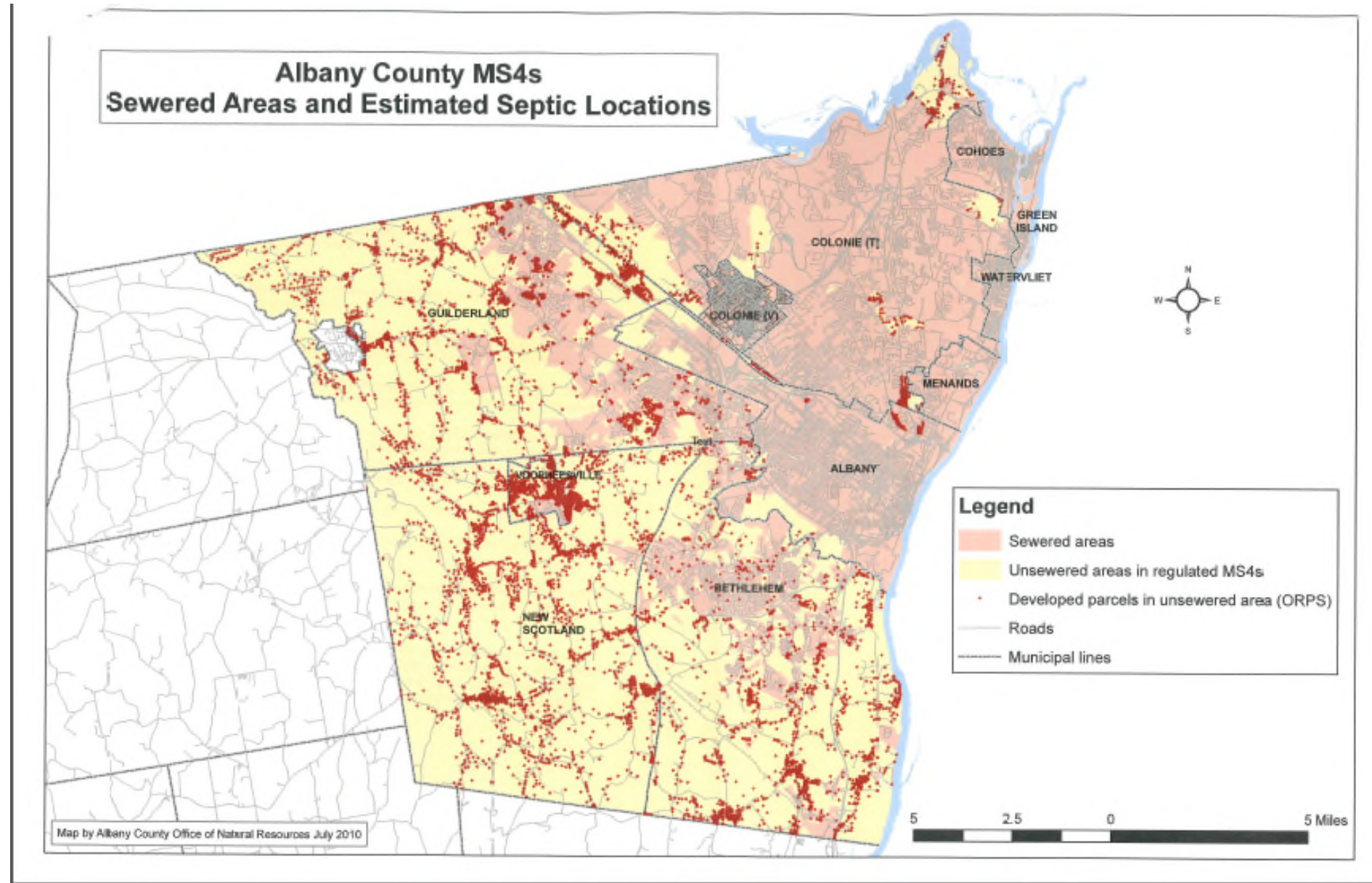
Identify “Priority Areas”

i.e. Where are septic systems located?

Identify areas of historic on-site sanitary system failures

i.e. Use data to help anticipate on-site system failures

Previous NYSDEC WQIP Grant (2010) Estimated Location of Septics

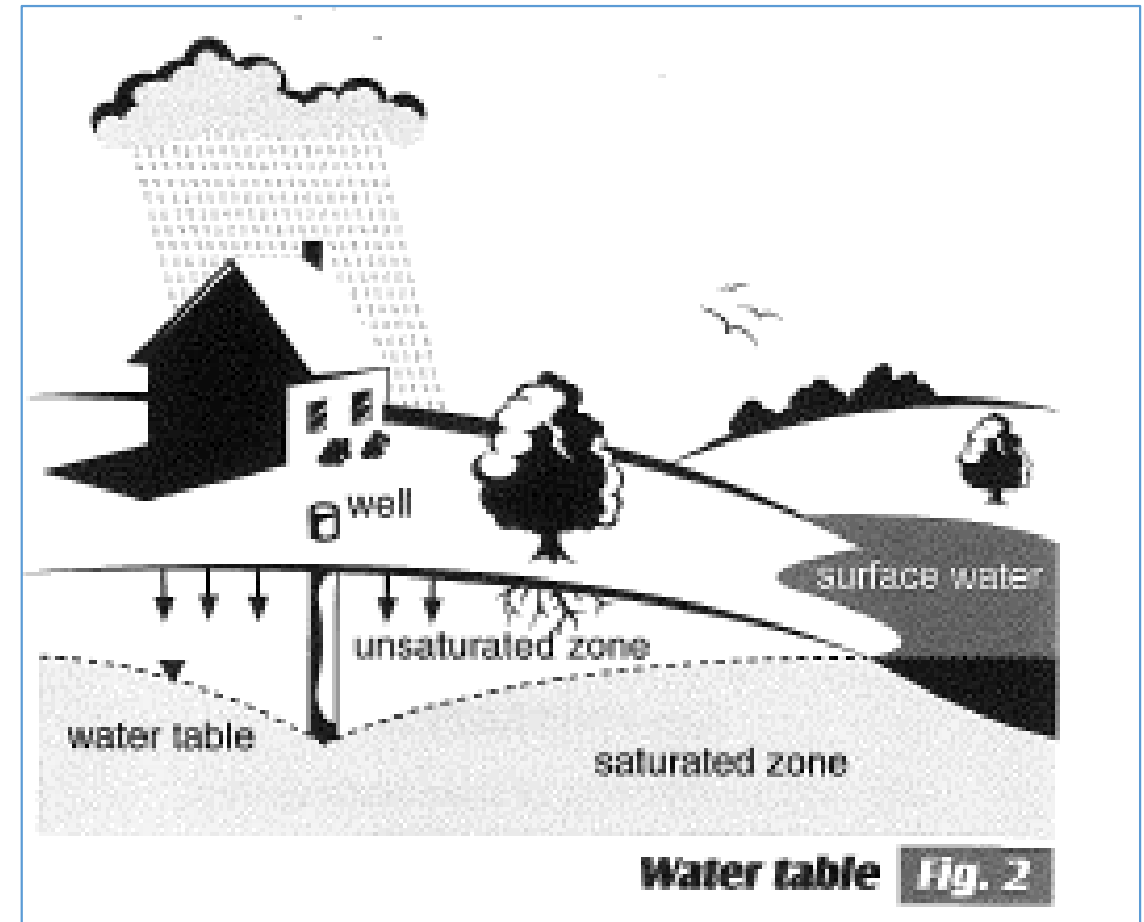
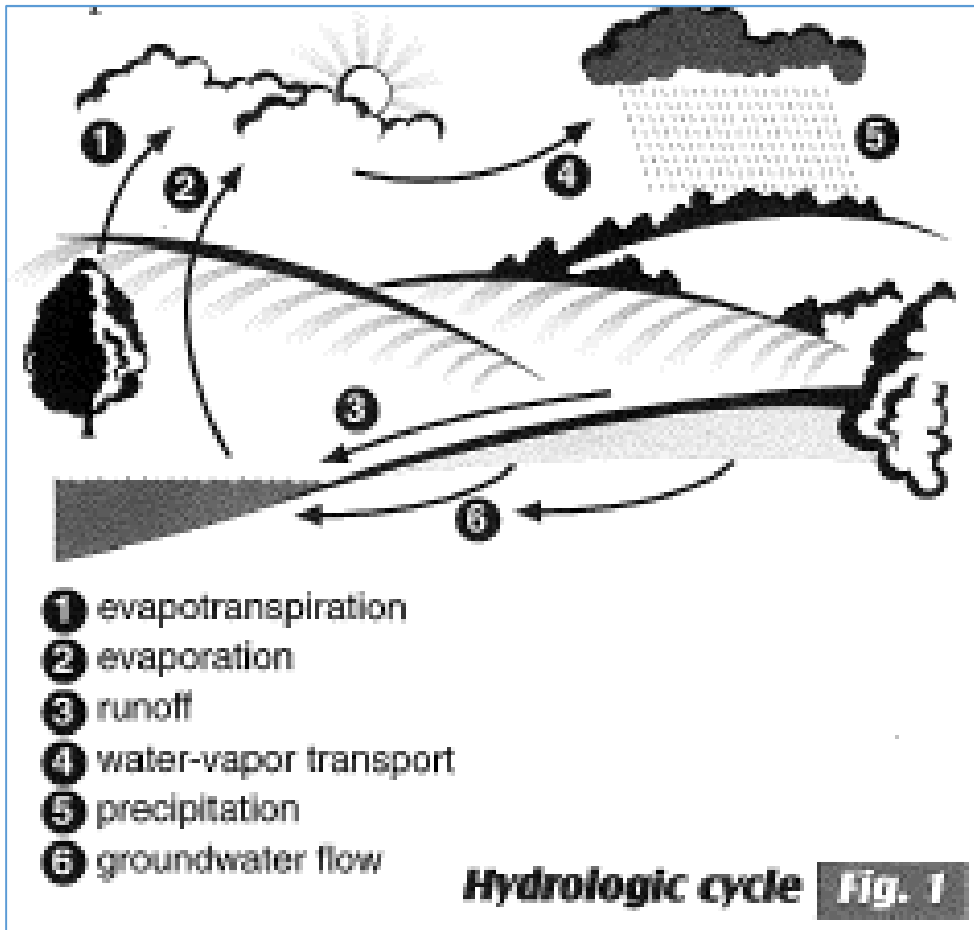


II. Understanding Septic Systems & Wells

Septic systems- treat wastewater onsite. **Wells** – drinking water.

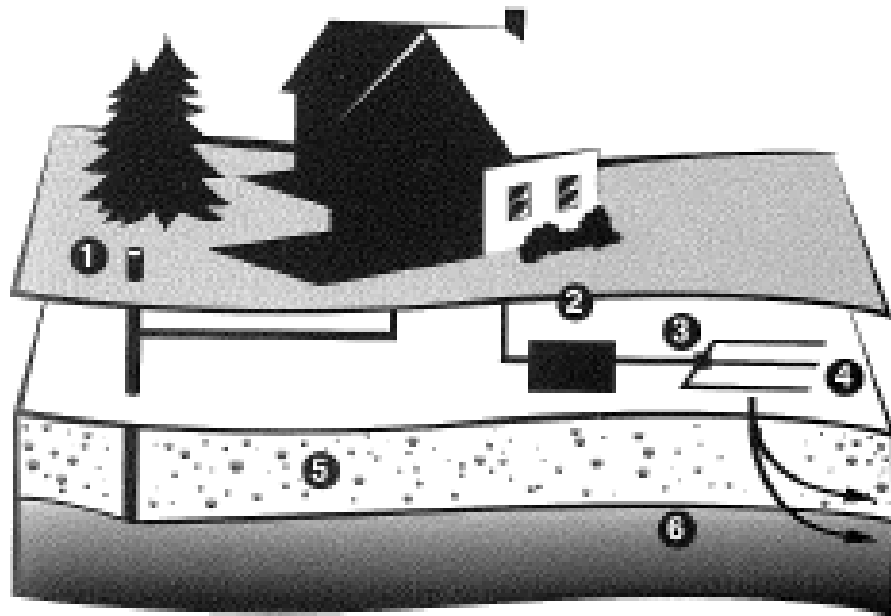
Reading Material

National Small Flows Clearinghouse brochures



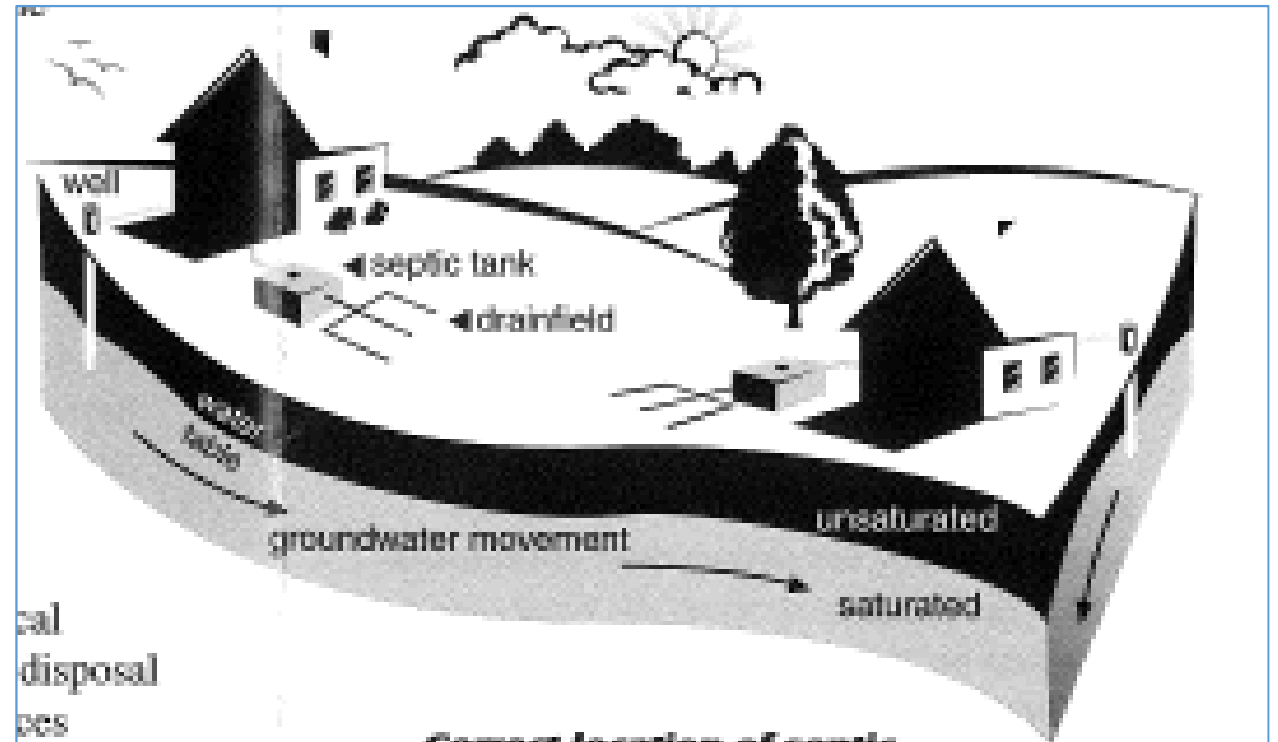
Reading Material

National Small Flows Clearinghouse brochures



- ① drinking water well
- ② septic tank
- ③ distribution box
- ④ absorption field
- ⑤ soil absorption (unsaturated zone)
- ⑥ groundwater (saturated zone)

Wastewater treatment and disposal in soil Fig. 3

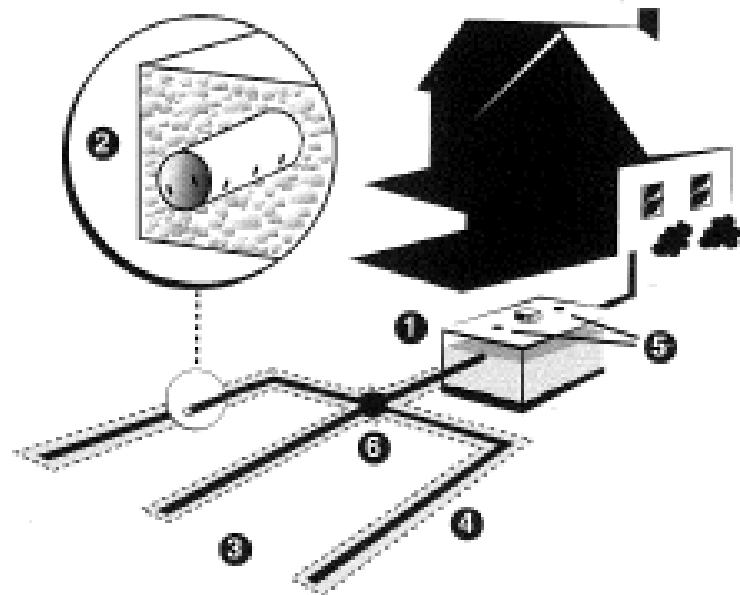


cal
disposal
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Correct location of septic systems and drinking water wells Fig. 3

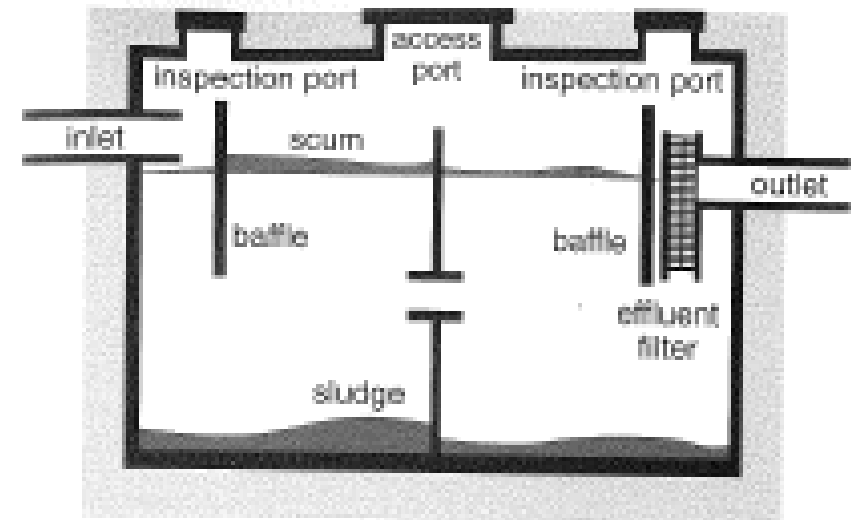
Reading Material

National Small Flows Clearinghouse brochures



- ① septic tank
- ② 4" perforated pipe
- ③ absorption field
- ④ crushed rock or gravel lined trench
- ⑤ inspection ports
- ⑥ distribution box

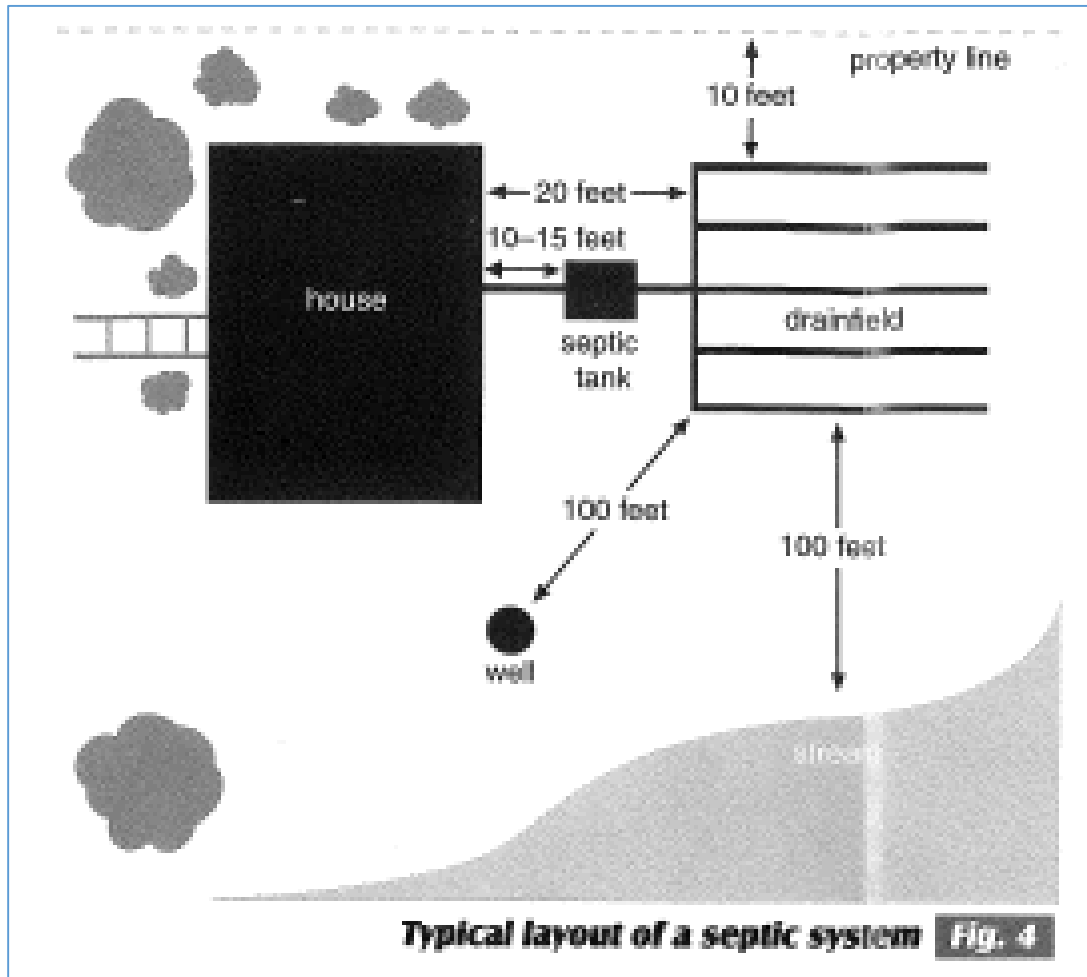
Typical Septic System Fig. 1



Cross-section of a two-compartment septic tank

Fig. 2

Reading Material



Field Visit 9/29/18 Job Shadow



County Health Dept – Proposed Septic System Berne, NY

Proposed Septic System - Field Visit (cont'd)

County Health Dept – Division of Environmental Health Services
Approves all septic systems and wells in Albany County

WHAT ARE THEY LOOKING FOR?

- Can the soil support a leach field?
(absorption rate of soil-PERC TEST)
- Does the leach field need fill?
(sand vs. ground soil)
- Location of well relative to septic
(separation requirements)



Why septic systems fail?

Failure: wastewater enters ditches, streams, and groundwater UNTREATED

Pollutants of Concern: Bacteria/viruses; Nutrient loading (nitrogen & phosphorus); Organics (paint thinner, solvents)

- Leach field compacted – heavy vehicles drive over it
- Leach field clogged with solids – tank not pumped out routinely
- Helpful leach field bacteria get killed – hazardous chemicals poured down drain
- System undersized – more people live in the house than expected

III. Understanding County Well & Septic Data “ACDOH/Tom’s workbook”

1	ID	NAME	ADDRESS	MUNI	Req #	DATE	DEPTH	STATIC	GPI	X	Y	LOG	CHEMICAL	PERC	Fill	Accuracy	notes
2	1	Altamont, Ed	Admin Bldg	Alta		1988	150	200	3	-74.0258	42.6082	0-10: Br Clay, 10-450: Shale					
3						x	64	23	150	-74.0253	42.7078	0-20: clay & HP, 20-39 Cl, 40-61 med. Gr., 61-64 SandStone					
4						1941	91	37	300	-73.9628	42.6235	0-39 Cl-Gr, 39-71 Gr, 71-76 Cl, 76-89 Gr, 80-91 HP					
5						1967	118	12	800	-73.9002	42.6906	0-55 Cl, 55-117 Gr, 117-118 HP					
6						1980	100	25	30	-73.9971	42.4399	0-17					
7	6	South Albany	Curry Rd	Beth	Comm	1975	311	20	65	-73.8519	42.5529	0-30					
8	7	North East #2	Rte 85A	N. Scot	Comm	1995	80	45	65	-73.9135	42.6492	Sand					
9	8	Voorheesville	Grove St.	Voor	Comm	1993	64	23	600	-73.9275	42.6550	Sand					
10	9	Flemings MHP	Rte 9W	Coey	Comm	1978	250	?	40	-73.8136	42.5153	20-1					
11	10	Knox Estates	Knox Cave Rd	Knox	Comm	1998	442	110	15	-74.1146	42.6750	0-4 H					
12	11	Meilaks	Old Ravena Rd	Coey	Comm	1989	210	?	30	-73.8049	42.5234	13-2					
13	12	Pine Park	Rte 443	Berne	Comm	1995	186	39	100	-74.1020	42.6177	0-17					
14	13	Mazzeo, J.	184 Orchard Hill Rd	N. Scot	27080	1999	220	3	5	-73.9209	42.6075	0-25	Na 238, "S" odor	>45	Yes		
15	14	Pidgeon	Rte 85	N. Scot	27098	1998	300	32	11	-73.9812	42.5936	0-7 H	Fe 0.4	>60	Yes		
16	15	Cramer, J.	Rte 85A	N. Scot	27119	1999	20	7	30+	-73.9610	42.6438	0-7 H	Cond 1175,	9	Yes		
17	16	Lawrence, S.	Youmans, 131	N. Scot	27208	2000	280	20	3	-73.9194	42.6345	35-2	Fe 2.1, Na 67	27	No		
18	17	McDonnell, J.	Picard Rd	N. Scot	27360	2001	31	6	10	-73.9891	42.6545	0-10	Fe 0.5	10	Yes		
19	18	Pickup, D.	Clapper Rd	Beth	27083	1999	145	50	15	-73.7893	42.5579	0-13	Fe 2.8, Na 118	16	No		
20	19	Hallenbeck, S.	Rte 403	Westerl	27081	1999	400	146	6	-74.0633	42.4386	0-6 H	"S" odor	>60	Yes		
21	20	Porte D.	Goodfellow Rd	Westerl	27235	2000	420	x	x	-74.0743	42.5100	0-13	"S" odor, Na 102	No	Yes		
22	21	Hughes, R.	Rte 360	Renss	27227	2002	182	100	8	-74.1504	42.4933	0-71	Fe 1.04	24	Yes		
23	22	Rauf, J.	Jaycox Rd	Renss	27151	1999	160	28	14	-74.1186	42.4538	0-48	Fe 0.37	8	No	***	
24	23	Barilla, S.	Sayre Rd, 238	Renss	27129	1999	150	44	8	-74.1588	42.4486	0-4 H	Fe 2.3	No	Yes	**	
25	24	Lee, H.	Barger Rd, 122	Renss	27089	1998	185	102	10	-74.1346	42.4589	0-40	Good	?		**	
26	25	Re, P.	Buckhorn Mt. Rd.	Renss	27306	1988	171	10	4	-74.1723	42.4565	0-16	Good	11	No	**	
27	26	Brown, A.	Debbie Dr.	Knox	27245	2003	300	37	4	-74.0549	42.6939	0-20	Fe 1.0, Na 153	31	Yes	*	
28	27	Baumstein, J.	Seabury Rd, 62	Knox	27140	1999	402	40	5	-74.1701	42.6339	0-19	Good	7	No	**	
29	28	Spiak, P.	West Rd							-74.1491	42.6430	0-70	Good	2	Yes	*	
30	29	Doggette, S.	Rte 143							-73.8377	42.4615	0-11	Fe 1.3	>60	Yes	*	
31	30	Palmer, J.	Keir Rd							-73.8835	42.5117	0-5 C	Na 155, "S" odor	17	Yes	*	
32	31	Decker, J.	Alcove Rd							-73.9209	42.4650	0-6 C	Fe 1.2, Na 93	5	Yes	**	
33	32	Williams, A.	Rte 143 & Halsted Ln							-73.8381	42.4622	0-5 T	Good	16	Yes	**	
34	33	Stanton, M	Biers Rd							-73.8977	42.5064	0-6 C	Na 91	13	No	**	
35	34	Danz, T	Gardner Rd							-74.0053	42.6855	0-8 G	Fe 1.2, Na 93	4	Yes	*	
36	35	Peacock, D.	Rte 158, 6990							-73.9827	42.7370	0-80	Fe 11.3, Na 146	6	?	*	
37	36	Finn, J	798 Meadowdale, 798							-73.9830	42.6814	0-71	Fe, Na, SO4, Fl.	x	x	***	
38	37	Davis, M	Kings Rd, 1375	Guilid	27192	2000	21	11	12	-73.8824	42.7299	Sand	Good	6	No	**	
39	38	Cieszynski, W.	Ostrander Rd, 6092	Guilid	27213	2000	150	30	5	-73.9418	42.6948	0-80	Na 112, Cond 1250	No	Yes	*	
40	39	Gleasant, M.	Rte 156	Guilid	27346	2001	26	10	5	-74.0081	42.6711	0-25	Good	No	Yes	*	
41	40	Kelleher, T.	Sickle Hill Rd	Berne	27366	2001	330	11	5	-74.1739	42.5849	0-6 C	Fe 2.53, Na 83	No	Yes	*	
42	41	Sequin, G.	Thacher Pk., 1043	Berne	27058	2000	405	101	6	-74.0335	42.6481	0-62	Na 57	5	Yes	**	
43	42	Lee, A.	Rte 85/Flood Rd	Berne	27183	1960s	170	63	6	-74.0316	42.5619	1-6 C	Na 57, Cond 980	>60	Yes	**	
44	43	Engel, R.	Welch Lane	Berne	27198	1999	300	36	3	-74.0741	42.5993	0-6 S	Good	8	?	**	
45	44	Shultes, A.	Taber Rd, 67	Berne	27351	2001	98	0	6	-74.1165	42.6276	0-8 C	Fe 0.38, Mn 0.74, SO4 140	19	No	**	
46	45	Sipperly, J	Smith Ave	Beth	27385	2001	130	62	6	-73.8368	42.5293	12-9	Fe 0.64	?	Yes	*	
47	46	Morehouse, G	Morehouse Rd	Coey	26394	1997	310	133	3	-73.8866	42.4939	0-10 Cl, 10-114, HP & Bldrs, 114-307 Shales, 307-510 Limestone	Fe 0.82, Cl & Na 360, Fl 2.44	20	No	*	

DEPTH of what? STATIC?

**CHEMICAL -
water data?
Units? What is
“good”?**

**Need to separate
this grouped data
into individual
fields. Then, can
query by
individual
chemical
parameters using
GIS. ID location
patterns?**

**Septic info,
good.
Interested
in that.
What is
PERC of 10?**

**X/Y location
data! Good, need
this for GIS**

What’s inside? How do they differ? Excel “workbook” with 4 “worksheets”

Well Data Entry Guide

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[illegible]

Folder #29359
Request # 29359



Matching data Field Name with Health Dept Forms

Name of Form or Document From Which Data is Obtained			ACDOH Division of Environmental Health Service-Request Form	ACDOH Division of Environmental Health Service-Request Form	ACDOH Division of Environmental Health Service-Request Form	ACDOH Division of Environmental Health Service-Request Form	NYSDEC Water Well Completion Report	NYSDEC Water Well Completion Report
Reference Number on Form or Document where info is Located			1	2	3	4	5	6
Field Names (Tom's Spreadsheet Original Data Tab)	ID		NAME	ADDRESS	MUNI_	Req #	DATE	DEPTH
Field Names (Tom's Spreadsheet GIS Tab)	ID		NAME	ADDRESS	MUNI_	Req #	DATE	DEPTH
Field Names (SWC Spreadsheet - File: 2018_WellData_FromFolders. Tab: WellData-DataEntry)	ID	Folder_Location	NAME	ADDRESS	MUNI_	Req#	DATE	DEPTH_ft
Description of Fields (Tom's Spreadsheet. Field Name -Descrip Tab)	Unique well identifier*		Unique well name (usually last name and first initial of the well owner)	Property Address of the water well	Municipality of property address	Reg # (request number) is our in house project/file number and cooresponds to both well and septic. - from Tom Brady	Date (year) the well was drilled/driver/dug	Depth (in feet)
Description of Fields (SWC Spreadsheet - File: 2018_WellData_FromFolders. Tab: WellData-DataEntry).	Unique well and septic identifier* This number is VERY important. It was assigned by Cnty DOH to each well and often for wells compiled. There are 734 ID#s in Tbrady spreadsheet GIS tab and 817 ID#s in the Original Data tab.	Describes location of	Unique well name (usually	Property Address		Reg # (request number) is the house project/file number used by County DOH for many, many years. It cooresponds to both well and septic. - from Tom Brady	Date (year) the well was drilled/driver/dug	Depth of Well Below Land Surface (feet), also called Depth to Bottom of Hole in diagram on NYSDEC Well Data Completion Report.

Reviewing Tom's Field Names descriptions. Mtg w/Tom questions/clarifications (2/9/18)

WELL DATA

Laboratory Report Provided to Albany DOH.	Laboratory Report Provided to Albany DOH.	Laboratory Report Provided to Albany DOH.	Laboratory Report Provided to Albany DOH.	Laboratory Report Provided to Albany DOH.	Laboratory Report Provided to Albany DOH.	Laboratory Report Provided to Albany DOH.	Laboratory Report Provided to Albany DOH.
24	25	26	27	28	29	30	31
Conductivity_Units_u mhos_cm	Alkalinity_CaCO 3_Total_Unites _mg/L	Hardness_CaCO3_Tot _Units_mg/L	NITRATE_as_N_Units_mg /L	Iron_Fe_Units_mg/L	Mangnese_Mn_mg/L	CHLORIDE_Units_mg/L	Sulfate_S_mg/L
What is Conductivity? Measure of water's capability to pass electrical flow. Ability is directly related to the concentration of ions in the water.	What is Alkalinity? Alkalinity as the quantitative capacity of water to neutralize an acid	What is Hardness? Water described as hard, just means that the water is high in dissolved minerals. Eventually lead to mineral buildup.	Nitrate Info: Compound that is formed naturally when nitrogen combines with oxygen or ozone. Essential for all living things, but high levels of nitrate in drinking water can be dangerous to health.	Iron Info: Concentration above 1 mg/L will impart a foul taste to the water. High concentrations can indicate runoff from mining operations or industrial effluent and indicate the need for further investigation before prescribing a treatment regimen. The US drinking water standard prohibits levels above .3mg/L	Manganese Info: Manganese is required by aquatic species and no toxicity data is available. Surface and ground water rarely contain more than 1 ppm of Manganese. Acceptable levels in potable water is less than 0.05mg/L	Chloride Info: Natural in groundwater at low level. Public drinking water standards require chloride levels not to exceed 250mg/L.	Sulfur /Sulfate Info: Two forms of sulfur are commonly found in drinking water supplies: sulfate and hydrogen sulfide. Both forms are nuisances that usually do not pose a health risk at the concentrations found in domestic water supplies. "S" order is sourced to the decay of organic matter chemical reaction with sulfur-containing mineral in soil and rock. Not considered to be harmful because the taste and odor is so unpleasant at such low levels that the taste and smell would prohibit most people from drinking it well before it reached harmful levels.

Individual Fields for Chemical Parameters Research
(Units, Acceptable Levels, Other Info)

WELL DATA

		??? May need to provide guidance for how to convert whatever lat/long is recorded using whatever format is converted to decimel degrees. Need decimel degrees for GIS data.	??? May need to provide guidance for how to convert whatever lat/long is recorded using whatever format is converted to decimel degrees. Need decimel degrees for GIS data.	NYSDEC Water Well Completion Report	NYSDEC Water Well Completion Report				ACDOH Checklist for SDS Request	DOH Site Inspection for Individual Lots Document
		10	10	10	10				10	8
PERC	Fill	K	Y					Accuracy		
PERC	Fill	K	Y					Accuracy		
PERC	Fill	K	Y	X -D/M/S	Y - D/M/S	X (actual septic)	Y (actual septic)		Completion_Date	Number_of_Bedrooms
Septic System percolation rate (1 inch of water drop - wooden stick reference)	SepticSystem-Fill used/needed for septic system(raised mounds, etc	Longitude from Well Data [NH Note: all lat/long data will be converted to decimel degrees as required when uploading GIS data into ESRI) Decimel degree Longitude data will be entered here. Well Longitude position indicates location of septic system nearby	Latitude from Well Data [NH Note: all lat/long data will be converted to decimel degrees as required when uploading GIS data into ESRI) Decimel degree Latitude data will be entered here. Well Latitude position indicates location of septic system nearby	Longitude (Degrees/Minute s/Seconds). If Form uses D/M/S, that original location info will be recorded here. It may be incorrect. That	Latitude (Degrees/Minutes/Seconds). If Form uses D/M/S, that original location info will be recorded here.	Longitude of best guess of actual septic system location in decimel degrees	Latitude of best guess of actual septic system location in decimel degrees	The *s indicates my sense of accuracy. *means the location is very exact. **less so and ***approximately. -from Tom Brady		
									Date Certificate of Occupancy (C of O) was mailed	Determines size of percolation system and potential at risk, high use septic systems.
SEPTIC DATA										
NO ADDITIONAL DATA COLLECTED ABOUT	be reviewed again in Folder data. OPTIONS: 1-YES FILL Present or 2-NO FILL									

If need fill, is system more at risk???

Lat/Long – units & conversion issues

Date Septic Completed (age of system/prone to failure?)
What is C of O?

ALBANY COUNTY HEALTH DEPARTMENT DIVISION OF ENVIRONMENTAL HEALTH SERVICES - REQUEST FORM			
Request Received <u>8/23/12</u>	By <u>William Ryan</u>		
Person Requesting Service	Name <u>John Stannard - J P Delancy Execution</u> Address _____ Home Phone <u>797-3835</u> Work Phone _____ Cell <u>681-1981</u>		
Owner	Name <u>Stuart Roy Meyers (COM Farms LLC)</u> Address <u>60 Melham St, Lexington MA 02420</u> Home Phone _____ Work Phone _____ Cell _____		
SDS - L/O ☒	WATER SAMPLE _____	BURN PERMIT _____	
ASSIST _____	SANITARY SURVEY _____	OTHER _____	
Subdivision: No ☒ Yes _____ Name _____			
Private Home S.D.S. ☒		Commercial S.D.S. _____	
Water Supply: Private ☒ Public _____ Number of Bedrooms <u>*7</u>			
MAILED APPLICATION PACKET _____ # Entry Abandoned House out building			
Referred to <u>William R Ryan</u> Date <u>8/23/12</u>			
Inspector's Report (findings) w/ 8/23/12 met at site @ John Stannard + Contractor Bill Wanner for inst of SOS V.I.T. Room C21 per hls. Found 10 min + 22 did not for inst of 44" x Redwell due to # Bedroom like again per design and advised additional 24" pour Tilt hole Allie mid basement so is a new well to be drilled (Reddy) w/ access door opened. w/ 9/11/12 - met at site @ Matt Driller Paul Roth, installed drilling new well (SEA + Drilling). Also reviewed SOS B.I.L Wanner steps from basement without mark outside g/lc shot grades & will call for protection - V w/ 9/26/12 - met @ Lawrence John Stannard + Bill Wanner for A Sec'd SOS site inspection. Plan B1 per hls - same man As above. (1) 24" hole 760 mm (1) 18" hole 760 mm (3) 24" hole Steps from basement without mark outside g/lc shot grades & will call for protection - V			
Date Completed <u>4/5 min, not yet</u> Inspector's Signature <u>to Shohel</u>			

Note: Use reverse side for sketch showing well, sewage disposal locations when approval given.

REQUEST FORM

CITY: <u>Rensselaerville</u> ROAD OR RTE: <u>351 Anthony Hill Rd</u>	DIRECTIONS:	REQUEST# <u>29359</u> C <u>CBM Farms LLC</u> NAME: <u>Meyers</u>
---	-------------	---

CHECK LIST FOR SDS REQUEST

Insp. Init.

<u>WR</u> ☒ FIELD VISIT <u>WR</u> ☒ APPLICATION RECEIVED <u>WR</u> ☒ FEE RECEIVED _____ ☐ FILL LETTER ISSUED - ☐ WELL LETTER _____ ☐ FILL APPROVED _____ ☐ LAYOUT MAILED _____ ☐ FINAL INSPECTION _____ ☐ WATER SUPPLY INSPECTED & SAMPLE COLLECTED _____ ☐ WELL LOG RECEIVED _____ ☐ ADDITIONAL INFO. REQUIRED <u>WR</u> ☒ C/O MAILED	DATE <u>8/23/12</u> 5 DATE <u>9/26/12</u> SDS: DATE <u>9/11/12</u> WELL: DATE <u>11/7/12</u> DATE _____ N/A _____ DATE _____ N/A _____ DATE _____ DATE _____ SYSTEMS APPROVED _____ DATE _____ WATER SUPPLY SATIS. _____ DATE _____ WELL LOG SATIS. _____ DATE _____ 10 DATE <u>10/23/13</u>
--	--

REQUEST FORM w/Request #

SITE INSPECTION FOR INDIVIDUAL LOTS

DATE 5/20/13

CBM Farms

For Price

REQUEST# 29359

OWNER Stuart Vregeas

CITY, STATE, ZIP _____

ADDRESS _____

TELEPHONE# _____

LOCATION OF LOT Albany Hill Rd

near Runklesville

8. NUMBER OF BEDROOMS 7

1. ACCOMPANIED AT SITE BY Joe Hammond - Row - Runklesville

2. GENERAL CONTRACTOR B. N. Hester SANITARY CONTRACTOR John Starnes

3. DIMENSION OF LOT _____ SET BACK _____

4. DEPTH OF BORING _____ TO GROUND WATER _____

5. SOIL OBSERVATION Stoney Loom, Some Thin Grass

6. TO BE RUN UNTIL TIME STABILIZES (MAXIMUM OF THREE (3) RUNS):

SOAKING TIME	1	2	3	4	5	6	1	2	3	4	5	6
FINISH		10:58	50	04			48	52	11:02	11:15		
START			10:40	53			10:35	44	57:30	11:04		
TIME IN MIN.	8.70	9.11	10	11			10.7	8	10	10		

STABILIZED FOR 1 INCH DROP (FROM 6" to 5") min. HOLE #1 _____ HOLE #2 _____

6. DEPTH OF PERC HOLE #1 24'

DEPTH OF PERC HOLE #2 _____

7. WILL FILL BE NECESSARY? fill installed per plan

AMOUNT _____

8. WILL EXTENSIVE GRADING BE NECESSARY? YES _____ NO ☒

9. DOES SURFACE DRAINAGE REQUIRE SPECIAL CONSIDERATION?
YES ☒ NO _____

10. LOCATION OF DISPOSAL SYSTEM: FRONT _____ REAR _____ SIDE _____

REMARKS PT #3 ST 10:37 43

F 41 48

INSPECTED BY T 4 DATE 5/28/13

APPROVED _____

Dimensions as per plan - 46' x 93' all
ok for plan approved

SITE INSPECTION FOR INDIVIDUAL LOTS

Septic Data

NYSDEC WATER WELL COMPLETION REPORT

Well Data



1970's record
keeping

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Albany
WATER WELL COMPLETION REPORT

WELL CODE: 1730

Owner: Stewart & Roy Myers

Sample Loc: 348 Albany Hill Rd, Rensselaersville

Sample Pt: Well head

Water Source: Drilled well

Chlorinated: No

Field Residual Chlorine:

YIELD TEST

PUMP INSTALLATION

DRILLER INFORMATION

LOCATION/SECTION: Indicate point

Albany Hill Rd

ST. PETER'S BENDER LABORATORY

Albany County Health Dept
So Ferry & Green Street
Albany, NY 12202

Printed On: 11/1/2013 Page 1 of 2

Sample ID: AR13586

Date Received: 09/26/2012

Time Received: 15:59

PO Number:

Your Ref: 29359

Customer: Albany County Health Dept

Owner: Stewart & Roy Myers

Sample Loc: 348 Albany Hill Rd, Rensselaersville

Sample Pt: Well head

Water Source: Drilled well

Chlorinated: No

Field Residual Chlorine:

Long binder report

Collected Date: 09/26/2012

Collect Time: 11:22

Collected by: WRYAN

Potability: Yes

Grab Cont: Grab

Receipt Temp: 12 C on ice chilling

Laboratory Report

Test	Result	MCL	Qualifiers	Units	Method Used	Analyst	Analysis Date
Total Coliform	Positive		X	per 100 mL	SM18-21 6222B	BJS	9/26/2012
Color	<5	15		UNITS	SM 18-21 2120B	BPC	9/26/2012
Turbidity	14	5	X	NTU	EPA 180.1 Rev2.0	BPC	9/26/2012
Odor	None Detected	3		units	SM18-20 2150B	BPC	9/26/2012
pH	8.2		H	Sat. units	SM18-21 4500-H B	BPC	9/26/2012
Conductivity	390			unhos/cm	EPA120.1 Rev.1962	CHR	10/1/2012
Alkalinity, Tot(CaCO3)	142		A	mg/L	SM 18-21 2320B	MBF	10/4/2012
Hardness as CaCO3, Total	65	120		mg/L	SM18-21 2340C	MBF	9/27/2012
Nitrate as N	<0.2	10.0		mg/L	SM18-21 4500NO3E	BP	9/28/2012
Iron	0.09	0.30	X	mg/L	SM 18-21 3111B	NSS	9/28/2012
Manganese	0.06	0.30		mg/L	SM 18-21 3111B	NSS	9/28/2012
Chloride	28	250		mg/L	SM18- 4500-Cl-C	MBF	10/2/2012
Sulfate	16	250		mg/L	ASTM D516-90	MBF	10/1/2012
Sodium	62.6			mg/L	SM 18-21 3111B	NSS	10/8/2012
Fluoride	0.149	2.2		mg/L	SM18- 4500-F C	SUB*	10/20/2012
Arsenic	<0.005	0.010		mg/L	SM18-19,21 3113B	BP	10/5/2012

Qualifiers Key:
X - Exceeds maximum contamination limit
S - Lab control sample outside acceptance limits
A - Sample contained air bubble or headspace

M - Matrix spike recovery outside acceptance limits
R - Duplication outside acceptance limits
H - Hold time exceeded
T - Temperature outside specifications

MCL = Maximum Contaminant Level referenced from New York State Subpart 5-1 of the Public Drinking Water Standards and/or National Primary/Secondary Drinking Water Standards.

Comments:
Sample is POSITIVE for Total Coliform. This result indicates that the water WAS-NOT of a SATISFACTORY sanitary quality when sampled for the contaminants examined. Water of good sanitary quality should have no Escherichia coli or Total Coliform Bacteria. Sample is NEGATIVE for Escherichia coli. EC MUG TUBE NEGATIVE. For drinking water samples, any positive result for total coliform and/or Escherichia coli is unacceptable.

25 Total Coliform Colonies.

Sample was NEGATIVE when screened for Bacteriological sample was set up on 09/26/12

ALKALINITY: There are no specific limits set the pH is below 8.3 the alkalinity, if any, is due considerably lower quantity than the bicarbon

LABORATORY REPORT Well Data

ALBANY COUNTY HEALTH DEPARTMENT
DIVISION OF ENVIRONMENTAL HEALTH SERVICES
175 Green Street
ALBANY, NEW YORK 12202
YIELD TEST RECORD

OWNER Stewart & Play Myers C.T.V.
LOCATION 348 Albany Hill Rd. Rosenschonk NY DATE OF TEST 9/26/12
12117

DATE, WEATHER & SAMPLE	TIME (Hr:Min)	TAPE MEASUREMENT IN WELL FROM TOP OF CASING	GPM
	(0) 7:53	52	4+
	7:54	55	
	7:55	57	
	7:56	59.5	
	7:58	61	
	7:58	63	
	8:00	65+	
	8:00	67	
	8:01	69	
	8:02	70.5	
	8:03	72	
	8:04	73.5	
	8:05	75	
	8:05	88	
	8:15	99.5	
	8:35	108.5	↓
	8:45	114	3
	8:55	116+	↓
	9:15	118	↓

9
(GATED FLOW TO ?)
(30 gpm @ 8:36)

Measurement Frequency:
Record flow rate drawdown and recovery levels as follows:
Every min. for 10 min.
Every 10 min. to 1st hr.
Every 20 min. until the water level has stabilized, then continue for a minimum of 4 hours.

CERTIFY THAT THIS TEST WAS PERFORMED UNDER MY SUPERVISION AND THE INFORMATION CONTAINED IN THIS FORM IS ACCURATE AND REPRESENTS THE RESULTS OF THE TEST.

SIGNATURE [Signature] DATE 9/26/12

ALBANY COUNTY HEALTH DEPARTMENT
DIVISION OF ENVIRONMENTAL HEALTH SERVICES
PAGE 2
YIELD TEST RECORD CONTINUED S. Myers P. 2

DATE, WEATHER & SAMPLE	TIME (Hr:Min)	TAPE MEASUREMENT IN WELL FROM TOP OF CASING	GPM
	9:35	118.5	3
	9:45	118.5	
	10:15	118.5	
	10:35	118.5	
	10:55	off site	
	11:05	118.5	
	11:35	118.5	
	11:55	118.5	
	12:15	118.5	
	12:35	118.5	
	12:55	off site	
	1:15	118.5	↓
	1:35	118.5	
	1:36	118.5	↓
	1:37	116.0	0
	1:38	113	
	1:39	111.5	
	1:40	110	
	1:41	108.5	
	1:42	107.5	
	1:43	106	
	1:44	104.5	
	1:45	103+	
	1:46	101.5+	
	1:56	91.5	
	2:06	82	
	2:16	75	↓

Ramp off @ 1:36
Recovery

ALBANY COUNTY HEALTH DEPARTMENT
DIVISION OF ENVIRONMENTAL HEALTH SERVICES
PAGE 3
YIELD TEST RECORD CONTINUED S. Myers

DATE, WEATHER & SAMPLE	TIME (Hr:Min)	TAPE MEASUREMENT IN WELL FROM TOP OF CASING	GPM
	2:26	69.5	0
	2:36	66	
	2:46	63	
	2:56	60.5	
	3:06	58	
	3:16	57	
	5:15	53.5	↓
	7:40 am	50+	Next Apr

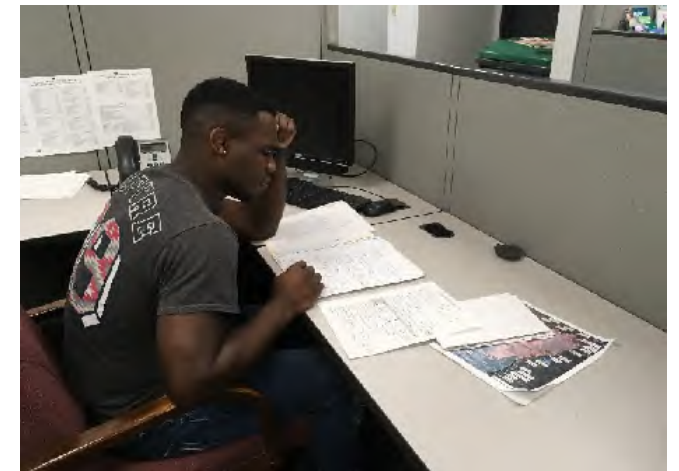
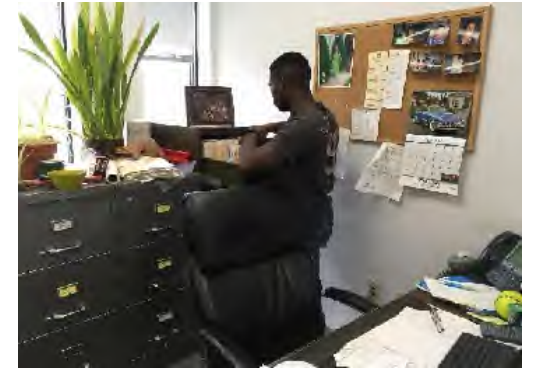
$42 \times 4 = 168$
 $300 \text{ min} \times 3 \text{ gpm} = 900$
 $= 1,068 \text{ gallons}$
pumped during test.
- 66.5' of Draw-Down to test pump best of 118.5' B.g.
Total Depth = 400'
pump set @ 395'
= 276.5' of water column above pump while stabilized.
(approx 415 gallons).

Yield Test Record WELL DATA

IV. Folder Investigation & Spreadsheets

ACDOH/Tom's workbook reviewed

- Reviewed data in “Original Data” worksheet
- 75 Request #'s (Folders) reviewed-looked at forms
- Added new data, if available
- Older folders had been moved to County Hall of Records
- For some Request #'s projects started, not completed
(ex. had well data, but septic not completed).



VI. Preparing Data for “GIS” Software

Used “Original Data” worksheet

- Most current data set (1941 to 2013)
- Reviewed data from Folders, checked it against data entered in “Original Data” worksheet
- “Original Data” worksheet was expanded, additional fields were added & data entered from Folders (“Expanded” worksheet)

“Expanded” worksheet – Additional Fields

Well Data: Date groundwater sample collected

Lab where tested

Water testing results: nitrogen only; sediment only,
coliform only, etc.

Septic Data: Completion date

Fill – Yes/No

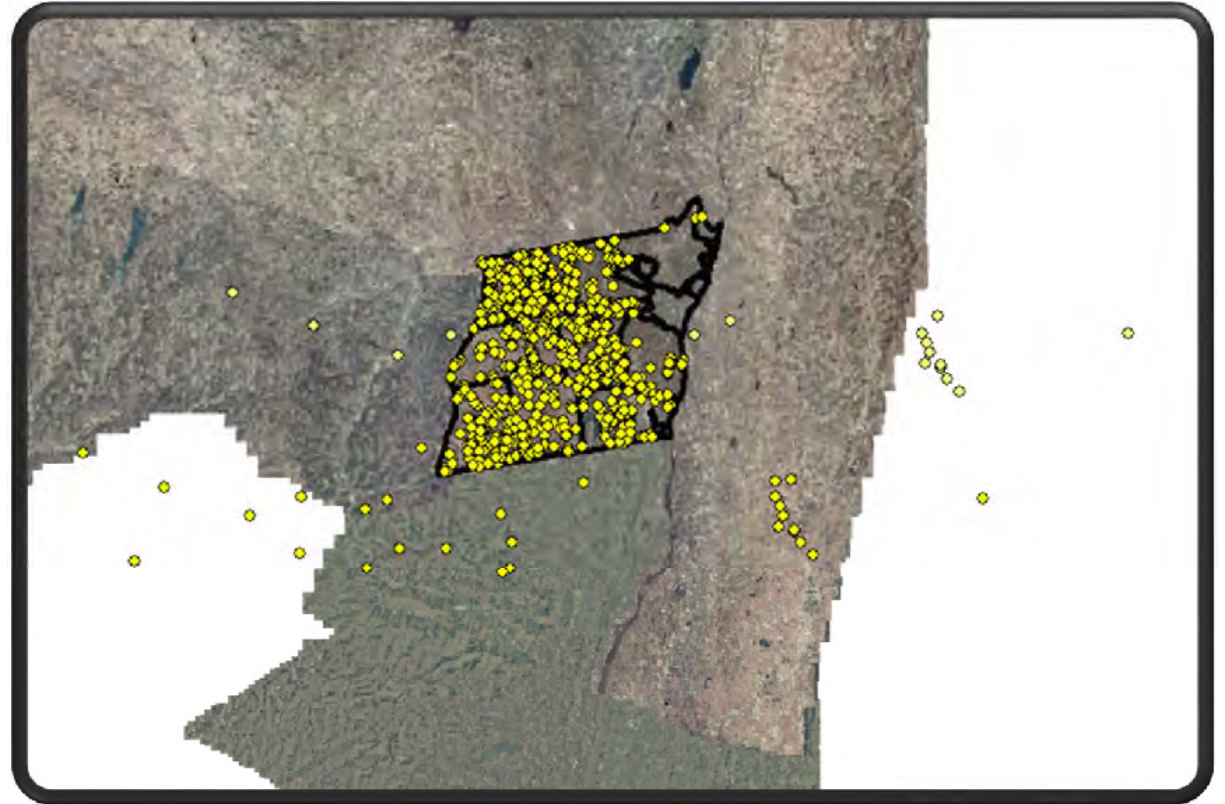
of Bedrooms

First “test” map

Used “Expanded”
worksheet

PROBLEM:

Why are all those points
outside Albany County?



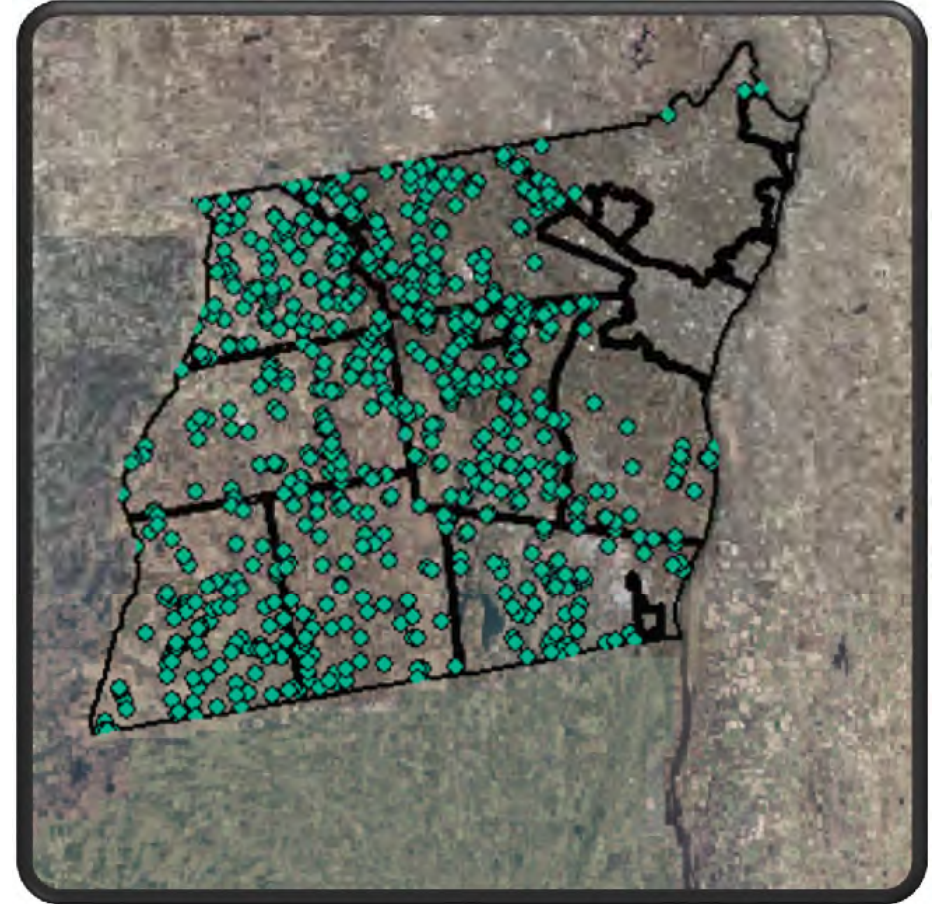
Second “test” map

Data preparation corrections

- No spacing in field names

Location corrections

- All Lat/long data converted to decimal degrees
- Corrected “outlier” addresses using 2017 tax parcel ownership data



Data Awareness

The Septic/Well project team discovered that there were two versions of the ACDOH workbook, one more current than the other, but they appeared to be the same. Unknowingly and fortunately the “Expanded” worksheet was derived from the most current workbook using the “Original Data” worksheet.

The “Original Data” worksheet contained location information reviewed and corrected by ACDOH (Tom), which spanned Request # folders dating from 1941 to 2007, plus data NOT reviewed and corrected by ACDOH which spanned 2007 to 2013.

This explained why so many points in the First “test” map, a map generated using all data from the “Original Data”, had so many points outside Albany County.

Data Clean Up

The 75 Request # Folder data in the Expanded worksheet (derived from the “Original Data” worksheet) was reviewed again using this information.

Request # Folder data from 1941 to 2007 was deemed to have sufficiently corrected lat/long positions and did NOT need further review

Request # Folder data from 2017 to 2013 was reviewed carefully. Depending on the project proposal (septic & well; septic only/no well; well only/no septic) location information was corrected.

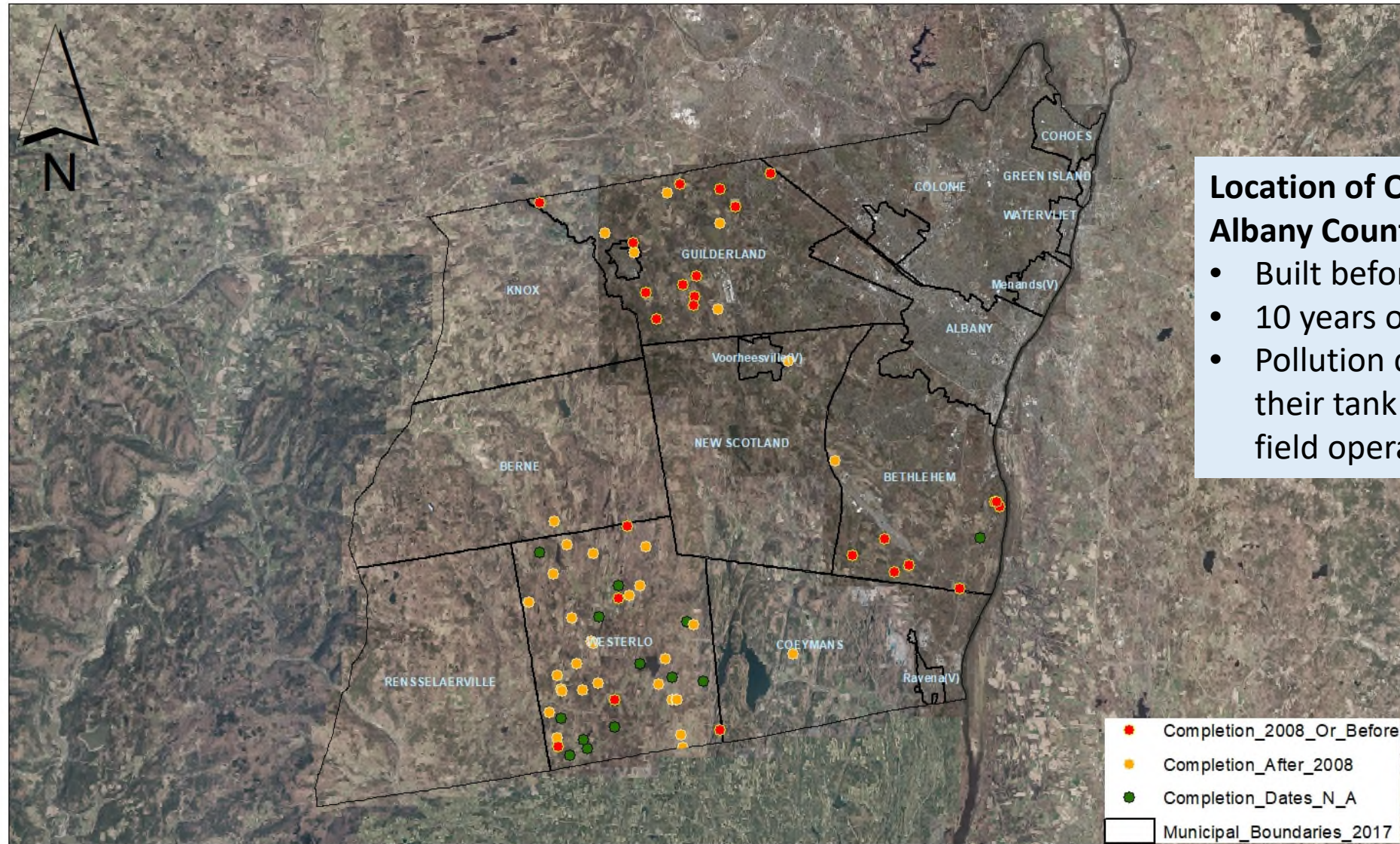
If septic built but no well or no well data because on public water, then no X/Y coordinate information in folder, only address information. So, used tax parcel data and address info to create a point within the tax parcel, near building where septic likely to be built. Using ESRI Calculate Geometry, a lat/long value generated.

If well data point is outside Albany County, there will still be information about the location of the well in the “Original Data”, now “Expanded” spreadsheet. This information (owner name, address, municipality) was cross referenced with 2017 tax parcel data and the point moved to the correct location, near building where well likely to be built. Using Calculate Geometry tool, a lat/long value generated.

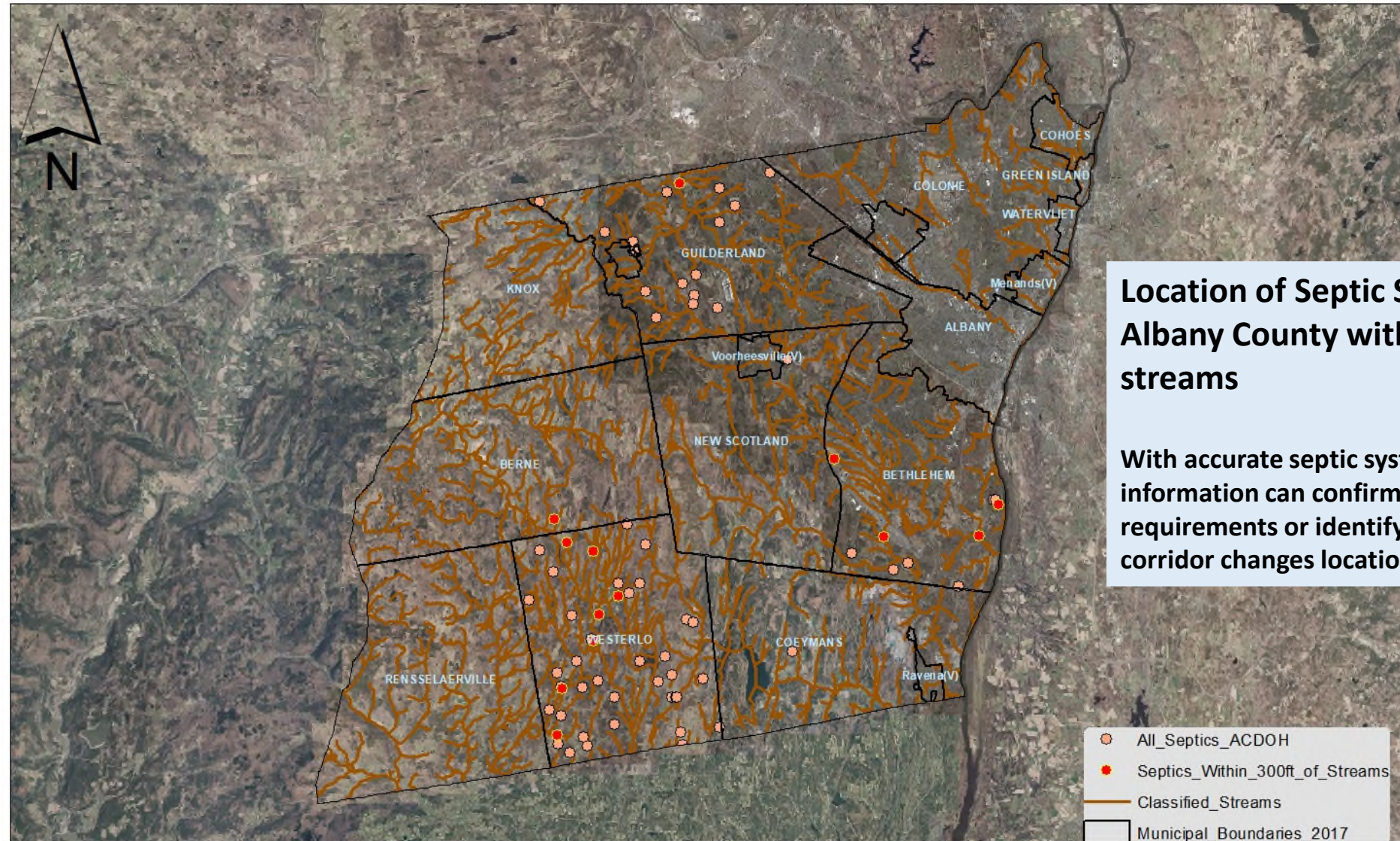
VI. Maps

- Based on 75 Request # Folders
- Includes additional data from forms
- Demonstrate multiple ways to look at ACDOH Environmental Health Services data

Septics By Completion Date



Septics Located 300ft of Streams

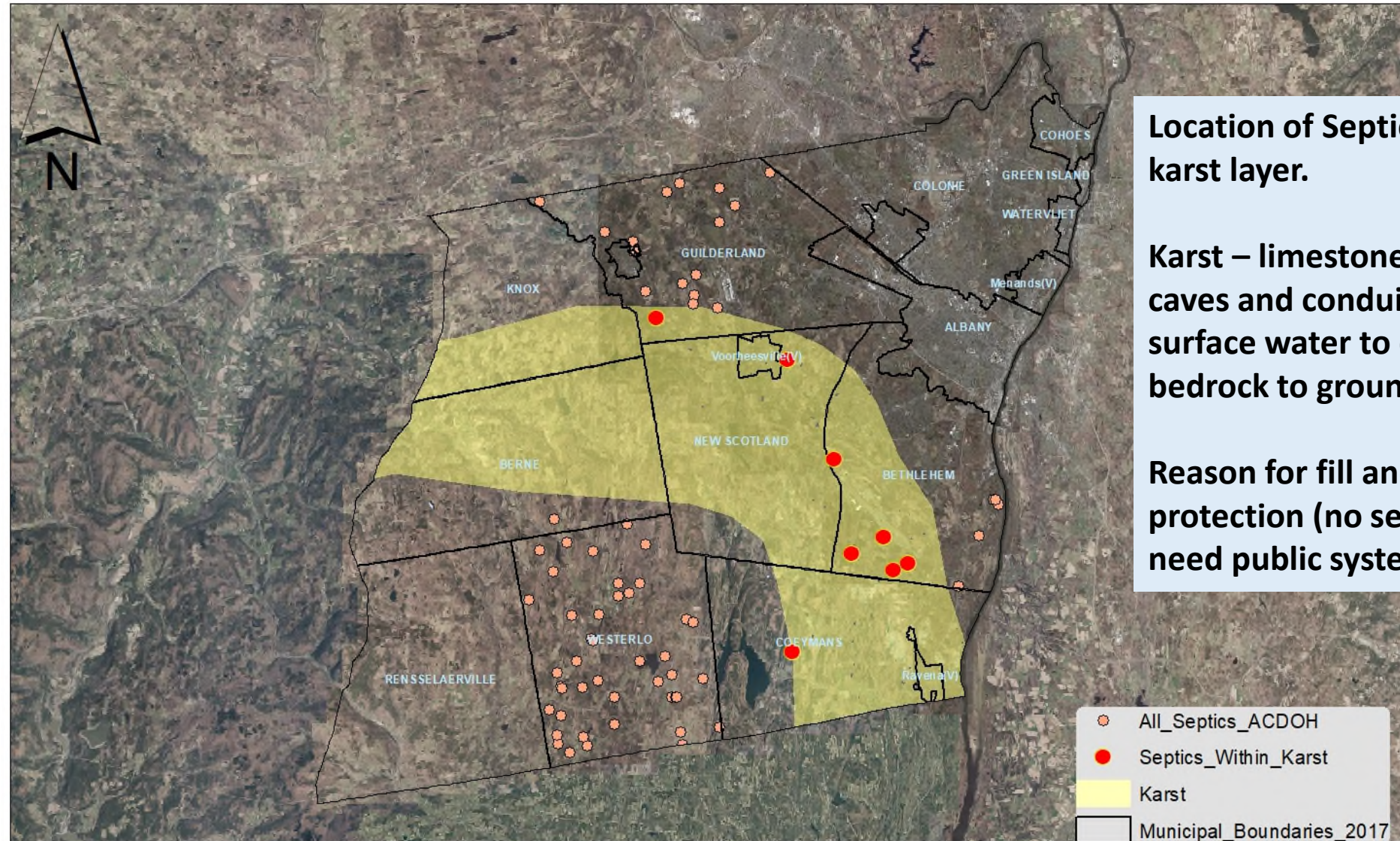


Location of Septic Systems in Albany County within 300ft of streams

With accurate septic system location information can confirm separation requirements or identify issues if the stream corridor changes locations.

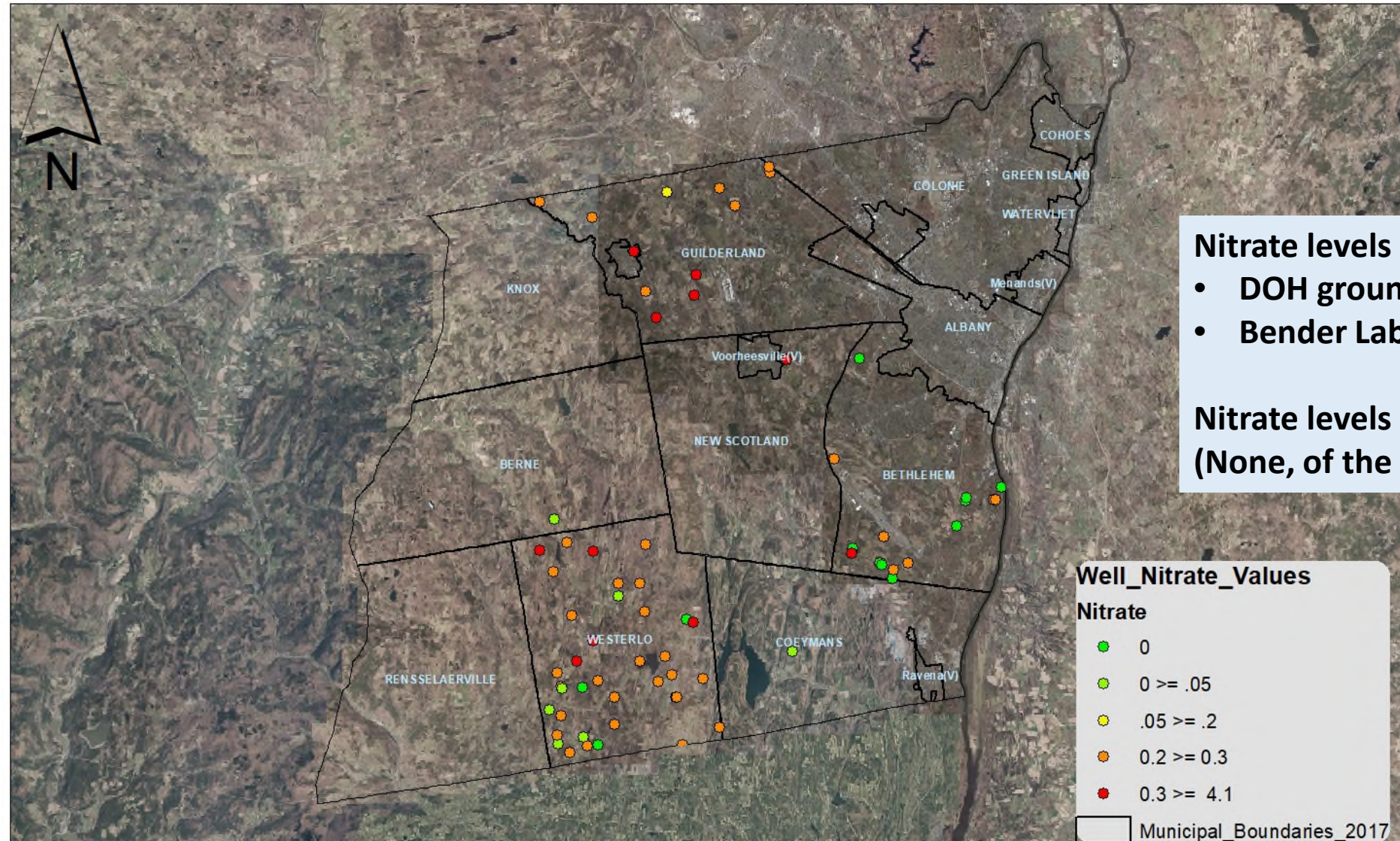
Prepared by
Stormwater Coalition of Albany County Bamidele Akinniyi (Bam)
Date: May 7, 2018
File Name: Proj_Septic&Well_2018

Septics Within Karst Layer



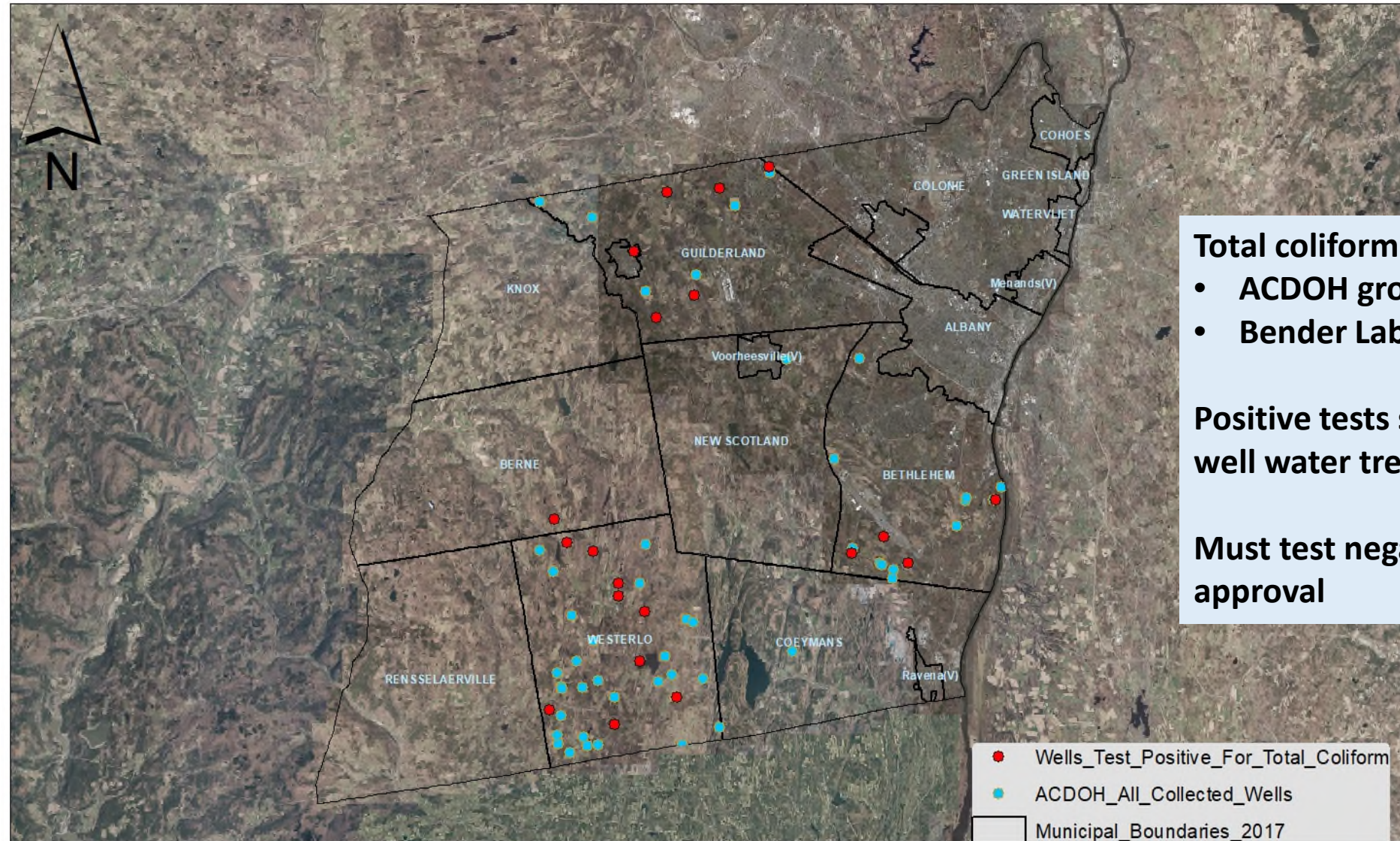
Prepared by
Stormwater Coalition of Albany County Bamidele Akinniye (Bam)
Date: May 7, 2018
File Name: Proj_Septic&Well_2018

Nitrate Values of Wells in Albany County



Prepared by
Stormwater Coalition of Albany County Bamidele Akinniyi (Bam)
Date: May 7, 2018
File Name: Proj_Septic&Well_2018

ACDOH Wells Tested Positive for Total Coliform



Total coliform – Test Positive

- ACDOH ground water well data
- Bender Lab Report

Positive tests show need to have well water treated before use

Must test negative for well approval

Prepared by
Stormwater Coalition of Albany County Bamidele Akinniyi (Bam)
Date: May 7, 2018
File Name: Proj_Septic&Well_2018

VII. Lessons Learned

- **Successes**

- Demonstrated how to digitized water quality relevant data from Albany County Department of Health
- Contributions made by Albany Health staff aided in the success of the project

- **What could have gone better**

- Better understanding of data by Coalition by outset
- More timely direction regarding which folders to review (not Westerlo, more from MS4 permitted municipalities).
- **Limited folders viewed, a lot more data available.**

- **Geographic Information Systems (GIS) Technology**

- If interested in exploring DOH data, then need think about how data stored now. There may be ways to easily adjust data collection to support GIS requirements.

- **Student Perspective**

- Process of development of individual well and septic systems
- Understanding of data and importance of data collection
- Enhanced GIS Skills

Acknowledgments

- Thomas Brady, Assistant Director, Albany County Department of Health, Environmental Health Services
- Damian Jones, Albany County Department of Health, Environmental Services
- Nancy Heinzen, Director, Stormwater Coalition
- Joe Cleveland, Technician Assistant, Stormwater Coalition
- Jared Flagler, Technician Assistant, Stormwater Coalition