

THE WURTSMITH STORY: LOCAL PUBLIC HEALTH'S RESPONSE TO AN UNKNOWN EMERGING CONTAMINANT

PRESENTED BY:

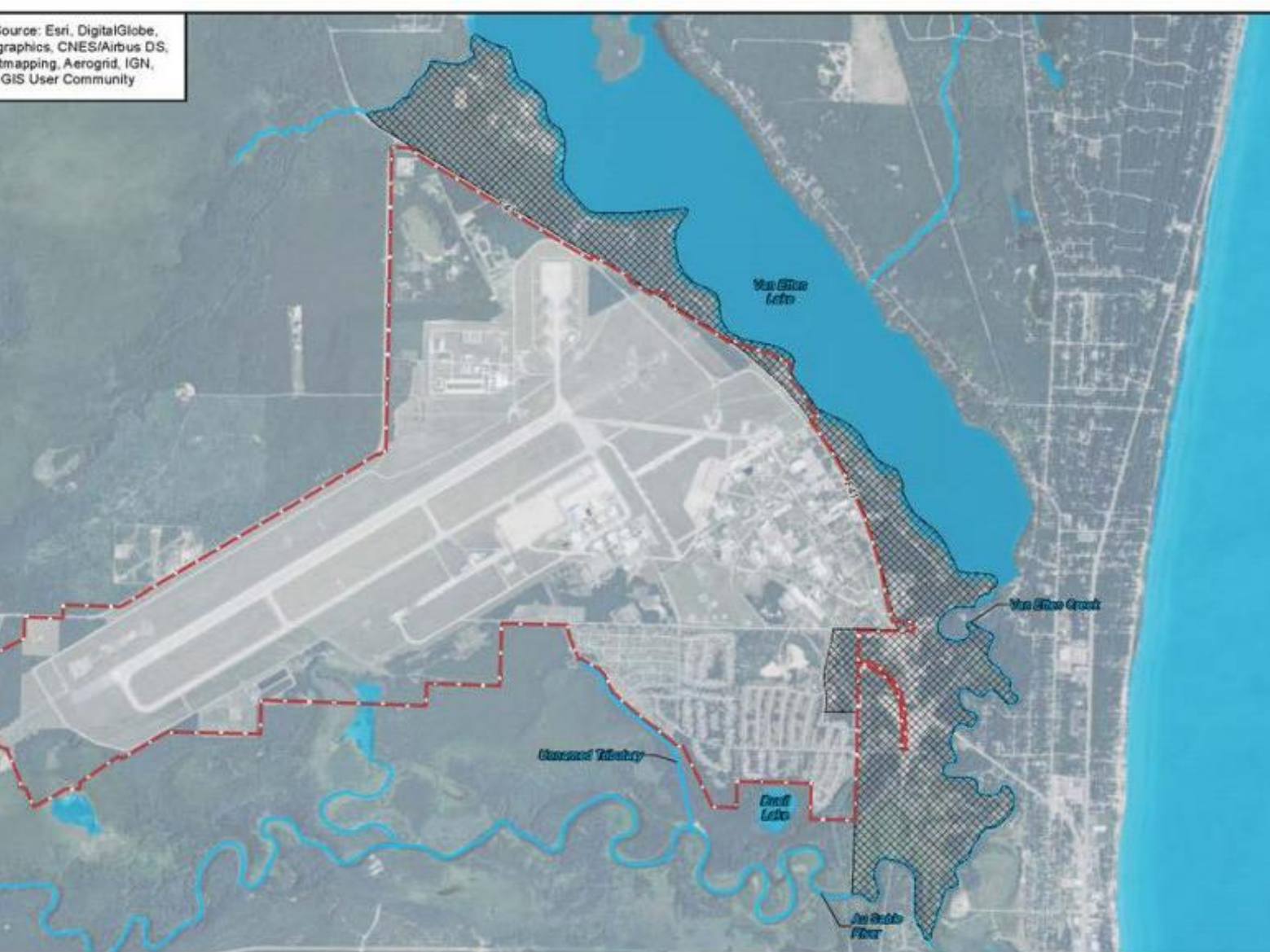
DISTRICT HEALTH DEPARTMENT NO. 2

DENISE BRYAN M.P.A, HEALTH OFFICER

CORI UPPER B.A.A., EMERGENCY PREPAREDNESS COORDINATOR

TRACEY WOOD, M.H.A. – PUBLIC INFORMATION OFFICER





Engineer Center
Hughes Avenue
171, Ste 155
and, Texas 78236



FIGURE 1
Site Layout

Former Wurtsmith Air Force Base, Oscoda, MI

10/27/2015

Potable_Well_Survey_Area_8.5x11LS

PROJ: 775290177

Drawn: BRP

SYMBOL KEY



Well Survey Area Bound



Surface Water



Former Wurtsmith AFB
Installation Boundary

FORMER WURTSMITH AIR FORCE BASE

- LOCATED IN OSCODA - IOSCO COUNTY – LAKE HURON SHORELINE
- OPERATED FROM 1923-1993
- SUPERFUND SITE FOR DEQ
- GROUNDWATER CONTAMINATION RESULTING FROM FIRE FIGHTING FOAM



PFAS 101

- PER AND POLYFLUORINATED ALKYL SUBSTANCES (PFAS)
- USPEA DESIGNATED-NATIONAL EMERGING CONTAMINANT
- PFAS MAKES UP A FAMILY OF OVER 5000 CHEMICALS
- ONES WE KNOW THE MOST ABOUT ARE:
 - PFOA-PERFLUOROOCTANOIC ACID (TEFLON) WAS TO BE PHASED OUT BY 2015
 - PFOS-PERFLUOROOCTANESULFONIC ACID (SCOTCHGARD) DISCONTINUED IN 2002



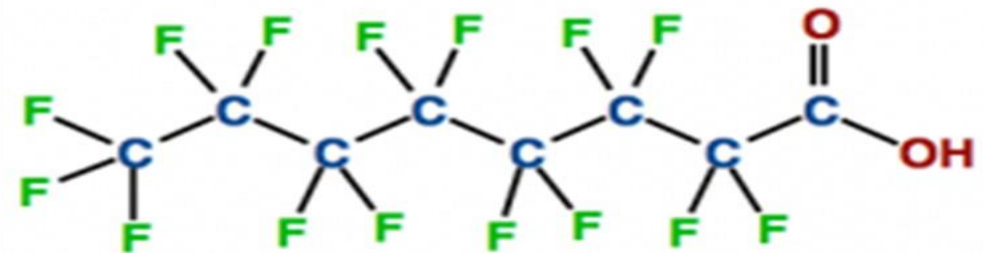
PFAS 101: WHAT IS PFAS

- CHARACTERISTICS:

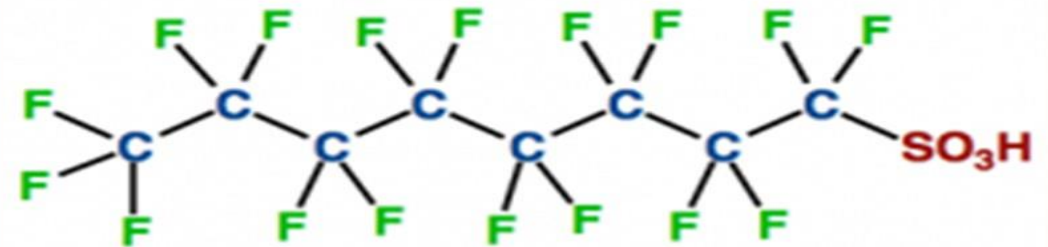
VERY STABLE

BREAK DOWN SLOWLY

EASILY TRANSFERRED TO
GROUND WATER



PFOA - perfluorooctanoic acid



PFOS - perfluorooctanesulfonic acid



PFAS 101: WHERE IS PFAS FOUND?

- NON-STICK COOKWARE AND SMALL ELECTRICAL APPLIANCES
- PAINTS AND AGRICULTURAL COATINGS
- PROTECTIVE HEALTH GARMENTS
- PROTECTIVE FINISHES AND APPAREL AND TEXTILES
- FIRE FIGHTING FOAM
- AEROSPACE MATERIALS HYDRAULIC HOSES, CABLES AND WIRES
- SEMI CONDUCTOR MANUFACTURING
- PAPER PRODUCTS

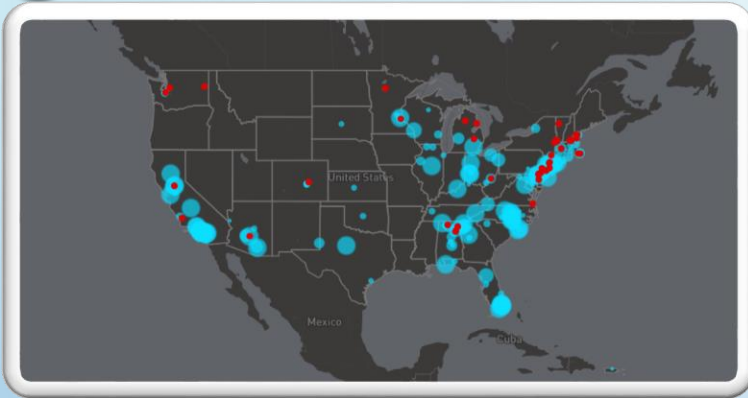


EPIDEMIOLOGICAL STUDIES

**AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY (ATSDR) REPORTED
ON OVER 400 EPI STUDIES DONE ON TOXICITY OF PFASs**

STUDIES SUGGEST LINK BETWEEN PFAS EXPOSURE AND HEALTH OUTCOMES

***HEALTH EFFECTS ASSOCIATED WITH PFAS ARE NOT SPECIFIC AND CAN BE CAUSED
BY MANY OTHER FACTORS***



ANIMAL STUDIES REVEAL:

LIVER DAMAGE

- ANIMALS: DECREASE IN SERUM LIPID LEVELS

IMMUNE EFFECTS

- SUGGEST DECREASED VACCINATION EFFICACY

REPRODUCTIVE TOXICITY

- DECREASE IN MAMMARY GLAND DEVELOPMENT, DID NOT AFFECT LACTATION

DEVELOPMENTAL TOXICITY



HUMAN STUDIES: C8 HEALTH PROJECT

PFOA CONTAMINATION FROM 1950-2002 NEAR

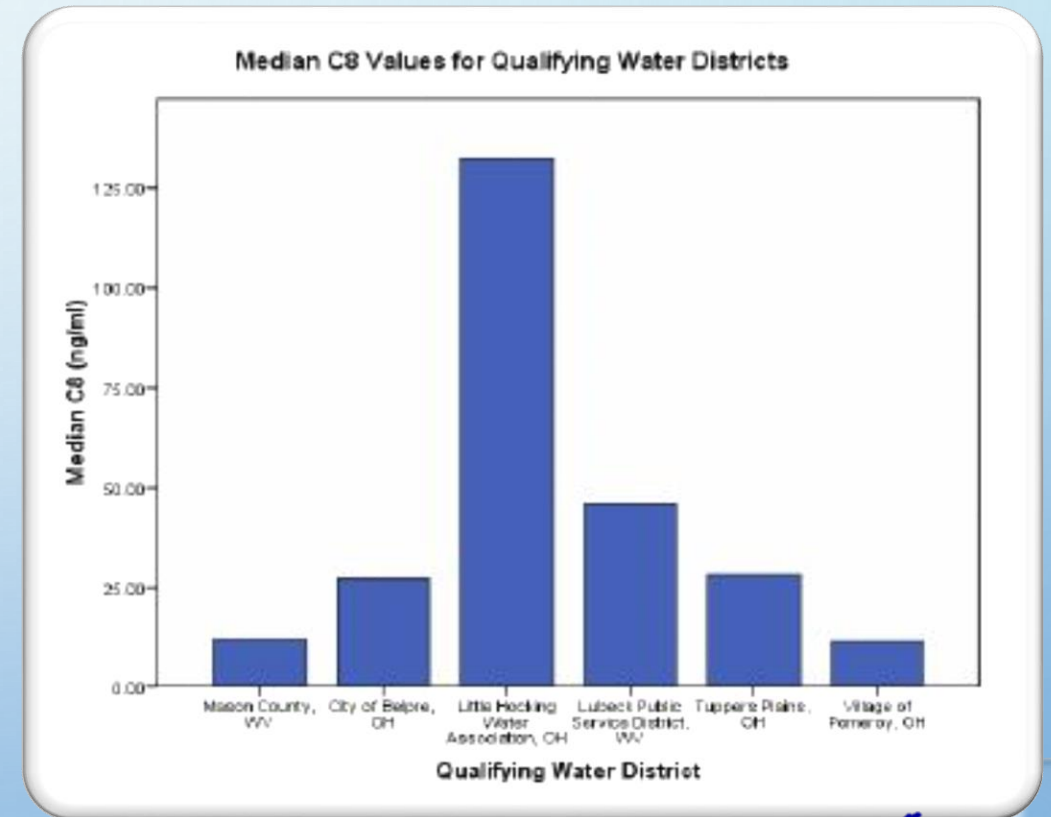
PARKERSBURG, WEST VIRGINIA FROM DUPONT

69,030 PERSONS 18 YEARS OF AGE OR OLDER

FOUND PROBABLE LINKS BETWEEN ELEVATED PFOA BLOOD LEVELS AND

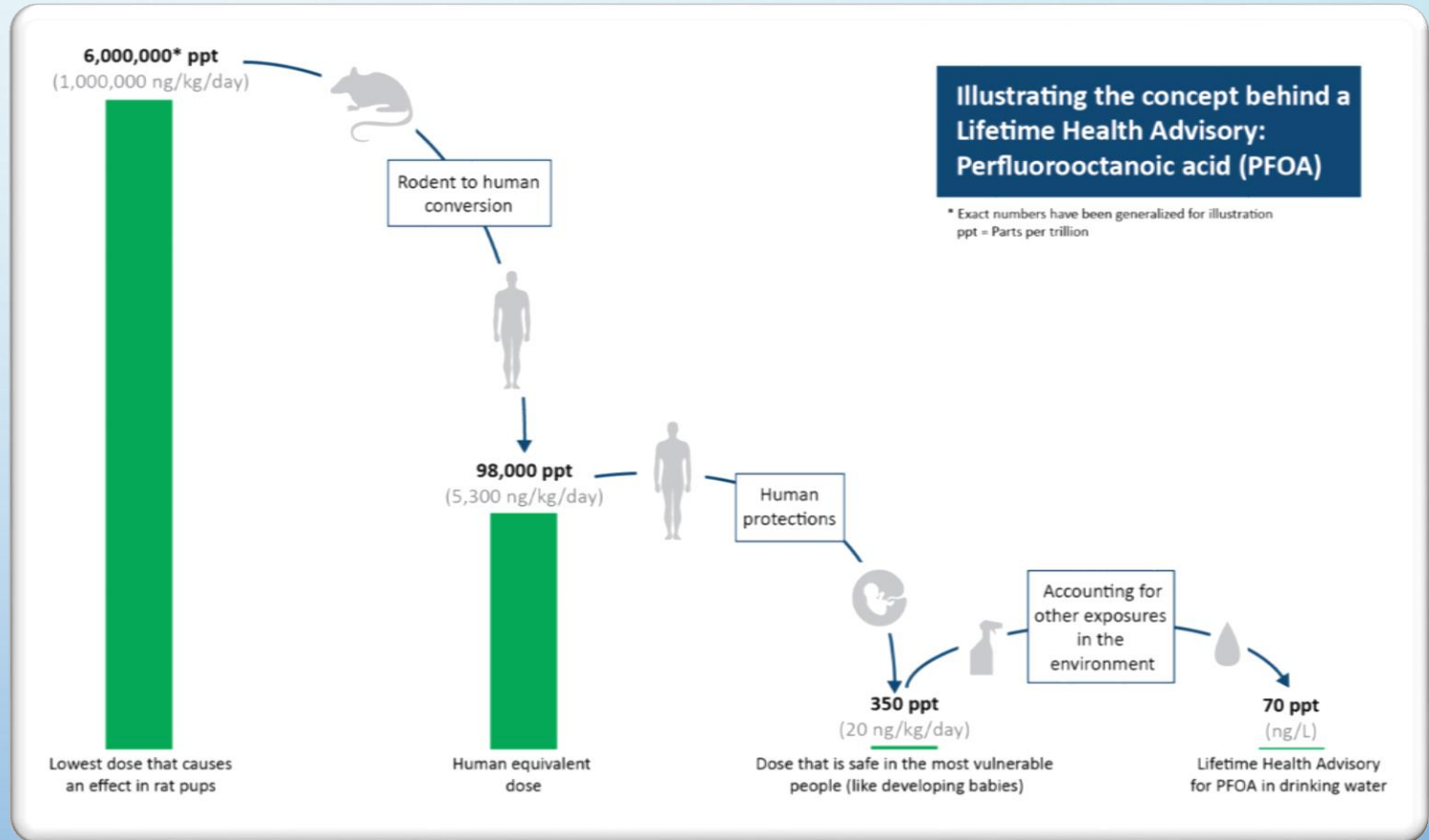
- ULCERATIVE COLITIS
- HIGH CHOLESTEROL
- THYROID FUNCTION
- TESTICULAR CANCER
- KIDNEY CANCER
- PREECLAMPSIA

RESIDENTS IN THE AREA SHOWED A 500 PERCENT HIGHER PFOA-CONCENTRATIONS IN BLOOD COMPARED TO U.S. POPULATION



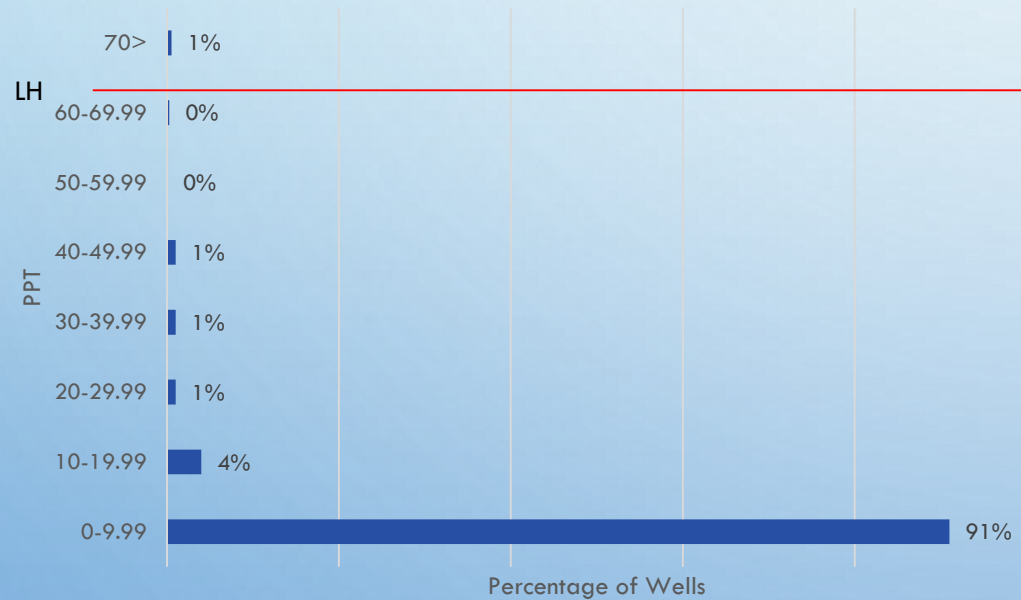
ENVIRONMENTAL PROTECTION AGENCY'S "LIFETIME HEALTH ADVISORY" LEVEL

- BASED ON REFERENCE DOSES (RFD) CALCULATED FROM DEVELOPMENTAL TOXICITY STUDY IN RATS
- LIFETIME HEALTH ADVISORY
 - PFOA + PFOS = 70 PPT
 - SHORT-TERM AND LONG-TERM EXPOSURE
- PROTECTIVE OF UNBORN BABY AGAINST DEVELOPMENTAL EFFECTS
- PROTECTIVE OF ALL AGAINST CANCER AND NONCANCER HEALTH EFFECTS

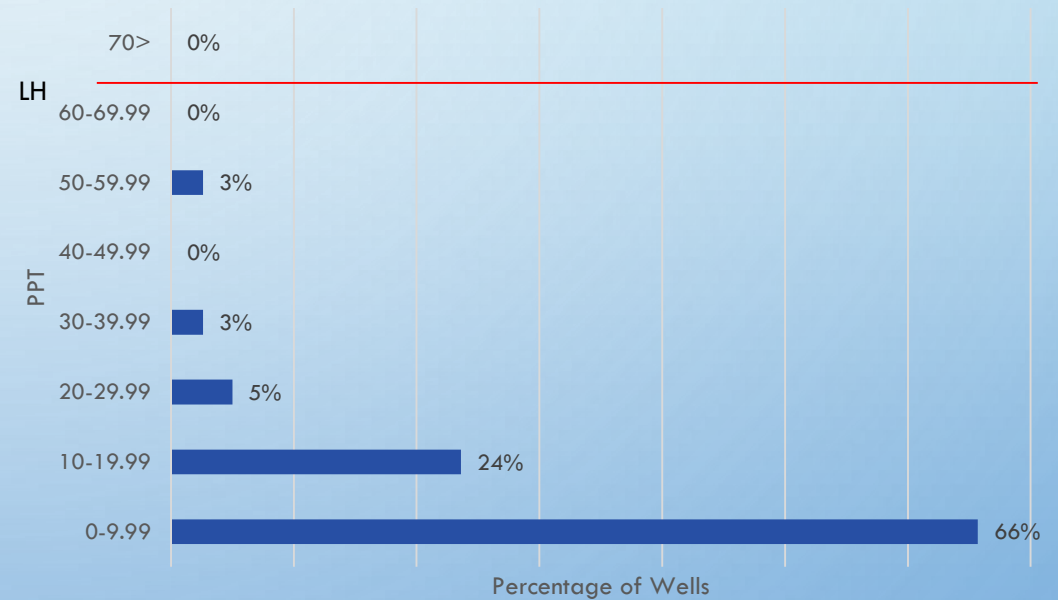


DATA : PFOS AND PFOA

2016-2017 Test Results




2018 Test Results




PROLOGUE: 1ST WURTSMITH PFAS ADVISORY

- IN 2011 FISH SAMPLES WERE COLLECTED FROM CLARK'S MARSH NEAR THE FORMER FIRE TRAINING AREA AT THE BASE.
- IN MAY OF 2012 MDHHS ISSUED A "DO NOT EAT THE FISH" ADVISORY FOR CLARK'S MARSH.
- PFAS CONTAMINATION EXCEEDED CONSUMPTION RECOMMENDATIONS FOR PFOS

Oscoda County Guidelines



Why aren't some fish safe to eat?
The fish from Clark's Marsh have high amounts of PFOS in them and shouldn't be eaten at all.
Some fish from the lower Au Sable River, Lake Huron and Van Etten Lake have PFOS, PCBs, dioxins, and mercury. The guidelines in this brochure describe how often it's safe to eat them.



Van Etten Lake

Type of Fish	Chemical of Concern	Size of Fish	MI Servings per Month
Bluegill	Mercury	Any Size	8
Smallmouth Bass	Mercury	Any Size	6 Per Year
Yellow Perch	Mercury	Any Size	6 Per Year
White Perch	Mercury	Any Size	8

Au Sable River
(between Mio Dam in Oscoda Co. and Foote Dam)

Type of Fish	Chemical of Concern	Size of Fish	MI Servings per Month
Smallmouth Bass	Mercury	Under 30"	1
	Mercury	Over 30"	6 per Year
Yellow Perch	Mercury	Any Size	1

Clark's Marsh

Type of Fish	Chemical of Concern	Size of Fish	MI Servings per Month
All Species	PFOS	Any Size	Do Not Eat

Floyd Lake

Type of Fish	Chemical of Concern	Size of Fish	MI Servings per Month
Largemouth Bass	Mercury	Under 18"	1
		Over 18"	6 Per Year
Smallmouth Bass	Mercury	Under 18"	1
		Over 18"	6 Per Year

Tawas Lake

Type of Fish	Chemical of Concern	Size of Fish	MI Servings per Month
Black Crappie	Mercury	Any Size	2
White Crappie	Mercury	Any Size	2

Tawas River

Type of Fish	Chemical of Concern	Size of Fish	MI Servings per Month
Suckers	Mercury	Any Size	Do Not Eat

CHAPTER 1:

THE ADVISORIES



CHAPTER 1: THE ADVISORIES

INITIAL ADVISORY

- DECEMBER OF 2015 MDHHS/MDEQ CONDUCTED TESTS OF GROUND WATER WELLS NEAR THE AIR FORCE BASE.
- BASED ON DISCUSSION OF TEST RESULTS WITH MDHHS TOXICOLOGISTS THE DHD2 HEALTH OFFICER ISSUED A HEALTH ADVISORY ON FEB 26, 2016
- ADVISORY WAS TO SEEK ALTERNATE WATER.
- AREA HAS SINCE EXPANDED TWICE AS A RESULT OF TESTING IN THE AREA.



DISTRICT HEALTH DEPARTMENT NO.2

Alcona County 311 Lake St. P.O. Box 218 Harrisville, MI 48740 Tel: 989-724-6757	Iosco County 420 W. Lake Street Tawas City, MI 48764 Tel: 989-362-6183	Ogemaw County 630 Progress St. West Branch, MI 48661 Tel: 989-345-5020	Oscoda County 393 S. Mt. Tom Road Mio, MI 48647 Tel: 989-826-3970
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HEALTH ADVISORY

February 26, 2016

RE: PFC's Detected in Ground Water

Dear Homeowner,

As a precautionary measure, District Health Department No. 2 is issuing a Health Advisory to specific residents who received recent water test results from the Michigan Department of Environmental Quality (MDEQ). Based on the results detecting PFC's in your well groundwater, and the limited scientific data available on PFC's, District Health Department No. 2 is advising you to seek an alternate water supply for drinking and the preparation of food.

The Michigan Department of Health and Human Services (MDHHS) and District Health Department No. 2 advise as a precautionary measure that residents do not consume the water in any way.

If you have questions regarding this advisory, please contact Christina Bush, MDHHS Toxicologist at 1-800-648-6942 or via email at bushc6@michigan.gov. You may also contact District Health Department No. 2 at 1-800-504-2650.

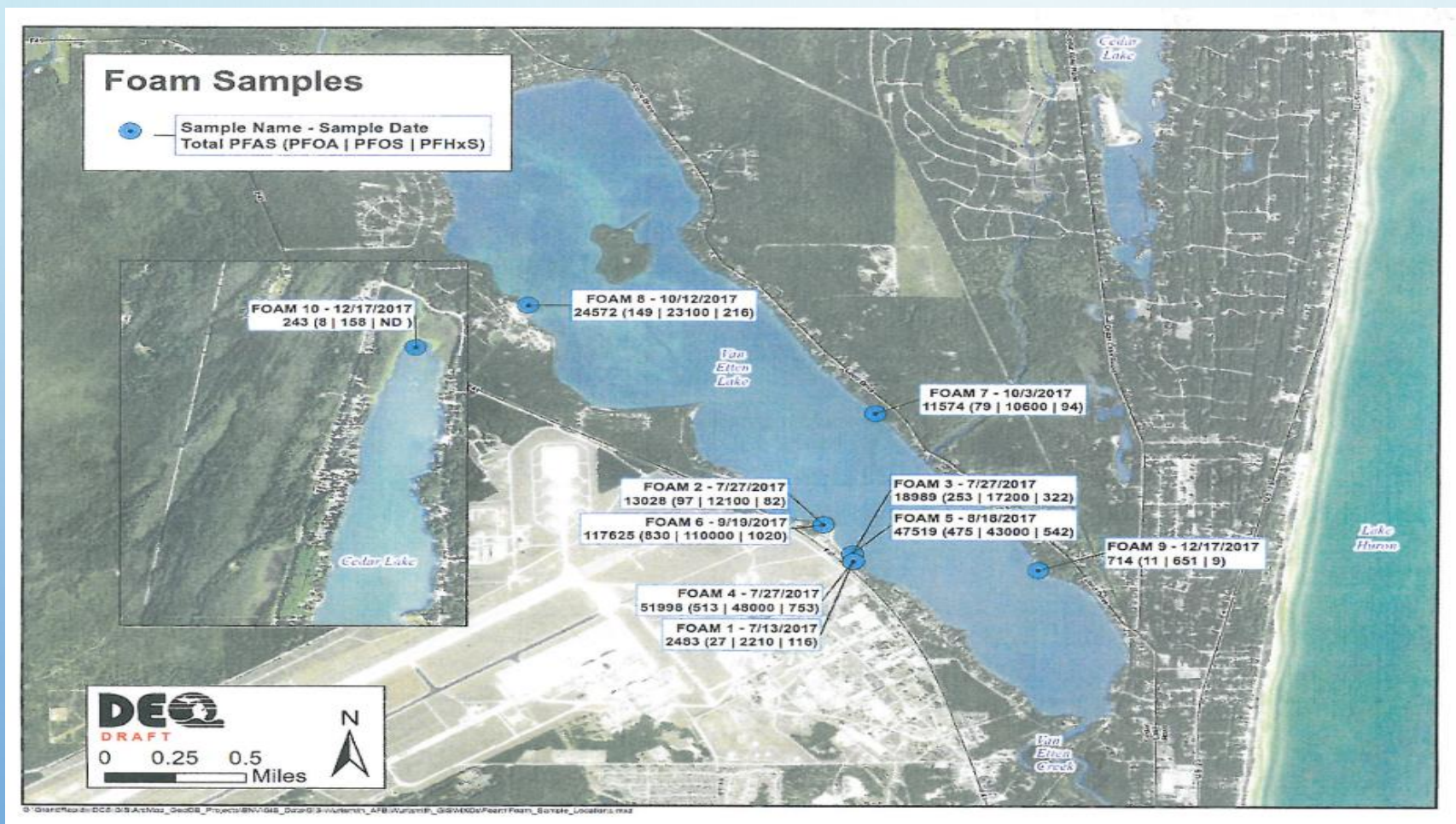
This advisory is issued by:
Denise M. Bryan, M. P. A.
Health Officer
District Health Department No. 2

attachment



CHAPTER 1: THE ADVISORIES

FOAM



TIMELINE

May 2012 – Do Not Eat the Fish Advisory for Clark's Marsh

January 2015 – Original Residential Wells Tested

February 2016 – Original Health Advisory Issued – Approx. 24 properties

June 2016 – Alternate Water Funding

June 2016 – Affected Area Expansion – Approx. 50 properties

September 2016 – Affected Area Expansion Approx. 300-400 properties

September 2016 – Restoration Advisory Board (RAB)

January 2017 – SB 950 Signed

June/July 2017 – Door to Door Campaign

September 2017 – Foam Advisory

January 2018 – Michigan LHA 70 ppt

June 2018 – Brinks Bill Introduced

June 2018 – ATSDR Study Released

August 2018 – Colbath and Pinecrest Area Expansion



Collaborative Agencies

Media

MPART

Michigan Department of Environmental Quality (MDEQ)

Michigan Department of Health and Human Services (MDHHS)

Testing/Monitoring Wells

Toxicology/Resource Advocacy

District Health Department No. 2 (DHD2)

Public Health Advisory/Coordination of Alternate Water Supply

Veterans

Wurtsmith Air Force Base/V.A.

United States Air Force

Elected Officials

Source of Contamination/Restoration Advisory Board

Local/State/Federal Representation

DNR/MDARD

Oscoda Township

Animals: Domestic and Wildlife

Municipal Water

Board of Health

Attorneys/Legal

Affected Residents

FUNDING

- FISCAL YEAR 2016
 - DHD2 RECEIVED \$100,000 FOR PROGRAMMATIC WORK AND AN ADDITIONAL \$100,000 WAS EARMARKED TO ASSIST RESIDENTS WHO QUALIFY, WITH MUNICIPAL HOOKUP
- FISCAL YEAR 2017
 - DHD2 RECEIVED \$250,000 FOR PROGRAMMATIC WORK AND TO SUPPLY AFFECTED RESIDENTS WITH AN ALTERNATE WATER SUPPLY
- FISCAL YEAR 2018
 - DHD2 RECEIVED \$150,000 IN FUNDING TO CONTINUE PROGRAMMATIC WORK AND TO CONTINUE SUPPLYING ALTERNATE WATER SOURCES TO RESIDENTS IN THE EXPANDING AFFECTED AREA



CHAPTER 2:

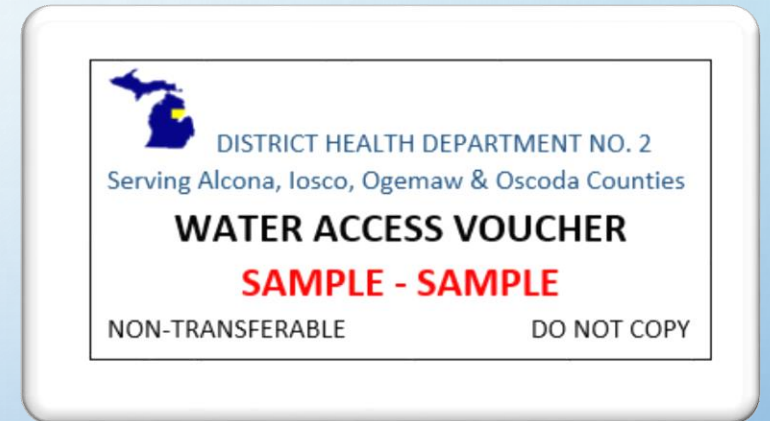
ALTERNATE WATER SUPPLY OPTIONS



CHAPTER 2: ALTERNATE WATER SUPPLY OPTIONS

WAIVERS

- AVAILABLE TO THE INITIAL 24 PROPERTIES WHO WERE ISSUED THE ADVISORY
- NO FUNDING AVAILABLE AT THE TIME OF INITIAL ADVISORY
- WAIVERS ALLOWED PROPERTY OWNERS TO PICK UP ONE 5-GALLON JUG AND FILL AT MUNICIPAL LOCATIONS ARRANGED WITH OSCODA TOWNSHIP
- NO LIMIT ON THE AMOUNT OF WATER A PROPERTY COULD GET
- VOUCHER WAS CODED IN A WAY SO WE COULD TRACK PROPERTIES AND THEIR WATER FILLS



CHAPTER 2: ALTERNATE WATER SUPPLY OPTIONS

FILTERS

CULLIGAN REVERSE OSMOSIS FILTER

- INITIAL FILTER SYSTEM OFFERED TO PROPERTY OWNERS
- PROPERTIES WOULD GET UP TO \$900 FOR INSTALLATION
- NEEDS FILTERS REPLACED EVERY YEAR
- NSF P473 CERTIFIED



AQUASANA AQ5300+

- FILTER SYSTEM WE OFFER NOW
- PROPERTY OWNERS GET INSTALLATION AND EXTRA SET OF FILTERS
- FILTERS NEED TO BE REPLACED ABOUT EVERY 6 MONTHS OR 800 GALLONS OF WATER USED
- NSF P473 CERTIFIED



CHAPTER 2: ALTERNATE WATER SUPPLY OPTIONS

IN-HOME WATER COOLER

- FACILITATED THROUGH CULLIGAN
- PROPERTY OWNERS COULD GET WATER COOLER AND THEN \$900 PLACED ON ACCOUNT
- PROPERTY OWNER RESPONSIBLE FOR SETTING UP DELIVERY SCHEDULE
- ONCE FUNDS ON ACCOUNT RAN OUT, A WATER EXTENSION OF \$900 WAS GRANTED
- THIS OPTION IS NO LONGER BEING OFFERED



CHAPTER 2: ALTERNATE WATER SUPPLY OPTIONS

MUNICIPAL HOOK-UP

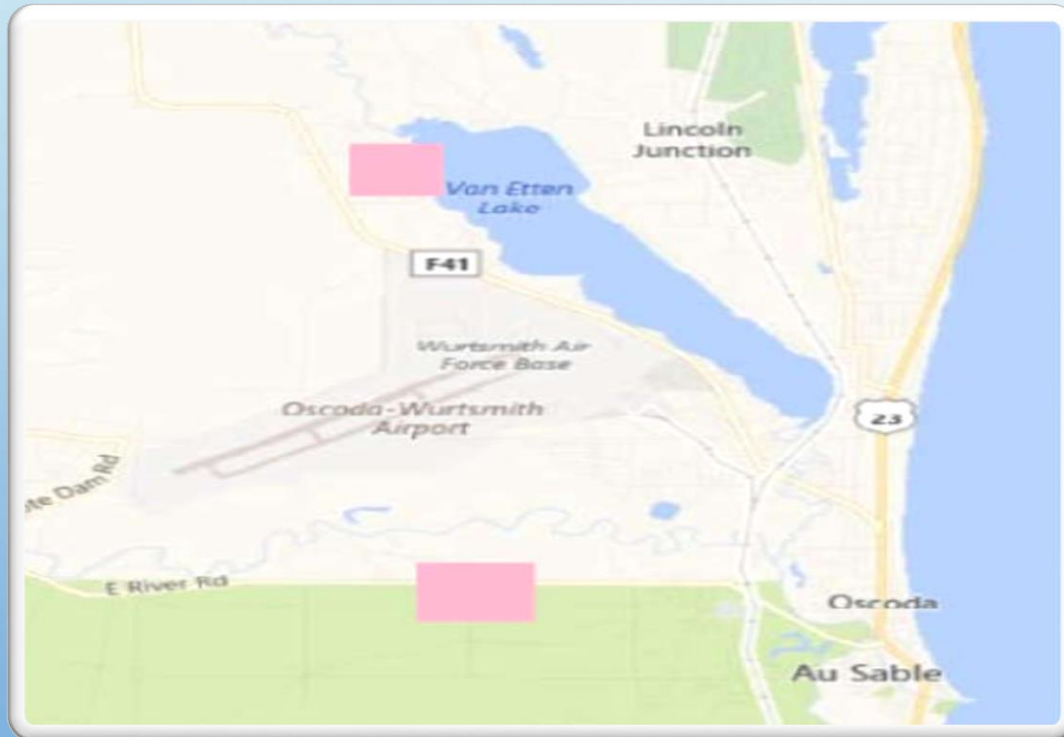


- AVAILABLE TO PROPERTY OWNERS WHO HAD PRE-EXISTING WATER LINES ON THEIR STREET
- ELIGIBLE FOR UP TO \$1,100 FOR THE TAP FEE TO HOOK TO MUNICIPAL LINE
- PROPERTY OWNER RESPONSIBLE FOR THE COST OF RUNNING PIPE FROM MUNICIPAL LINE TO HOUSE



CHAPTER 2: ALTERNATE WATER SUPPLY OPTIONS

ELIGIBILITY



MOST RECENT EXPANSION

- IN AUGUST OF 2018 ADVISORY WAS EXPANDED
- COLBATH RD AREA, DUE TO FOREST FIRE ASSISTED BY THE AIR FORCE
- OSCODA SCHOOLS/PINECREST AREA, FIRE EXTINGUISHED WITH AFFF
- POSITIVE WELL TEST FOR PFAS



CHAPTER 2: ALTERNATE WATER SUPPLY OPTIONS

PROCESS TO OBTAIN

- PROPERTY OWNER CALLS HD WHO THEN VERIFIES ELIGIBILITY – CONTACT FORM COMPLETED
- IF ELIGIBLE, PACKET OF INFORMATION SENT TO PROPERTY OWNER
 - PACKET CONTAINS: LETTER, “AUR” FACT SHEETS ON SYSTEM AND PFAS, ADDITIONAL INFORMATION SHEETS
- “AUR” NEEDS TO BE SIGNED AND RETURNED TO HD.
- PROPERTY AVAILABLE FOR ONLY ONE ALTERNATE WATER SUPPLY.
- ONCE “AUR” RECEIVED AND VERIFIED, LHD SENDS REQUEST TO APPROPRIATE VENDOR.
- VENDOR AND PROPERTY OWNER ARRANGE INSTALL/SET UP TIME



CHAPTER 2: ALTERNATE WATER SUPPLY OPTIONS

TRACKING

ELECTRONIC TRACKING

AutoSave (Off) Contact Database Sample.xlsx - Read-Only - Excel

File Home Insert Page Layout Formulas Data Review View Help Foxit PDF Tell me what you want to do

Clipboard Font Alignment Number Styles Cells

FS 989-567-4321

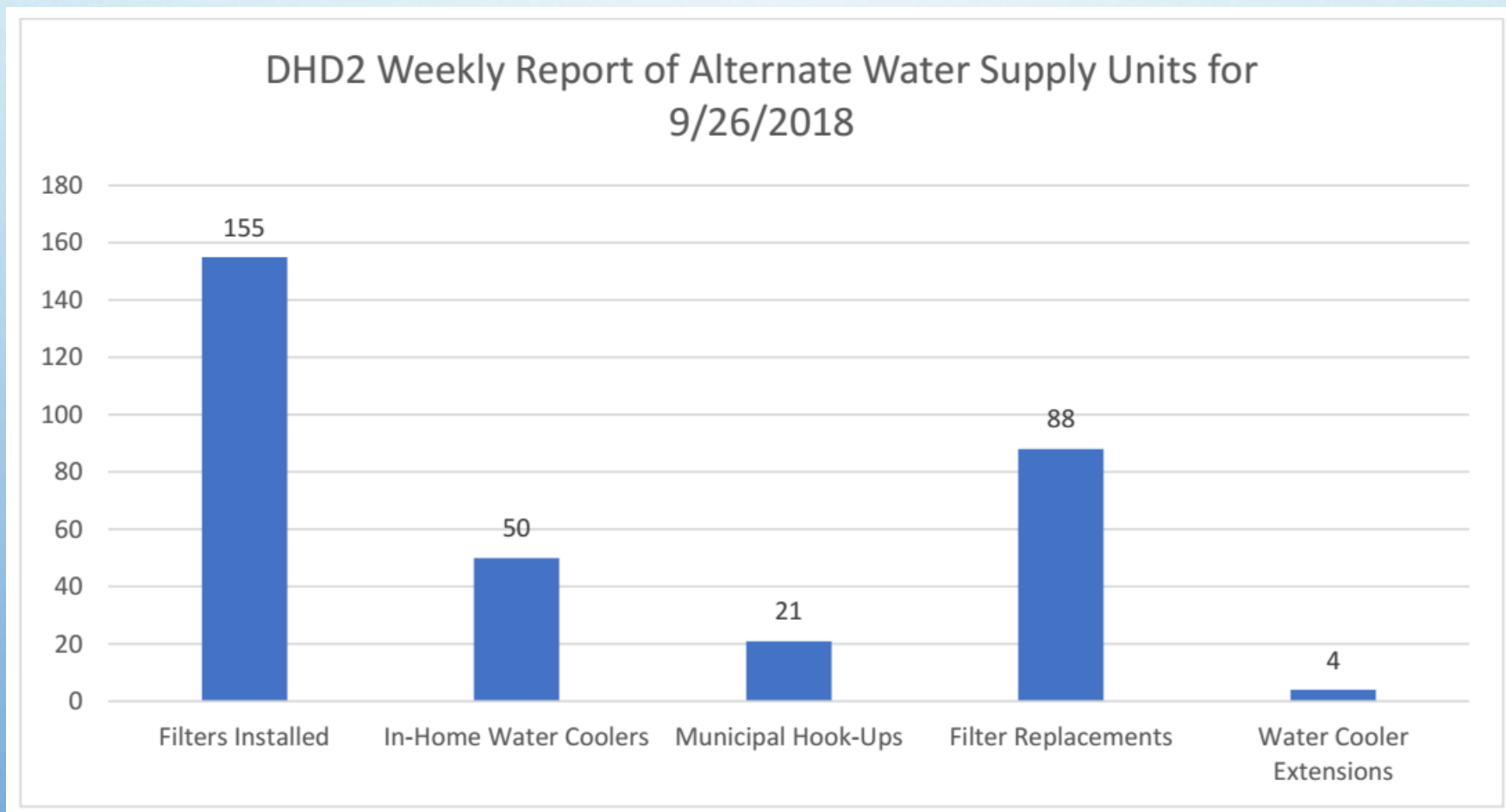
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
		Address	Street	Property Owner's Name(s)	Owner's Mailing Address	Owner's Phone #	Rental?	Eligibility	Alternate Water Type	Installed	Vendor	Comments	Replacement/Extension Letter Date Sent	F/C or Ext	
1															
2		456	Birch Street	Jack and Diane Doe	same as well	989-345-6789	n	results	C	8/27/2018	C				
3		123	Elm Drive	John and Jane Doe	P.O. Box 123 Oscoda MI 48750	989-867-5309	n	area	FS	8/14/2018	SF				
4		456	Elm Drive	Will and Jada Doe	same as well	989-810-5698					SF				
5		1011	Oak Street	Tom and Rita Doe	same as well	989-567-4321	n	area			N/A	property owner only uses well for irrigation - ask not to be contacted.			
6		789	Willow Street	Harry and Meghan Doe	same as well	989-739-1234	n	area	M		Twp				
7															
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18															

PAPER TRACKING



CHAPTER 2: ALTERNATE WATER SUPPLY OPTIONS

TOTALS – AS OF SEPTEMBER 26, 2018



CHAPTER 3:

COMMUNICATION

*“THE SINGLE BIGGEST PROBLEM IN COMMUNICATION IS THE ILLUSION THAT IT HAS
TAKEN PLACE”
GEORGE BERNARD SHAW*



CHAPTER 3: COMMUNICATION

LETTERS AND PHONE CALLS

LETTERS

- USED IN PLACES WHERE PHONE NUMBERS MAY HAVE BEEN MISSING
- HAVE SENT CERTIFIED AND REGULAR
- NOT USED AS REGULARLY AS PHONE CALLS OR OTHER METHODS
- GOOD WAY TO DOCUMENT

PHONE CALLS

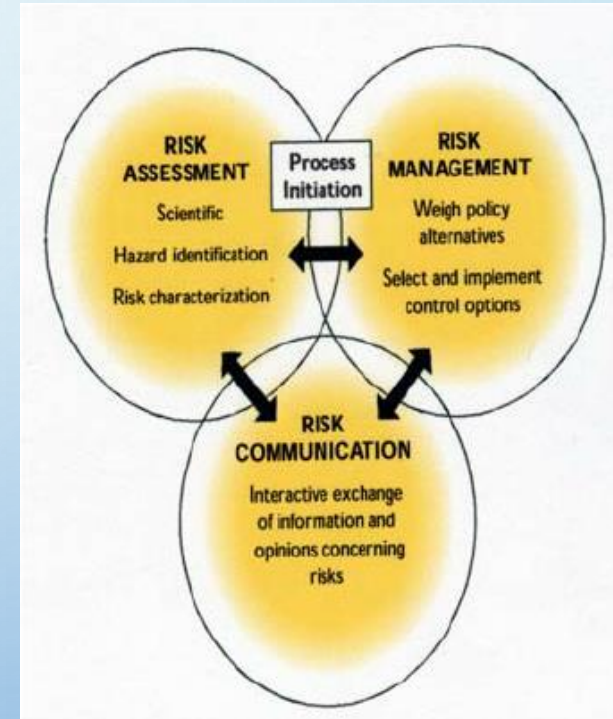
- OUR BEST RESOURCES FOR TWO-WAY COMMUNICATION
- ONE PHONE NUMBER ACTS AS MAIN NUMBER FOR INDIVIDUALS TO CALL
- THREE STAFF WHO ARE TRAINED TO ANSWER QUESTIONS/DETERMINE ELIGIBILITY/TAKE TESTING REQUESTS
- STAFF HAVE FIELDDED HUNDRED OF PHONE CALLS SINCE INITIAL ADVISORY WAS ISSUED
- FIRST METHOD OF COMMUNICATION AFTER THE ADVISORY WAS ISSUES TO AFFECTED PROPERTY OWNERS



COMMUNICATION

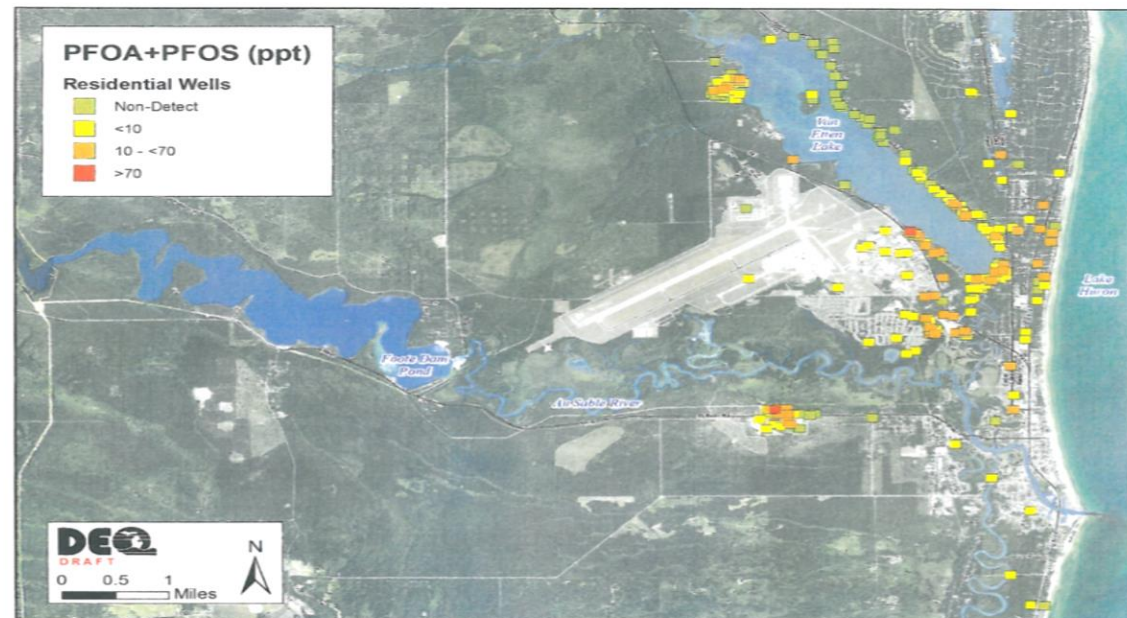
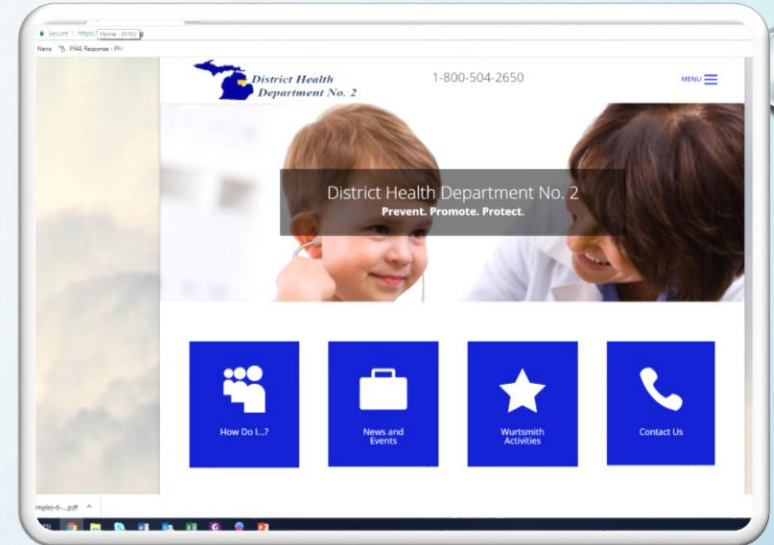
PRESS RELEASES

- MORE GENERAL AND WIDE REACHING
- USE TO ANNOUNCE EVENTS OR SIGNIFICANT CHANGES IN THE SITUATION
- SENT TO TWO LOCAL PAPERS IN THE AREA



CHAPTER 3: COMMUNICATION WEBSITE

- WWW.DHD2.ORG/WURTSMITHACTIVITIES
- BEST SOURCE OF CONSTANT INFORMATION/COMMUNICATION
- CAPACITY TO UPDATE IN HOUSE
- INFORMATION ON:
 - MAPS
 - HAPPENINGS
 - PRESS RELEASES
 - UPCOMING EVENTS
 - CORRESPONDENCE



CHAPTER 3: COMMUNICATION

DOOR TO DOOR

- CONDUCTED OVER THE SPAN OF 5 WEEKS IN JUNE/JULY OF 2017 – 281 PROPERTIES
- OVER 200 PROPERTIES WERE VISITED DURING THE CAMPAIGN
- PACKETS OF INFORMATION WERE CREATED TO LEAVE WITH PROPERTY OWNERS OR IF NO ONE WAS HOME
- PROCEDURES REGARDING SAFETY AND PROTOCOL WERE DEVELOPED.
- USUALLY DONE IN TEAMS OF TWO WITH A CREW OF FOUR STAFF IN THE AREA AT A TIME
- ON JULY 7 – SENATOR STAMAS AND STAFF FROM MDHHS JOINED DHD2 STAFF TO GO DOOR-TO DOOR
- TWO PURPOSES – TO SHARE INFORMATION WITH PROPERTY OWNERS AND ALLOWED STAFF TO GATHER INFORMATION ON PROPERTIES



CHAPTER 3: COMMUNICATION

DOOR TO DOOR



CHAPTER 3: COMMUNICATION

TOWN HALL MEETINGS/RAB

- SIX TOWN HALL MEETINGS HAVE TAKEN PLACE
 - TWO HOUR OPEN HOUSE WHICH ALLOWS FOR ATTENDEES TO SPEAK DIRECTLY TO AGENCIES IN ONE-ON-ONE CONVERSATIONS
 - TWO HOUR FORMAL MEETING WHERE RESPONDING AGENCIES PROVIDE UPDATES
 - QUESTION AND ANSWER SESSION AT THE CONCLUSION
- RESTORATION ADVISORY BOARD (RAB)



CHAPTER 4:

INTERNAL OPERATIONS



CHAPTER 4: INTERNAL OPERATIONS

WATCH MEETINGS: WEAPONS OF MASS DESTRUCTION & THREATS TO COMMUNITY HEALTH

- CALLED BY THE HEALTH OFFICER TO ADDRESS URGENT MATTERS OF PUBLIC HEALTH AND SAFETY
- HEALTH OFFICER SELECTS STAFF THAT ARE APPROPRIATE FOR THE RESPONSE EFFORT.
- COMMON ATTENDEES: EPC, PIO, COMMUNITY HEALTH DIRECTORS, EH DIRECTOR.
- MEETING HELD AS NEEDED.
- DISCUSSED: PREP FOR TOWNHALLS, REVIEW OF PUBLIC INFO, RESPONSE STRATEGIES, PUBLIC RELATIONS, PARTNERS RESPONSE.



CHAPTER 4: INTERNAL OPERATIONS

CONFIDENTIALITY

- DHD2 HAD TREATED INDIVIDUAL STATUS OF RESIDENCES AS CONFIDENTIAL. INCLUDING ADDRESSES, NAMES AND TEST RESULTS.
- RESTRICTED ACCESS TO INFORMATION ABOUT RESIDENCES IN OUR OFFICE AND ON OUR COMPUTER NETWORK.
- INCLUDE IN AGREEMENTS WITH VENDORS AND INSTALLERS THAT ALL INFORMATION IS CONFIDENTIAL.



EPILOGUE



EPILOGUE

LESSONS LEARNED

- TRAINING ON THE SPECTRUM OF PHONE CALLS
- SCOPE OF CONCERN IN RESIDENTS
- ADVOCACY GROUPS
- POLITICS
- IMPACT TO LPH STAFF TIME AND THE INVESTIGATION CONTINUED TO QUICKLY GROW

NEXT STEPS

- CONTINUE ADVOCACY EFFORTS
- PURSUE POSSIBLE EPI STUDIES
- MONITOR AND PREPARE FOR POSSIBLE IMPLEMENTATION OF NEW DISCOVERIES



QUESTIONS?

CONTACT INFORMATION

DENISE BRYAN

HEALTH OFFICER

989-343-1800

DBRYAN@DHD2.ORG

CORI UPPER

EMERGENCY PREPAREDNESS COORDINATOR

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TRACEY WOOD

PUBLIC INFORMATION OFFICER

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THANK YOU!



CREDITS AND ACKNOWLEDGMENTS

- PFAS BASICS PRESENTATION: WILLIAM FARRELL TOXICOLOGIST TAR
- [HTTPS://WWW.EWG.ORG/INTERACTIVE-MAPS/2017_PFA/INDEX.PHP#.W6J5USHKIM8](https://www.ewg.org/interactive-maps/2017_pfa/index.php#.W6J5USHKIM8)
- [HTTPS://WWW.ATSDR.CDC.GOV/PFAS/INDEX.HTML](https://www.atsdr.cdc.gov/pfas/index.html)
- [HTTPS://WWW.DHD2.ORG/WURTSMITH-ACTIVITIES](https://www.dhd2.org/wurtsmith-activities)
- [HTTPS://WWW.MICHIGAN.GOV/PFASRESPONSE/0,9038,7-365-86511_82704_83952---_00.HTML](https://www.michigan.gov/pfasresponse/0,9038,7-365-86511_82704_83952---_00.html)

