



Marathon 4 Mile Traverse City

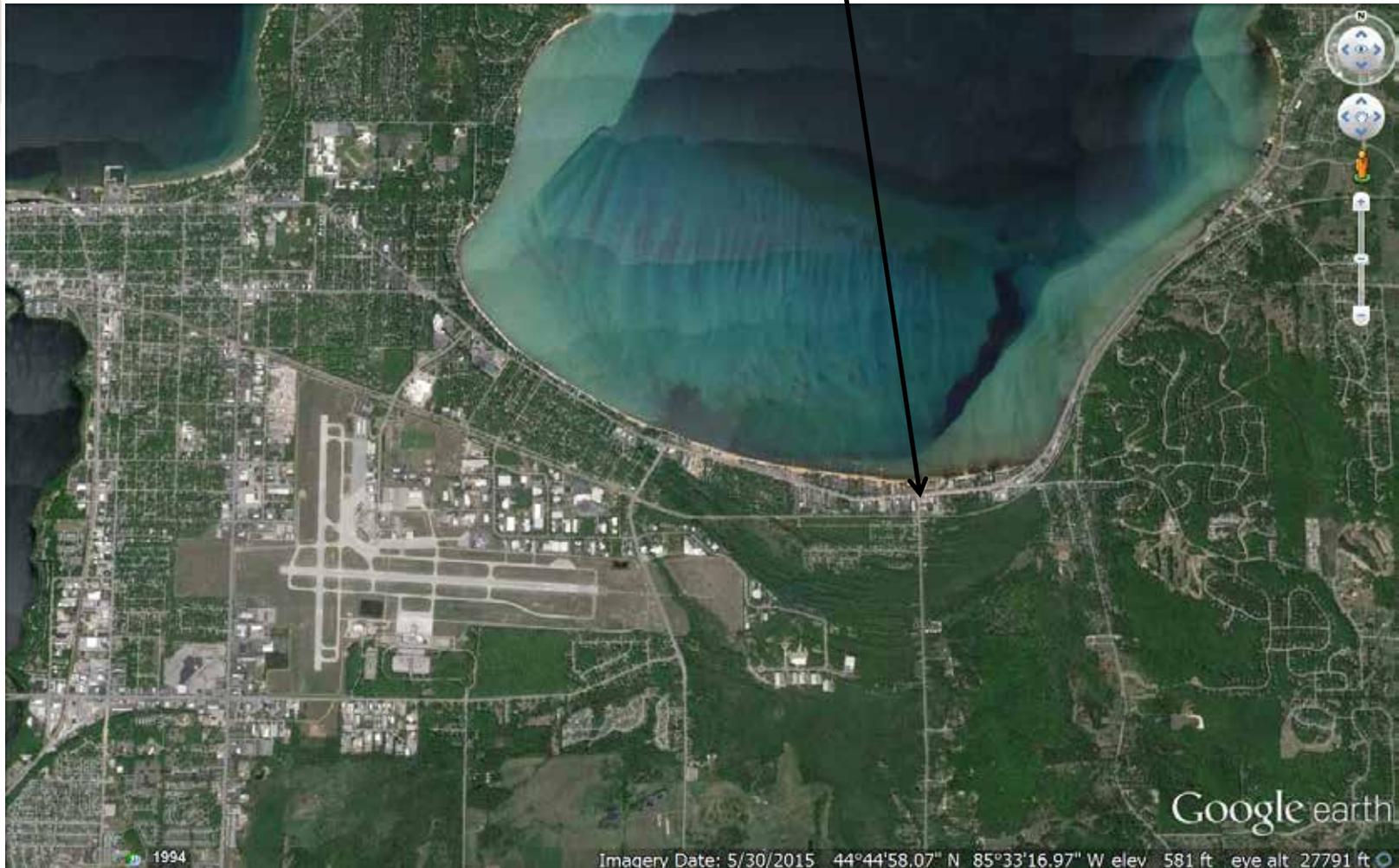
Ann Emington

Michigan Department of Environmental
Quality

231-878-2784

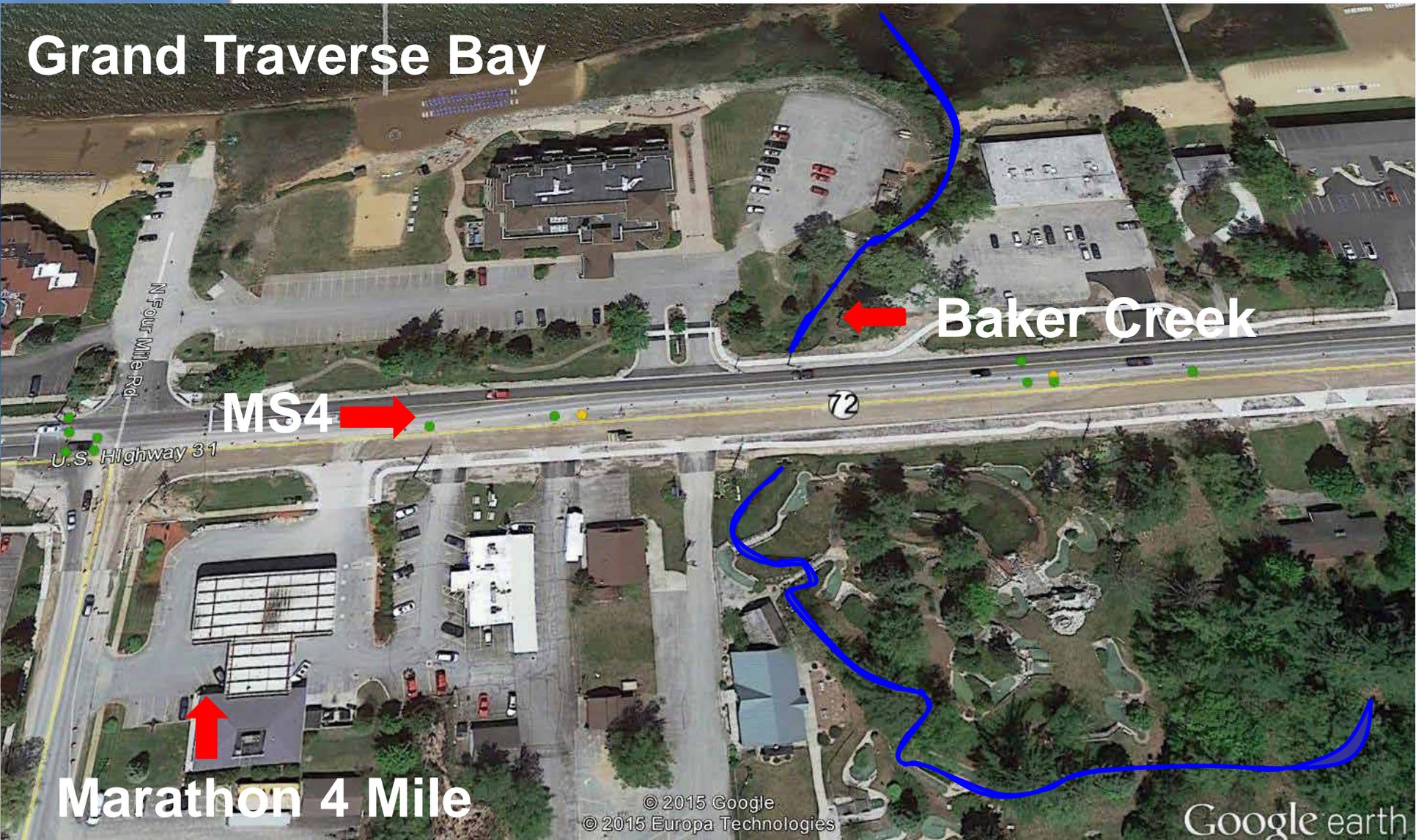
emingtona@michigan.gov

Marathon 4 Mile



Site Map & Receptors

Grand Traverse Bay



Baker Creek

MS4

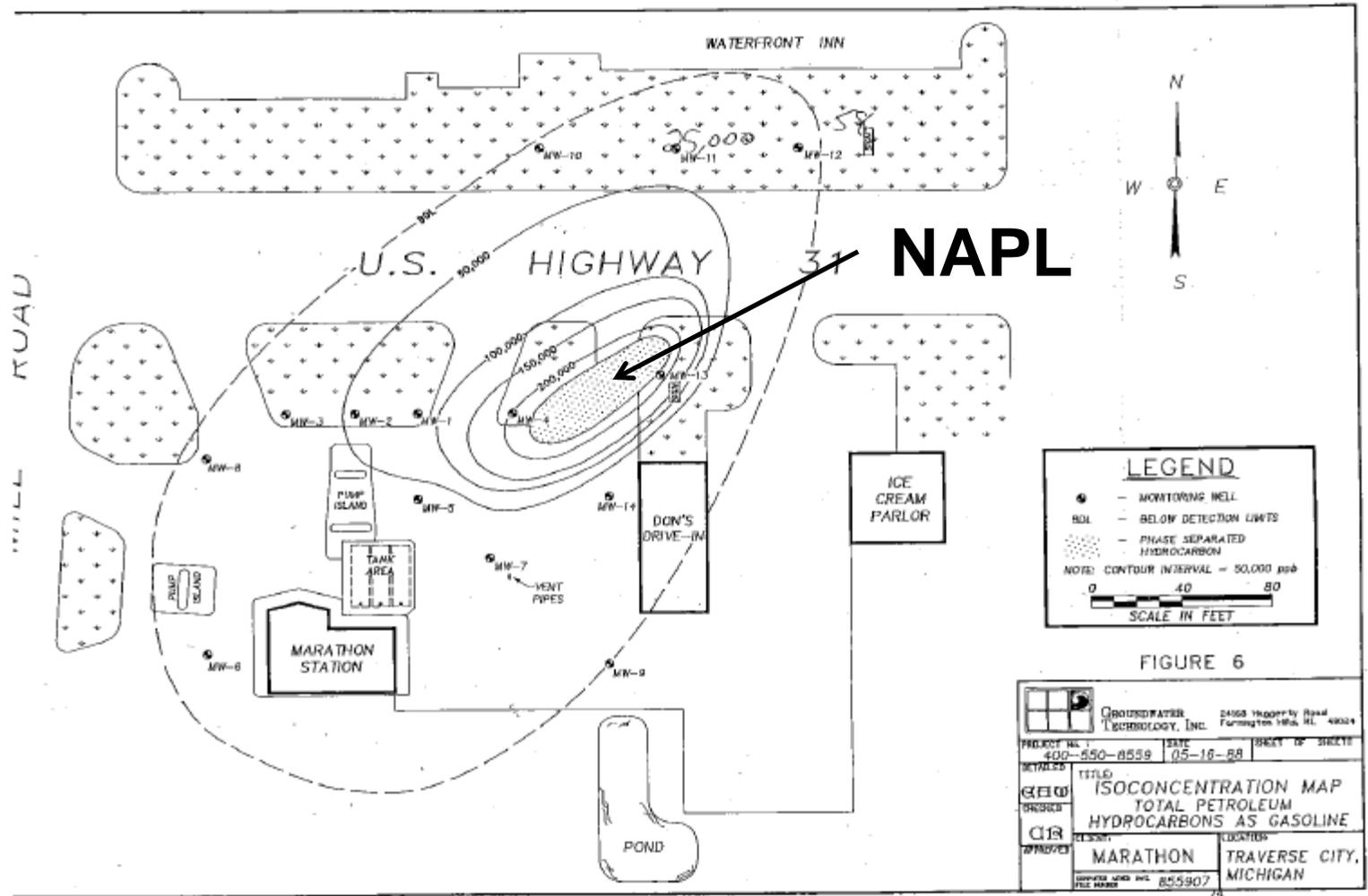
U.S. Highway 31

Marathon 4 Mile

Marathon 4 Mile

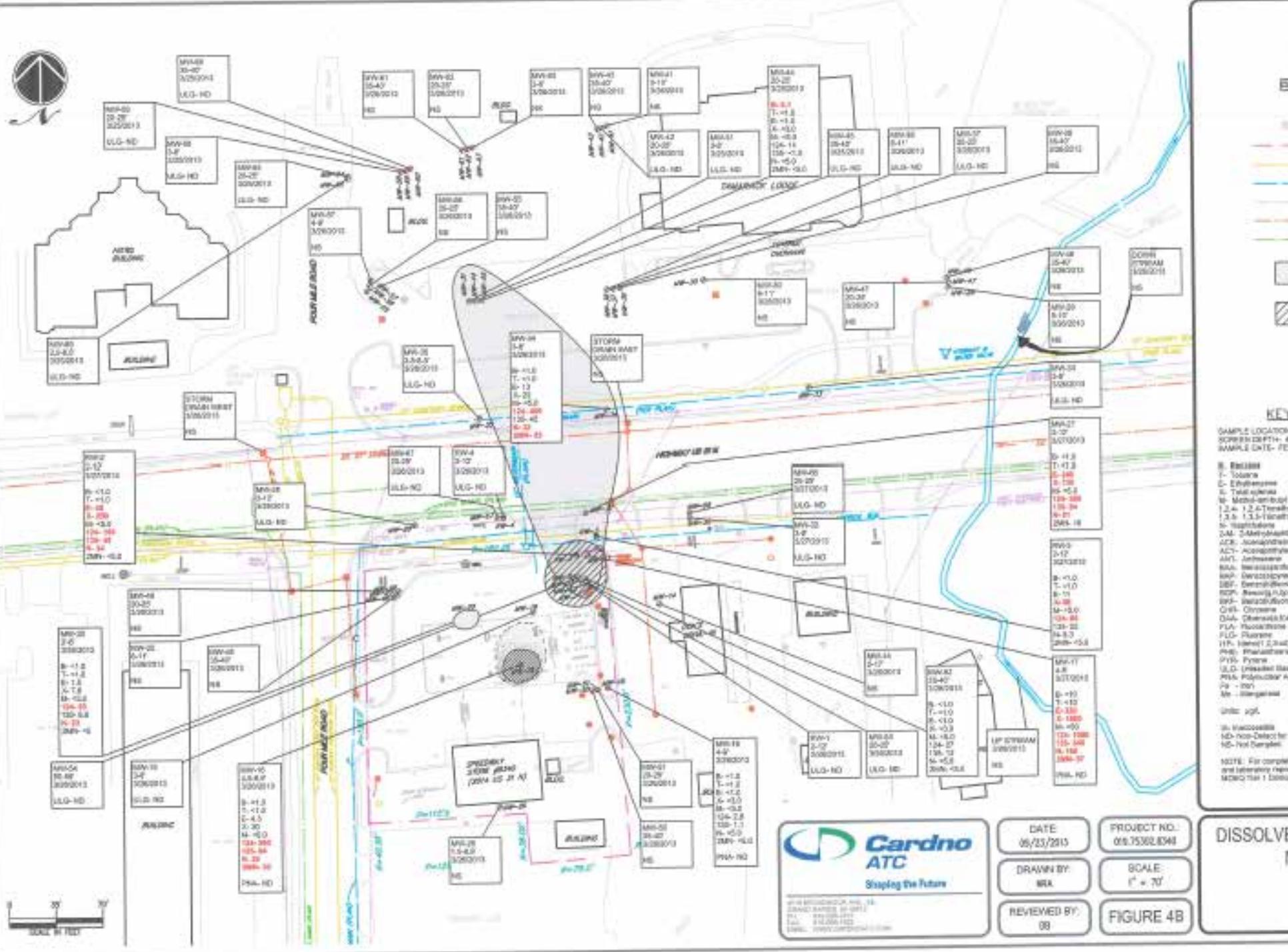


GW Plume & NAPL Site Map 1988

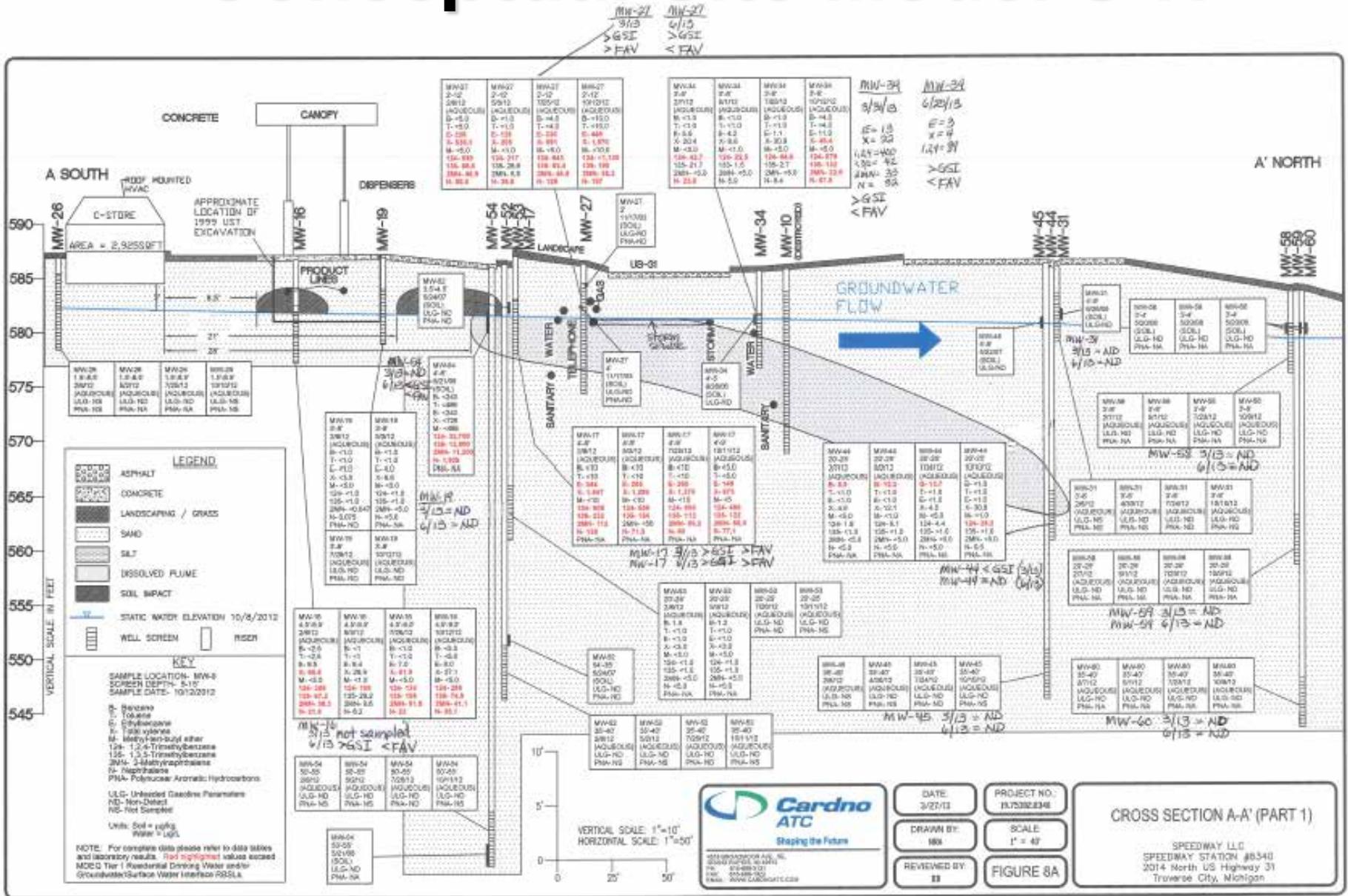


Initial Response

- Removal of mobile non-aqueous phase liquid (NAPL) from 1987 through 1993.
- USTs removed in 1989 along with 1,500 cubic yards of contaminated soil and 2.4 millions gallons of water.
- A groundwater pump and treat system operated from 1988 to 1999 to address the NAPL.



Conceptual Site Model S-N



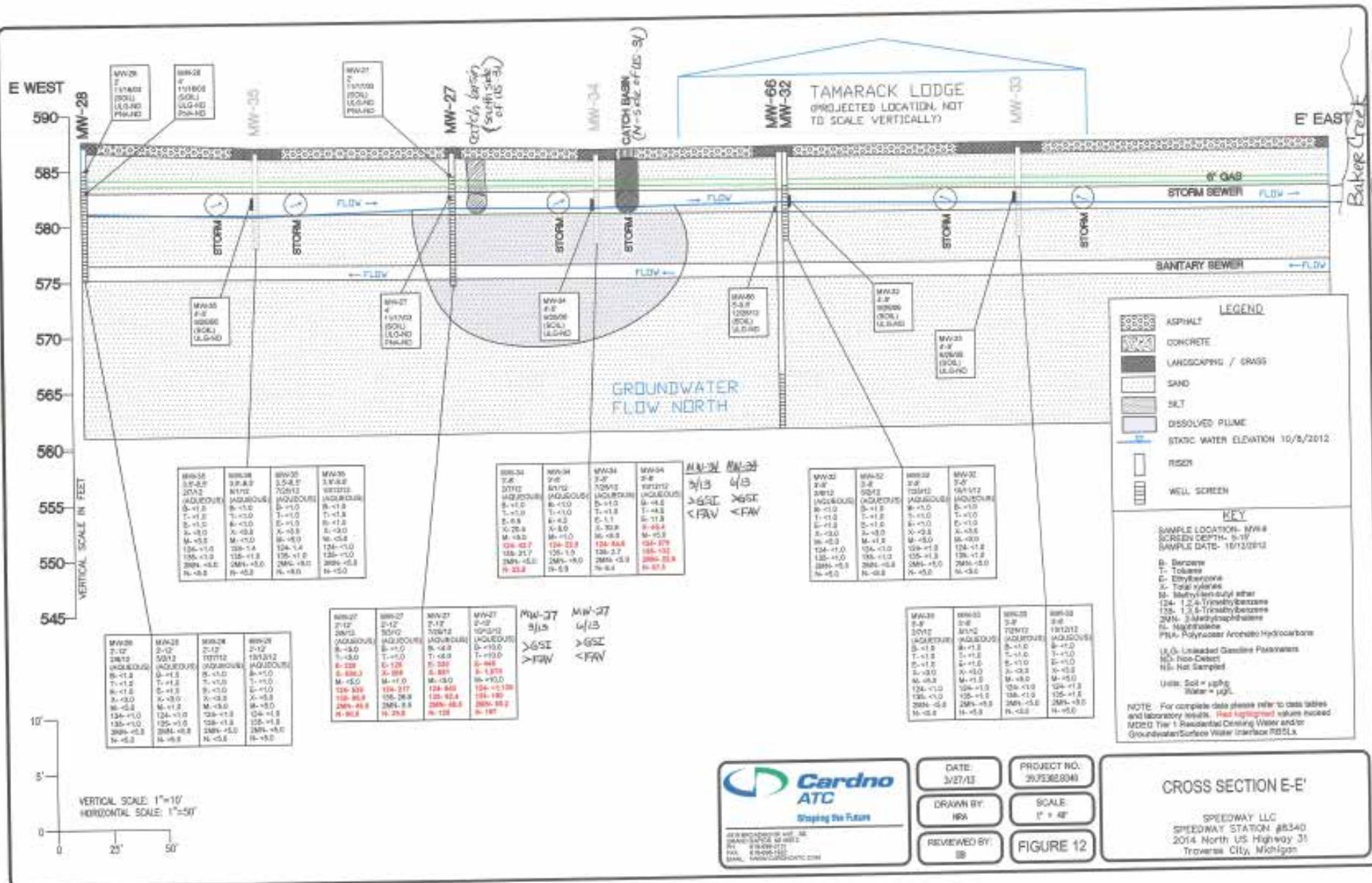
Receptors



Grand Traverse Bay



Conceptual Site Model E-W



Receptors



Baker Creek

MDOT storm sewer catch basin →



Questions

- Will the contaminant plume reach East Grand Traverse Bay?
- Does the contaminant plume intersect the storm sewer?
- Is the sewer a Municipal Separate Storm Sewer System (MS4)?
- Is contaminant plume entering the storm drain (hydraulic connection)?
- Where can you sample the storm sewer and get a representative sample?

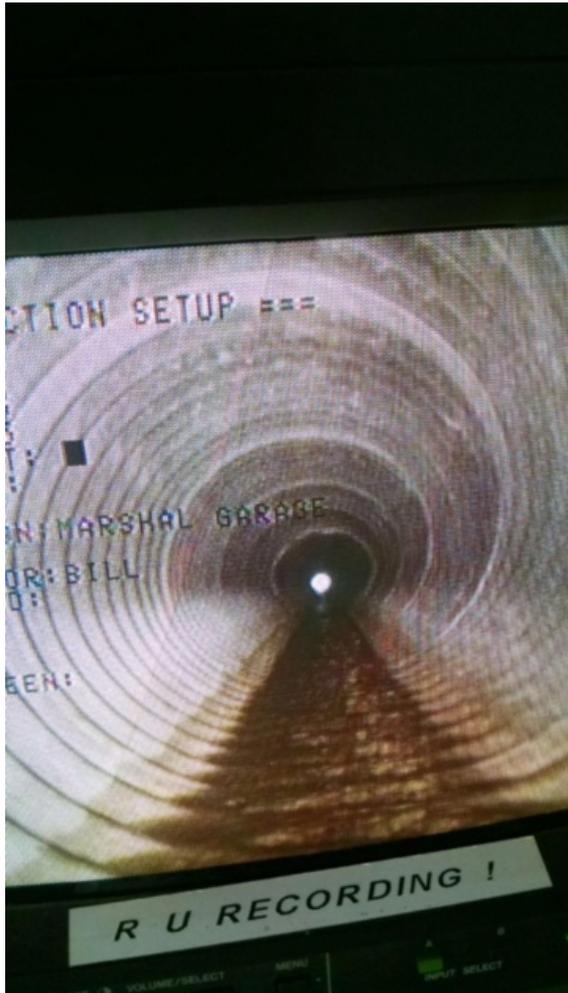
Part 20120e and GSI

- Section 20120e addresses response activities for venting groundwater
- Section 20120e(3)(a-h) is sewer a relevant pathway?
- Section 20120e(3)(h) is there infiltration into sewers?
- Section 20120e(19) applies if its relevant and discharges to surface water
- Section 20120e(19)(b)(v) location of monitoring points; where GW enters the sewer or downstream but upstream of the sewer outfall at the surface water.

Answers & More Questions

- Groundwater contamination most likely won't reach GT Bay.
- Contaminants are in contact with the storm drain, which is MS4.
- Is the storm sewer water-tight?
Based on age - NO
- Do the samples from catch basins represent actual groundwater?
Probably not.

Ways to Assess the Sewer.



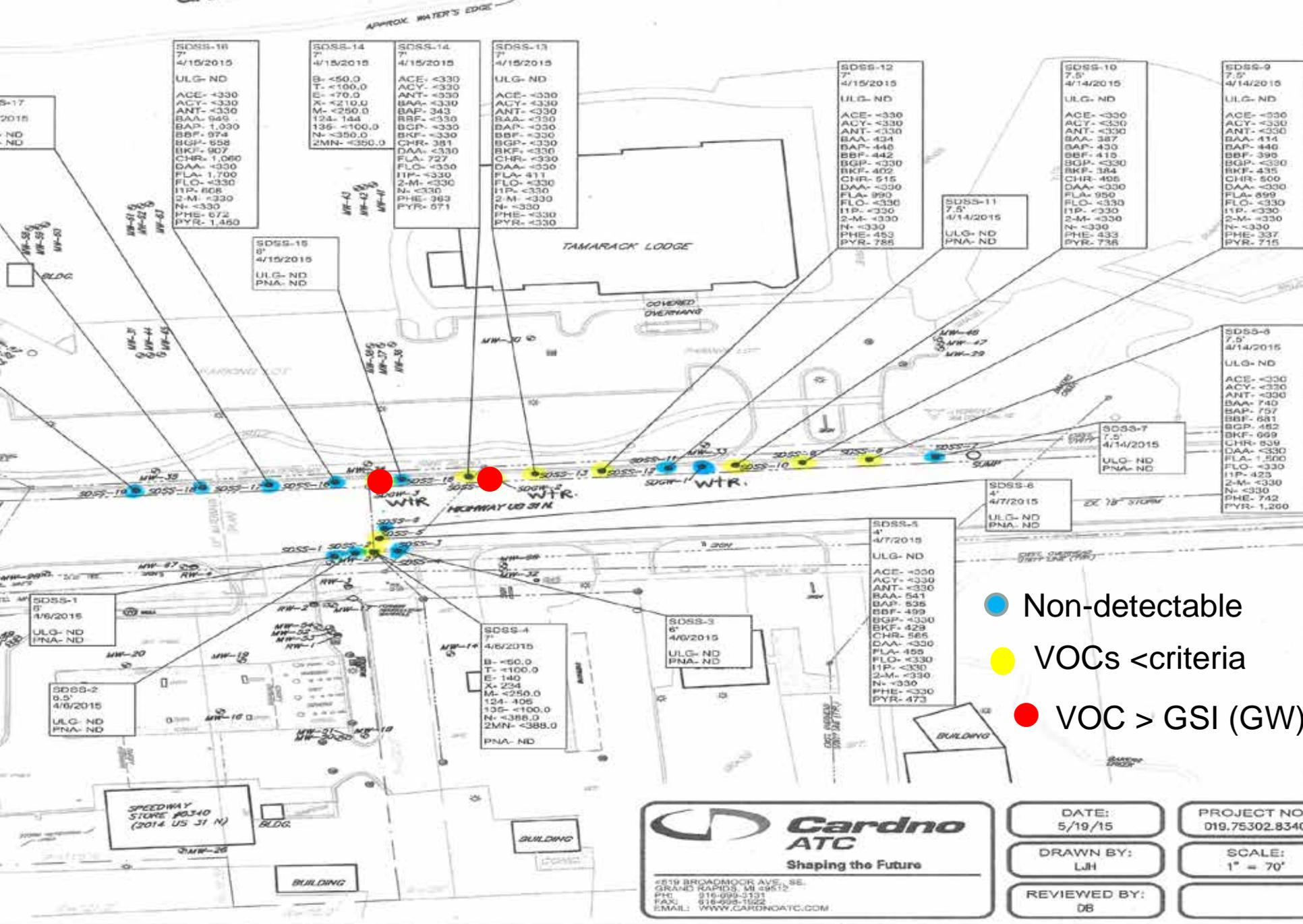
- Video tape inside of sewer.
- Determine the age and construction of the sewer and whether the joints are sealed.
- Sample the water as it seeps into the sewer to determine the level of contaminants entering the sewer.

Sewer Upgrade/Investigation



Catch basin





Cardno ATC
Shaping the Future

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GRAND RAPIDS, MI 49512
PH: 616-699-3131
FAX: 616-699-1622
EMAIL: WWW.CARDNOATC.COM

DATE: 5/19/15	PROJECT NO: 019.75302.8340
DRAWN BY: LJH	SCALE: 1" = 70'
REVIEWED BY: DB	

Results from sewer upgrade/investigation

- Sewers were constructed with water tight connections in 2015.
- Sewer is not a relevant pathway.
- An MDOT ELA would still be required because the groundwater contaminant levels are above criteria.

Michigan Department of Environmental Quality

800-662-9278

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