

The following site is being submitted for inclusion into the GIS registry:

This is a:	New Submittal
BRRTS ID (no dashes):	0305000076
Comm # (no dashes):	54180106025
County:	Brown
Region:	Commerce
Site name:	Dan's Service Station/Bridgeport Citgo
Street Address:	525 Main St
City:	Wrightstown
Closure Date	2000-08-22
Closure Conditions:	met
Offsite contamination?	No
Right-of-way contamination?	Yes
Contaminated media:	Groundwater
GPS Coordinates (meters in the WTM91 projection)	
Easting (X):	66171.268746971
Northing (Y):	429907.841424346
Submitted by:	Cheryl Nelson

Checklist

- Final Closure Letter
- Copy of recorded deed Instrument for any property with GW >NR140 ES
- General Location Map
- Detailed Location Map showing property boundaries, buildings, etc for properties with GW >NR140 ES
- Latest Map(s) showing extent or outline of current GW plume
- GW flow direction
- MW(s) and/or potable wells
- Latest Table of GW results



August 22, 2000

Mr. Robert Van De Hey
PO Box 206
Wrightstown WI 54180

Subject: **Case Closure** – Bridgeport Citgo (Formerly Dan's Service Station)
525 Main Street, -Wrightstown
COMMERCE #54180-1060-25 DNR #03-05-222005

#03 05 222005

Dear Mr. Van de Hey:

I have reviewed the information submitted by your consultant to satisfy the conditions of closure set in the Conditional Closure letter dated July 10, 2000. The department has determined that all the conditions of closure have been met. **The site will now be listed as "closed"** on the Department of Commerce/Department of Natural Resources database.

Thank you for your efforts in protecting the environment of the State of Wisconsin.

If you have any questions, feel free to contact me at (920)424-0025.

Sincerely,


Thomas Verstegen
Hydrogeologist
Department of Commerce

cc: PECFA File – pf\pecfa\541\54180\106025\close.doc
Ms. Victoria Flowers – Environmental Assessments

1764800

required. That the property owner shall provide any and all necessary information to the Department in order for the Department to be able to make a determination. Upon receipt of such a request, the Department shall determine whether or not the restrictions contained herein can be extinguished. Conditions under which a restriction may be extinguished will be determined in accordance with the site specific standards, rules and laws for this property. If the Department determines that the restrictions can be extinguished, an affidavit, with a copy of the Department's written determination, may be recorded to give notice that this restriction or portions of this restriction are no longer binding. Any restriction placed upon this property shall not be extinguished without the Department's written determination.

IN WITNESS WHEREOF, the owner of the property has executed this document, this 17th day of July, 2000.

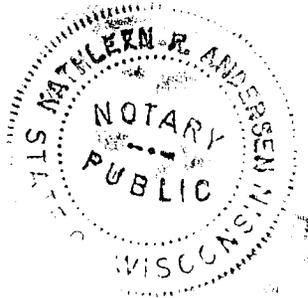
Signature: *Robert E. Van De Hey*
Printed Name: ROBERT E VAN, DE HEY

Bonita E. Van De Hey
Bonita E Van De Hey

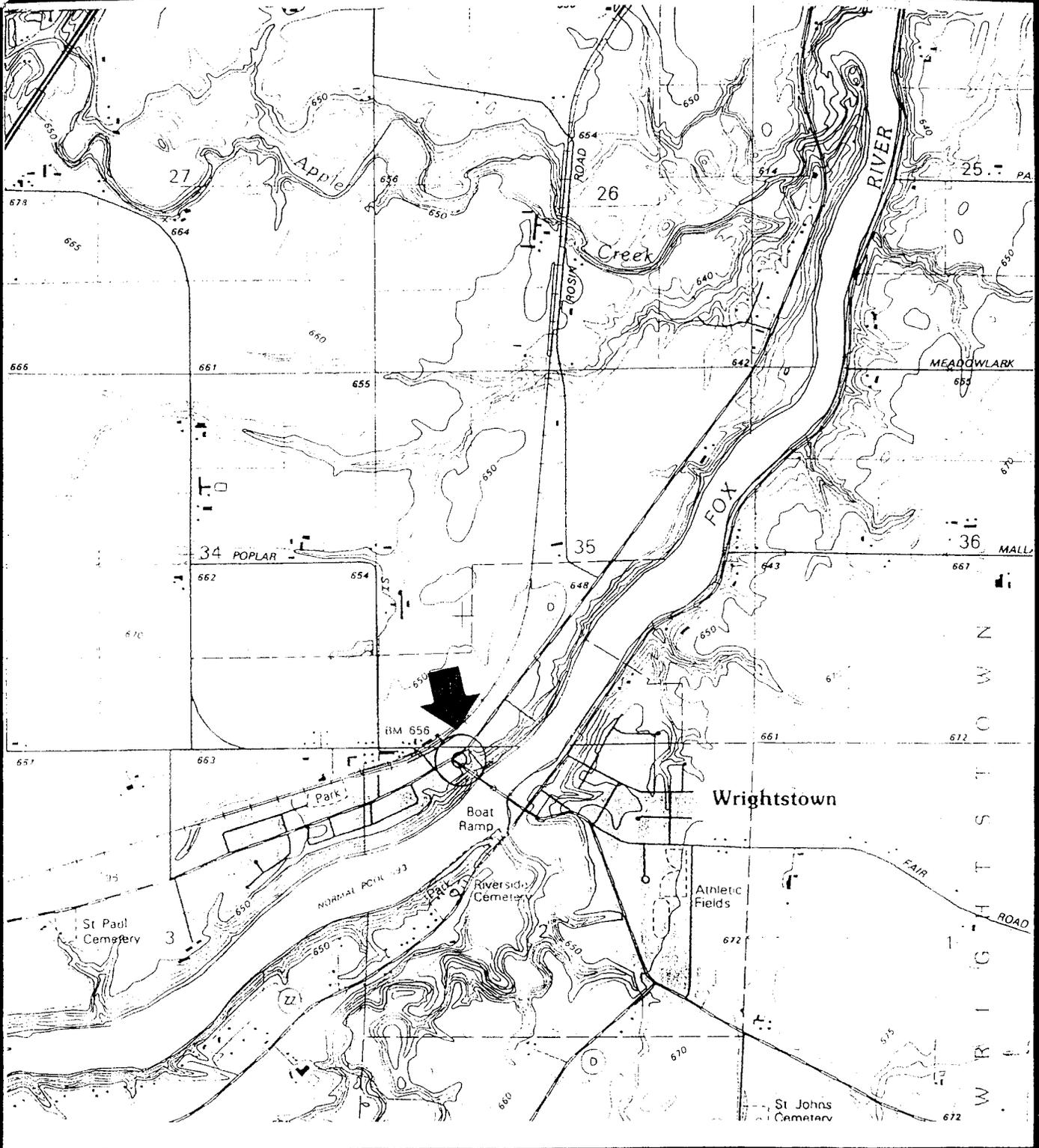
Subscribed and sworn to before me
this 17 day of July 2000.

Kathleen R. Anderson Kathleen R. Anderson

Notary Public, State of. WISCONSIN
My commission 8/6/2000



This document was drafted by Wisconsin Department of Commerce.



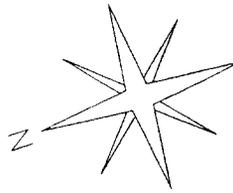
ENVIRONMENTAL ASSESSMENTS, INC.	Project/Client REGIONAL SITE LOCATION MAP DAN'S SERVICE STATION 525 MAIN STREET WRIGHTSTOWN, WI	Figure No.	1
	(Map source 7.5 Minute series USGS Topographic Map of Wrightstown)	Drawn By	VAF
		Scale	1" = 1,500 ft
		Project No.	20153010799

Legend

MW6



Monitoring Well ID



MW6

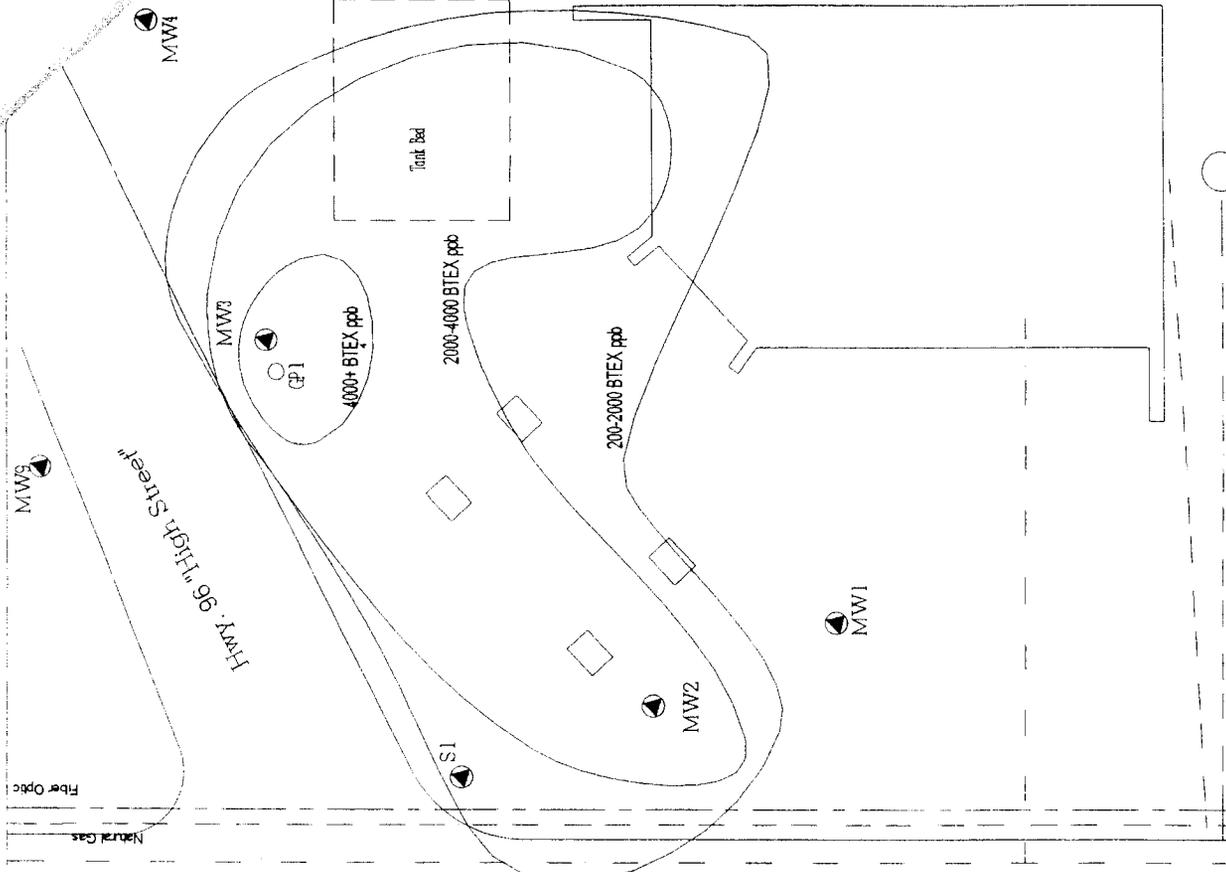


Figure: 7

Scale: 1" = 30'

Drawn By: VAF

Current Site Layout
Showing Groundwater
Contamination Plume
Bridgeport Cirgo
525 Main Street
Wrightstown, WI 54180

Environmental Assessments, Inc.
P.O. Box 9127
Appleton, WI 54911
(920) 749-9746

N

MW9
649.04

MW4
649.41

Hwy. 96 "High Street"

649.00

MW3
648.52

Sign

Tank Bed

S1
648.36

Pump
Islands

MW6
649.98

MW2
648.43

MW1
648.52

Hwy. 96 "Main Street"

648.50

Sanitary & Water Service

Natural Gas

Storm Sewer

ENVIRONMENTAL ASSESSMENTS,
INCORPORATED
P.O. BOX 9127
APPLETON, WI 54911
(920) 749-9746

TITLE:
Groundwater Elevations Map
3/13/00

FIGURE# 8

PROJECT:
Bridgeport Citgo
525 Main Street
Wrightstown, WI 54180

SCALE : 1" = 20'

DRAWN BY: Victoria Flowers

Table 4 - Groundwater Laboratory Sampling Results

Sample ID	Date	Benzene	1,2 Dichloroethane	Ethylbenzene	Methyl-Tert-Butyl-Ether	Naphthalene	Toluene	Trimethylbenzenes	Xylenes
MW1 <small>(sample mislabeled)</small>	08/05/99	<0.32	<0.29	<0.34	0.43	<0.88	<0.35	0.63	<0.66
	12/15/99	<0.32		<0.34	<0.31	<0.88		<0.64	<0.66
	03/13/00	<0.32		<0.34	<0.31	<0.88		<0.64	<0.66
MW2 <small>(sample mislabeled)</small>	08/05/99	1300	<7.2	1000	24	190	140	960	1150
	12/15/99	810		1100	26	160	93	741	700
	03/13/00	860		1200	16	78	92	530	523
MW3	08/05/99	4200	<15	150	260	<44	690	175	1410
	12/15/99	2300		240	210	33	41	173	310
	03/13/00	3100		230	180	24	250	185	790
MW4	08/05/99	<0.32	<0.36	<0.34	17	<0.88	1.3	22	33
	12/15/99	4.9		22	15	0.92	1.9	7.9	3.4
	03/13/00	1.8		6.9	6.8	<0.88	0.75	10.7	8
MW5	08/05/99	280	<0.36	<3.4	12	<8.8	22	101	450
Removed during site upgrade activities									
P1	08/05/99	<0.32	<0.36	<0.34	1.5	<0.88	<0.35	<0.64	<0.66
Removed during site upgrade activities									
MW6	12/15/99	<0.32		<0.34	6	<0.88	<0.35	<0.64	<0.66
	03/13/00								
MW7	10/15/99	<0.32	<0.36	<0.34	<0.31	<0.88	<0.35	<0.64	<0.66
Removed during site upgrade activities									
MW8	10/15/99	<0.32	<0.36	<0.34	<0.31	<0.88	<0.35	<0.64	<0.66
Removed during site upgrade activities									
MW9	12/15/99	8.1		3.2	7.6	<0.88	0.41	1.5	2.4
	03/13/00	5.6		4.5	3.4	<0.88	0.55	4	3
S1	12/15/99	150		76	11	17	30	97	190
	03/13/00	130		32	4.1	4	12	31	67
NR 140 PAL		0.5	0.5	140	12	8	68.6	96	124
NR 140 ES		5	5	700	60	40	343	480	620

Notes:

All results are in parts per billion (ug/L or ppb)
 NR 140 PAL = WDNR NR 140 Preventative Action Limit
 NR 140 ES = WDNR NR 140 Enforcement Standard

Bold Values Indicate NR 140 PAL exceedence

Shading with Bold indicates NR 140 ES exceedence

3/13/00 (sample mislabeled) = Sample MW1 and MW2 were mislabeled. On laboratory data sheets, MW1 = MW2 and MW2 = MW1

Groundwater Laboratory Sampling Results (non-regulated parameters)

Sample ID	Date	sec-Butylbenzene	n-Butylbenzene	Isopropylbenzene	p-Isopropyltoluene	n-Propylbenzene
MW1	08/05/99	12	85	38	7.9	44
MW2	08/05/99	<0.34	<0.23	<0.34	<0.31	<0.3
MW3	08/05/99	<17	<12	<17	<16	<15
MW4	08/05/99	0.38	13	<0.34	0.47	<0.3
MW5	08/05/99	<0.34	24	<3.4	<3.1	<3
P1	08/05/99	<0.33	<0.23	<0.34	<0.31	<0.3
NR 140 PAL	None Established for these parameters					
NR 140 ES						

Table 5 - Field Measured Inorganic Parameters

ID	Date	Dissolved Oxygen	Temperature (celsius)	Nitrate	Sulfate	Ferrous Iron
MW1	08/05/99	3.22	15.8	1.7	8	0.2
	12/15/99	1.58	12.4	1.4	100	0.7
	03/13/00	3.16	6.3	4.6	100	0
MW2	08/05/99	3.26	18	0.4	85	0.2
	12/15/99	0.71	13.3	4.3	0	5.9
	03/13/00	0		5.4	20	3.1
MW3	08/05/99	2.88	15.8	1.5	0	0.2
	12/15/99	0.8	13.8	7.2	0	8.4
	03/13/00	0	7.4	8	22	4.5
MW4	08/05/99	3.74	18.8	1.4	80	0
	12/15/99	1.59	12.8	2	60	2.6
	03/13/00	3.06	5.6	4	100	0.5
MW5	08/05/99	0.41	15.4	0.7	63	0.2
Well removed during excavation activities						
PI	08/05/99	3.08	11.3	0.7	85	0
Well removed during excavation activities						
MW6	12/15/99	3.97	13.3	1.9	100	0.4
	03/13/00	2.85	6.4	3.8	100	0.3
MW9	12/15/99	4.08	14.1	3.2	17	1.1
	03/13/00	2.39	7.1	4	48	0.5
S1	12/15/99	0.85	12.3	1.5	100	2.8
	03/13/00	0.08	5.2	3.5	100	3.6

Notes:
All results are in parts per million (mg/L)

Table 6 - Groundwater Contaminant Mass Calculations

Gallons of Contaminated Groundwater		5385.6
Pounds of Groundwater		44,916
Impacted Zone Contaminant Values (MW3 - 3/13/00)		
Compound	Recorded Value (pph)	Pounds of Contaminant
Benzene	3,100	0.139
Toluene	250	0.011
Ethylbenzene	230	0.010
Xylenes	790	0.035
Trimethylbenzenes	185	0.008
Total BTEX	4,370	0.196

After evaluation of the groundwater contamination levels and determination of the area of impacted groundwater, it is then useful to calculate the assimilative capacity of the groundwater environment. This exercise is demonstrated below¹.

Table 7 - Assimilative Capacity Calculations

Assimilative Capacity of BTEX per unit of electron acceptor utilized/produced (mg/L or ppm)				
	Oxygen	Nitrate	Sulfate	Iron
Average BTEX degraded per mg/L of electron donor/acceptor produced ²	0.32	0.21	0.21	0.05
Measured Background Concentration (MW4)	3.16	4.6	100	0
Measured Inner Plume Concentration (MW3)	0	4	22	4.5
Assimilative Capacity Potential (mg/L)	1.0112	0.126	16.38	0.225
Total mg/L of BTEX in groundwater plume (MW3 - 3/13/00)				4.3

Assimilative capacity is determined by using the following equation:

$$BTEX_{bio-x} = "C"(x_{back} - x_{measure})$$

$BTEX_{bio-x}$ = BTEX Assimilative Capacity Potential of measured electron acceptor
 $"C"$ = mg/L of BTEX degraded per electron acceptor used/produced
 x_{back} = mg/L of electron acceptor/donor measured background levels
 $x_{measure}$ = mg/L of electron acceptor/donor in inner plume monitoring point

The calculated assimilative capacity of the groundwater is greater than the measured groundwater contamination levels. It is projected that bioremediation will be sufficient for the remaining contaminants. The most likely pathway for degradation of the greatest amount of BTEX contamination appears to be aerobic biodegradation followed by sulfate reduction.

¹ Values and equations obtained from "Technical Protocol for Implementing Intrinsic Remediation with Long-Term Monitoring for Natural Attenuation of Fuel Contamination Dissolved in Groundwater". Wiedemeier, Todd, Parsons Engineering Science