Meridian Environmental Consulting, LLC

Rec'd DS 10/18/16

October 14, 2016

John Sager
Wisconsin Department of Natural Resources
1701 N. 4th St.
Superior, WI 54880

Subject: **Progress Report**
Wagner Oil Spill – March 12, 2016
Hwy. 45 – Rolling Township, Langlade County, Wisconsin
DNR BRRTS No. 02-34-577387
Meridian No. 05C817

Dear John:

This letter describes work completed to date in response to the above referenced spill. Based on this work, we recommend an additional downgradient monitoring well followed by two quarters of ground water samples. If the results indicate a stable and/or receding plume, we will evaluate this site for Closure with GIS Registry for Soil and Ground Water.

BACKGROUND INFORMATION

Please refer to file reports for detailed background information. A brief summary is provided below.

The spill occurred March 12, 2016 on Hwy. 45 near Aniwa, Wisconsin (Figures 1 and 2). An estimated 1787 gallons of gasoline spilled onto the roadway and flowed easterly onto the shoulder and ditch.

Cleanup included using absorbent pads and booms (29 drums), vacuum truck(s) (14,800 gallons of gasoline/water mixture), and soil excavation (670.18 tons).

We estimate 1500 gallons (or more) of product was recovered in the initial emergency response action. Additionally, a significant portion of the unrecovered product likely evaporated over time (especially during the hot summer months).

REMEDIAL INVESTIGATION

Soil Borings – May 25, 2016

Seventeen soil borings (B1 through B17) were installed in the locations shown on Figure 2. The boring depths ranged from 8 to 12 ft below grade. Soil samples were collected from the borings and analyzed for PVOC+Naphthalene. The results are summarized in Table 1.

Ground water samples were collected from several soil borings; the results are summarized in Table 2.

Temporary Monitoring Wells – May 25, 2016

Five temporary monitoring wells (1-inch dia) (TMW-1 thru TMW-5) were installed in the locations shown on Figure 2. The wells were screened across the water table with 5 ft screens. Ground water samples were collected from these wells; the results are summarized in Table 2.

Monitoring Wells – August 10, 2016

Monitoring wells MW-1, MW-2, and MW-3 were installed August 10, 2016 in the locations shown on Figure 2. The soil boring logs and monitoring well forms are provided in Appendix A.

Ground Water Sampling

Ground water samples were collected August 29, 2016 from MW-1, -2, -3, TMW-3, -4, -5. Temporary wells TMW-1 and TMW-2 could not be located. The analytical reports are provided in Appendix B and summarized in Table 2.

The depth to ground water was measured in each well prior to sampling (Table 3).

Natural attenuation parameters were measured in the field during the August 29, 2016 sampling event (Table 4). Several wells (especially temporary wells) were poorly developed which limited field measurements.

DATA EVALUATION

Setting

The site is located in a rural area of Langlade County. The area is forested. The spill occurred in a topographic swale with surface water flow to the south/southeast. The remedial excavation created a shallow pond (approximately 1 foot depth).

The nearest residence is located over ¼ mile away.

Hydrogeology

The site is underlain by heterogeneous glacial deposits consisting of sand, gravel, clay, and silt with large boulders. Bedrock (described as 'granite' in area well logs – Appendix C) is typically encountered in area wells about 50 feet below grade.

The soil borings encountered silty sands with some coarser sand, gravel, and large boulders.

Ground water flow appears to be to the southwest (Figure 3) based on the August 29, 2016 measurements. Additional measurements are needed to confirm this finding.

Impacted Soil

The soil borings and soil samples defined the extent of impacted soil. There is residual soil contamination around the perimeter and floor of the excavated area. These impacts will naturally attenuate and do not require further investigation and remediation.

No further action is recommended with respect to soil impacts.

Extent of Impacted Ground Water

The analytical data and ground water flow measurements indicate the extent of impacted ground water is as shown in Figure 4. Based on this initial data, the downgradient extent should be defined with an additional monitoring well (Figure 4).

After the additional well is installed, all of the monitoring wells will be sampled twice (quarterly). The ground water levels will be measured during each event to confirm ground water flow direction.

Environmental Risk Analysis

The primary environmental risks at this site are surface water and potential impacts to nearby potable wells. Based on the water sample from the pond (Table 2), the initial remedial actions appear to have removed shallow petroleum impacts which present a threat to surface water. No further action is recommended with respect to surface water.

The potential for impacting nearby private wells is not of concern at this time. The nearest residence (and private well) is over ¼ mile away.

RECOMMENDATIONS

We recommend the downgradient extent of impacted ground water be defined followed by two sampling events (quarterly). It is expected this data will document a stable and receding plume as natural attenuation processes (i.e., natural biodegradation, dilution, offgas evaporation, etc.) reduce the ground water impacts.

We plan to install the additional monitoring well in the next few weeks. Ground water sampling of all wells will occur following the well installation.

The absorbent boom around the perimeter of the pond will be removed. The pond no longer has measureable petroleum impacts and the absorbent boom is no longer needed.

Following completion of this work, a report will be prepared documenting the above actions and include our recommendations regarding Closure.

Sincerely,
MERIDIAN ENVIRONMENTAL CONSULTING, LLC

Kenneth Shimko, PG
Project Manager

C: Wagner Oil Company

TABLES

Table 1: Geoprobe Soil Analytical Results Table
Wagner Oil Company - Highway 45 Gasoline Spill
Rolling, WI
(Table Created By REI)

		Date-->	*5/25/16*	*5/25/16*	*5/25/16*	*5/25/16*	*5/25/16*	*5/25/16*	*5/25/16*	*5/25/16*	*5/25/16*	*5/25/16*	*5/25/16*	*5/25/16*	*5/25/16*	*5/25/16*	*5/25/16*	*5/25/16*
		Sample-->	*B1*	*B1*	*B2*	*B2*	*B3*	*B3*	*B4*	*B4*	*B5*	*B5*	*B6*	*B6*	*B7*	*B7*	*B8*	*B8*
		Sample Depth-->	*2-4'*	*6-8'*	*2-4'*	*10-12'*	*2-4'*	*6-8'*	*2-4'*	*6-8'*	*2-4'*	*10-12'*	*2-4'*	*10-12'*	*2-4'*	*10-12'*	*2-4'*	*6-8'*
		Percent Moisture (%)	*7.2*	*12.0*	*6.5*	*6.1*	*6.5*	*8.1*	*9.3*	*7.3*	*8.5*	*5.5*	*12.8*	*NA*	*10.5*	*10.9*	*16.4*	*8.3*
		PID (ppm)	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*8.2*	*31.3*	*0*	*1,485*	*0.4*	*4.2*	*0*	*0*
Petroleum VOC's (mg/kg)	Non-Industrial Not-to-Exceed DC RCL	NR 140 Groundwater Pathway Protection																
Benzene	1.49	0.0026	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	**26.3**	<0.025	<0.025	<0.025	<0.025
Ethylbenzene	7.47	0.785	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	**79.9**	<0.025	<0.025	<0.025	<0.025
Toluene	818	0.5536	<0.025	<0.025	<0.025	0.0374^{J}	<0.025	<0.025	<0.025	<0.025	<0.025	0.0474^{J}	<0.025	*250*	<0.025	<0.025	<0.025	<0.025
Xylenes (Total)	258	1.97	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	**363**	<0.050	<0.050	<0.050	<0.050
Methyl-tert-Butyl-Ether (MTBE)	59.4	0.0135	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	*2.18*^{J}	<0.025	<0.025	<0.025	<0.025
1,2,4- Trimethylbenzene	89.8	NA	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	**135**	<0.025	<0.025	<0.025	<0.025
1,3,5- Trimethylbenzene	182	NA	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	38.4	<0.025	<0.025	<0.025	<0.025
Trimethylbenzenes (Total)	NA	0.691	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	*173.40*	<0.025	<0.025	<0.025	<0.025
Naphthalene	5.15	0.3291	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	**19.8**	<0.025	<0.025	<0.025	<0.025
Number of Individual Exceedances (DC)-->			0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0
Cumulative Hazard Index (DC)-->			0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	2.3743	0.0007	0.0007	0.0007	0.0007
Cumulative Cancer Risk (DC)-->			2.50E-08	2.50E-08	2.50E-08	2.50E-08	2.50E-08	2.50E-08	2.50E-08	2.50E-08	2.50E-08	2.50E-08	2.50E-08	2.30E-05	2.50E-08	2.50E-08	2.50E-08	2.50E-08

Notes:
NR 720 Standards Obtained From WDNR Online Database
RCL - NR720 Soil Residual Concentration Level
DC - Direct Contact
< - Concentration Below Laboratory Detection Limit
NA - No Standard/Not Applicable
mg/kg - Parts Per Million (ppm)
J - Estimated concentration at or above the Limit of Detection (LOD) and below the Limit of Quantitation (LOQ)
Exceeds Non-Industrial Not-To-Exceed DC RCL - **Bold**
Exceeds NR 140 Groundwater Pathway Protection - *Italic*

Table 1 (cont): Geoprobe Soil Analytical Results Table
Wagner Oil Company - Highway 45 Gasoline Spill
Rolling, WI
(Table Created by REI)

		Date-->	*5/25/16*	*5/25/16*	*5/25/16*	*5/25/16*	*5/25/16*	*5/25/16*	*5/25/16*	*5/25/16*	*5/25/16*	*5/25/16*	*5/25/16*	*5/25/16*	*5/25/16*	*5/25/16*	*5/25/16*	*5/25/16*	*5/25/16*
		Sample-->	*B9*	*B9*	*B10*	*B10*	*B11*	*B11*	*B12*	*B13*	*B13*	*B14*	*B14*	*B15*	*B15*	*B16*	*B16*	*B17*	*B17*
		Sample Depth-->	*2-4'*	*4-6'*	*2-4'*	*4-6'*	*2-4'*	*4-6'*	*2-4'*	*2-4'*	*4-6'*	*2-4'*	*4-6'*	*2-4'*	*8-10'*	*2-4'*	*6-8'*	*2-4'*	*6-8'*
		Percent Moisture (%)	*10.8*	*10.7*	*13.1*	*15.1*	*10.9*	*11.2*	*11.0*	*9.8*	*11.8*	*9.8*	*8.7*	*5.2*	*14.4*	*7.0*	*7.8*	*5.0*	*2.3*
		PID (ppm)	*1,163*	*1,107*	*4.9*	*1.9*	*194.6*	*797*	*8.0*	*0.9*	*7.3*	*0.8*	*1.0*	*0*	*52.6*	*26.9*	*65.7*	*8.7*	*30.1*
Petroleum VOC's (mg/kg)	Non-Industrial Not-to-Exceed DC RCL	NR 140 Groundwater Pathway Protection																	
Benzene	1.49	0.0026	**3.9**	**3.53**	<0.025	<0.025	*0.394*	**2.47**	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	*0.0569*[J]	<0.025	<0.025	<0.025	<0.025
Ethylbenzene	7.47	0.785	**8.98**	*3.79*	0.0573[J]	<0.025	0.0689	*1.13*	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Toluene	818	0.5536	*29.3*	*14.5*	0.137	<0.025	*0.675*	*5.79*	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.109	<0.025	<0.025	<0.025	<0.025
Xylenes (Total)	258	1.97	*48.3*	*17.3*	0.279	<0.050	0.315	*5.28*	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.0539[J]	<0.050	<0.050	<0.050
Methyl-tert-Butyl-Ether (MTBE)	59.4	0.0135	*0.201*[J]	*0.0739*[J]	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
1.2,4- Trimethylbenzene	89.8	NA	17.8	6.39	0.129	<0.025	0.0509[J]	1.92	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.0535[J]	<0.025	<0.025	<0.025
1.3,5- Trimethylbenzene	182	NA	5.1	1.79	0.042[J]	<0.025	<0.025	0.531	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Trimethylbenzenes (Total)	NA	0.691	*22.9*	*8.18*	0.129	<0.025	0.0509[J]	*2.45*	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Naphthalene	5.15	0.3291	*2.42*	*0.994*	<0.025	<0.025	<0.025	0.312	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Number of Individual Exceedances (DC)-->			2	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Cumulative Hazard Index (DC)-->			0.3135	0.1138	0.0022	0.0007	0.0048	0.0533	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.001	0.0011	0.0007	0.0007	0.0007
Cumulative Cancer Risk (DC)-->			4.30E-06	3.10E-06	3.00E-08	2.50E-08	2.80E-07	1.90E-06	2.50E-08	2.50E-08	2.50E-08	2.50E-08	2.50E-08	2.50E-08	4.70E-08	2.50E-08	2.50E-08	2.50E-08	2.50E-08

Notes:
NR 720 Standards Obtained From WDNR Online Database
RCL - NR720 Soil Residual Concentration Level
DC - Direct Contact
< - Concentration Below Laboratory Detection Limit
NA - No Standard/Not Applicable
mg/kg - Parts Per Million (ppm)
J - Estimated concentration at or above the Limit of Detection (LOD) and below the Limit of Quantitation (LOQ)
Exceeds Non-Industrial Not-To-Exceed DC RCL - **Bold**
Exceeds NR 140 Groundwater Pathway Protection - *Italic*

Table 2: Ground Water Analytical Results

Wagner Oil Spill
Hwy 45 near Aniwa, Wisconsin
Meridian No. 05C817

Sample Location	Benzene	Ethylbenzene	Toluene	Xylenes (Total)	MTBE	1,2,4-TMB	1,3,5-TMB	TMB (Total)	Naphthalene
NR140 Enforcement Standard	5	700	800	2000	60			480	100
NR140 Preventative Action Limit	0.5	140	160	400	12			96	10
Soil Borings									
B3	<0.40	<0.39	<0.39	<1.2	<0.48	NR	NR	<0.42	<0.42
B5	**9,620**	**883**	**15,000**	**4,240**	<48.5	NR	NR	*326*	*77.6*[J]
B8	*8.6*	1.2	9.9	5.3	<0.48	NR	NR	<0.42	<0.42
B9	**25,800**	**5,050**	**47,600**	**23,200**	**<121**	NR	NR	**5,490**	**676**
B12	**299**	82.8	**930**	367	<4.8	NR	NR	16.3	<4.2
B13	**32.5**	0.80[J]	24.9	2.8[J]	<0.48	NR	NR	3.3	<0.42
B15	**39.9**	3.3	46.2	10.5	<0.48	NR	NR	0.56[J]	<0.42
B16	**3,250**	**2,340**	**17,600**	**10,300**	<48.5	NR	NR	**2,091**	**278**
Monitoring Wells (temporary and 2-inch)									
TW1 (B2) (installed 5/25/16)									
5/25/2016	<0.40	<0.39	<0.39	<1.2	<0.48	NR	NR	<0.42	<0.42
8/29/2016	Could not locate								
TW2 (B4) (installed 5/25/16)									
5/25/2016	<0.40	<0.39	<0.39	<1.2	<0.48	NR	NR	<0.42	<0.42
8/29/2016	Could not locate								
TW3 (B7) (installed 5/25/16)									
5/25/2016	*1.7*	<0.39	6.2	<1.2	<0.48	NR	NR	<0.42	<0.42
8/29/2016	*16.3*	<.39	4.8	5.3	<.48	<.42	0.75	0.75	<.42
TW4 (B10) (installed 5/25/16)									
5/25/2016	*0.55*[J]	<0.39	1.8	<1.2	<0.48	NR	NR	<0.42	<0.42
8/29/2016	<2	2.2	30.9	12.1	<2.4	<2.1	<2.1	<2.1	<2.1
TW5 (B14) (installed 5/25/16)									
5/25/2016	**46.5**	7.4	90.1	24.8	<0.48	NR	NR	1.6	<0.42
8/29/2016	<4	<3.9	<3.9	<12.5	<4.2	<4.2	<4.2	<4.2	<4.2
MW-1 (installed August 10, 2016)									
8/29/2016	**6630**	**1980**	**186000**	**10700**	<60.6	1500	386	**1886**	**299**
MW-2 (installed August 10, 2016)									
8/29/2016	**10100**	**1160**	**18000**	**7110**	<60.6	689	160	**849**	**161**
MW-3 (installed August 10, 2016)									
8/29/2016	**1430**	123	**1640**	*818*	<9.7	64.2	16.2	80.4	*19.5*
Pond									
5/25/2016	**6.2**	4.2	19.9	22.3	<0.48	NR	NR	8.6	2.2
8/29/2016	<.4	<.39	<.39	<1.2	<.48	<.42	<.42	<.42	<.42

NR - Not Reported by the lab

Table 3: Ground Water Level Measurements

Wagner Oil Spill
Hwy 45 near Aniwa, Wisconsin
Meridian No. 05C817

TMW-1 (installed May 25, 2016) (screened 9-14 ft below grade)		
Surface Elevation (ft)		
Top of Casing elevation (ft)		
Top of Screen Elevation (ft)		
Bottom of Screen Elevation (ft)		
Meas. Date	DTW (ft)	GW Elev (ft)
CAN NOT LOCATE WELL		

TMW-2 (installed May 25, 2016) (screened 6-11 ft below grade)		
Surface Elevation (ft)		
Top of Casing elevation (ft)		
Top of Screen Elevation (ft)		
Bottom of Screen Elevation (ft)		
Meas. Date	DTW (ft)	GW Elev (ft)
CAN NOT LOCATE WELL		

TMW-3 (installed May 25, 2016)		
Surface Elevation (ft)		104.5
Top of Casing elevation (ft)		104.36
Top of Screen Elevation (ft)		93.5
Bottom of Screen Elevation (ft)		88.5
Meas. Date	DTW (ft)	GW Elev (ft)
8/29/2016	9.97	94.39

TMW-4 (installed May 25, 2016)		
Surface Elevation (ft)		100.5
Top of Casing elevation (ft)		100.44
Top of Screen Elevation (ft)		97.5
Bottom of Screen Elevation (ft)		92.5
Meas. Date	DTW (ft)	GW Elev (ft)
8/29/2016	5.47	94.97

TMW-5 (installed May 25, 2016)		
Surface Elevation (ft)		101.75
Top of Casing elevation (ft)		101.61
Top of Screen Elevation (ft)		98.75
Bottom of Screen Elevation (ft)		93.75
Meas. Date	DTW (ft)	GW Elev (ft)
8/29/2016	6.67	94.94

MW-1 (installed Aug. 10, 2016)		
Surface Elevation (ft)		100.25
Top of Casing elevation (ft)		100
Top of Screen Elevation (ft)		98
Bottom of Screen Elevation (ft)		88
Meas. Date	DTW (ft)	GW Elev (ft)
8/29/2016	4.99	95.01

MW-2 (installed Aug. 10, 2016)		
Surface Elevation (ft)		106
Top of Casing elevation (ft)		105.89
Top of Screen Elevation (ft)		98
Bottom of Screen Elevation (ft)		88
Meas. Date	DTW (ft)	GW Elev (ft)
8/29/2016	11.41	94.48

MW-3 (installed Aug. 10, 2016)		
Surface Elevation (ft)		102.25
Top of Casing elevation (ft)		102.17
Top of Screen Elevation (ft)		99.25
Bottom of Screen Elevation (ft)		89.25
Meas. Date	DTW (ft)	GW Elev (ft)
8/29/2016	7.21	94.96

Table 4: Natural Attenuation Field Measurements

Wagner Oil Spill
Hwy 45 near Aniwa, Wisconsin
Meridian No. 05C817

Well	DO	pH	Temp	Conductivity	ORP
MW-1					
8/29/2016	0	7.7	17.6	511	12
MW-2		8.16	15.3	773	31
8/29/2016	0				
MW-3					
8/29/2016	0	too muddy			
TMW-3					
8/29/2016	<1	too muddy			
TMW-4					
8/29/2016	1	too muddy			
TMW-5					
8/29/2016	3	too muddy			
Pond					
8/29/2016	8				

FIGURES

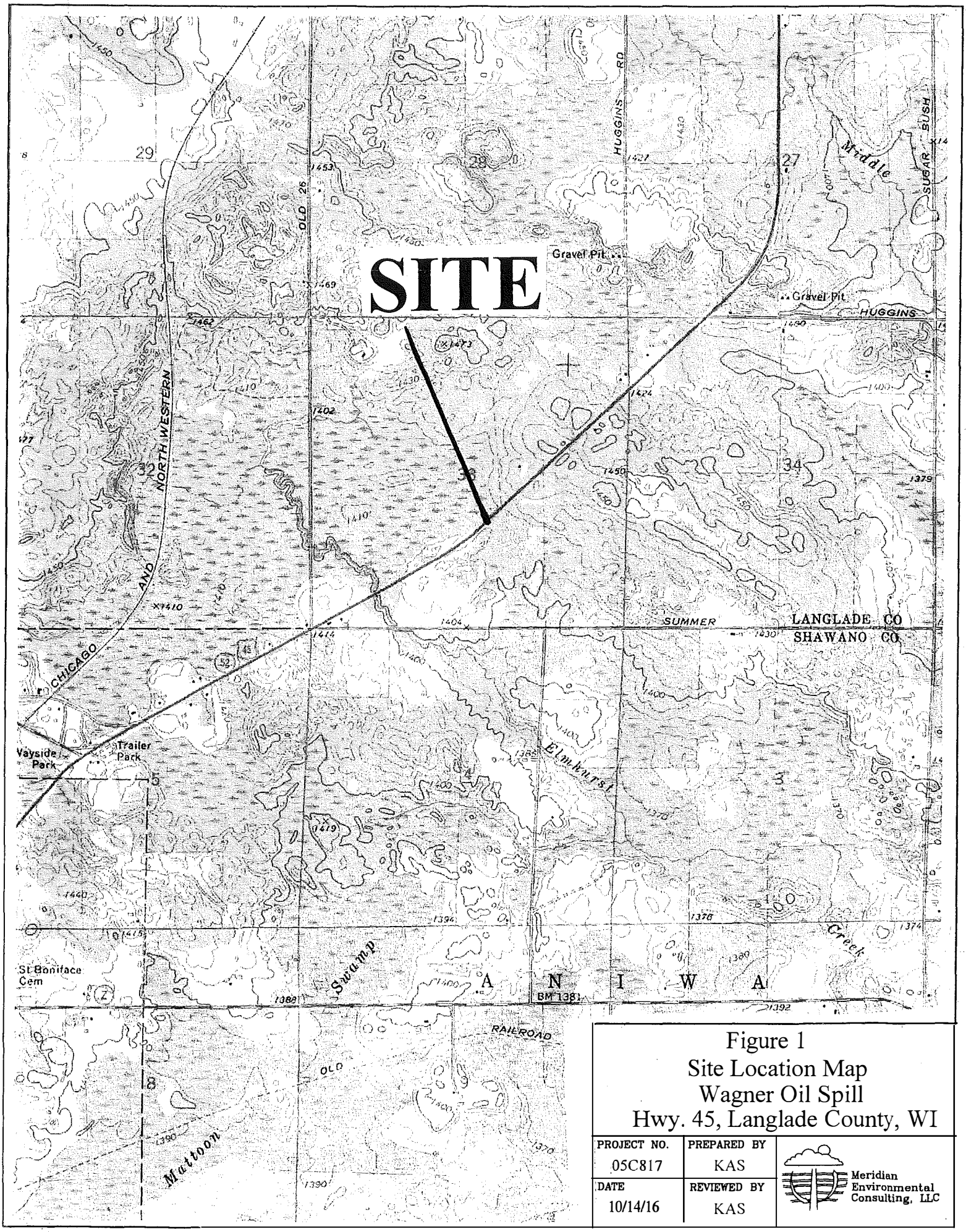


Figure 1
Site Location Map
Wagner Oil Spill
Hwy. 45, Langlade County, WI

PROJECT NO.	PREPARED BY
05C817	KAS
DATE	REVIEWED BY
10/14/16	KAS

Meridian Environmental Consulting, LLC

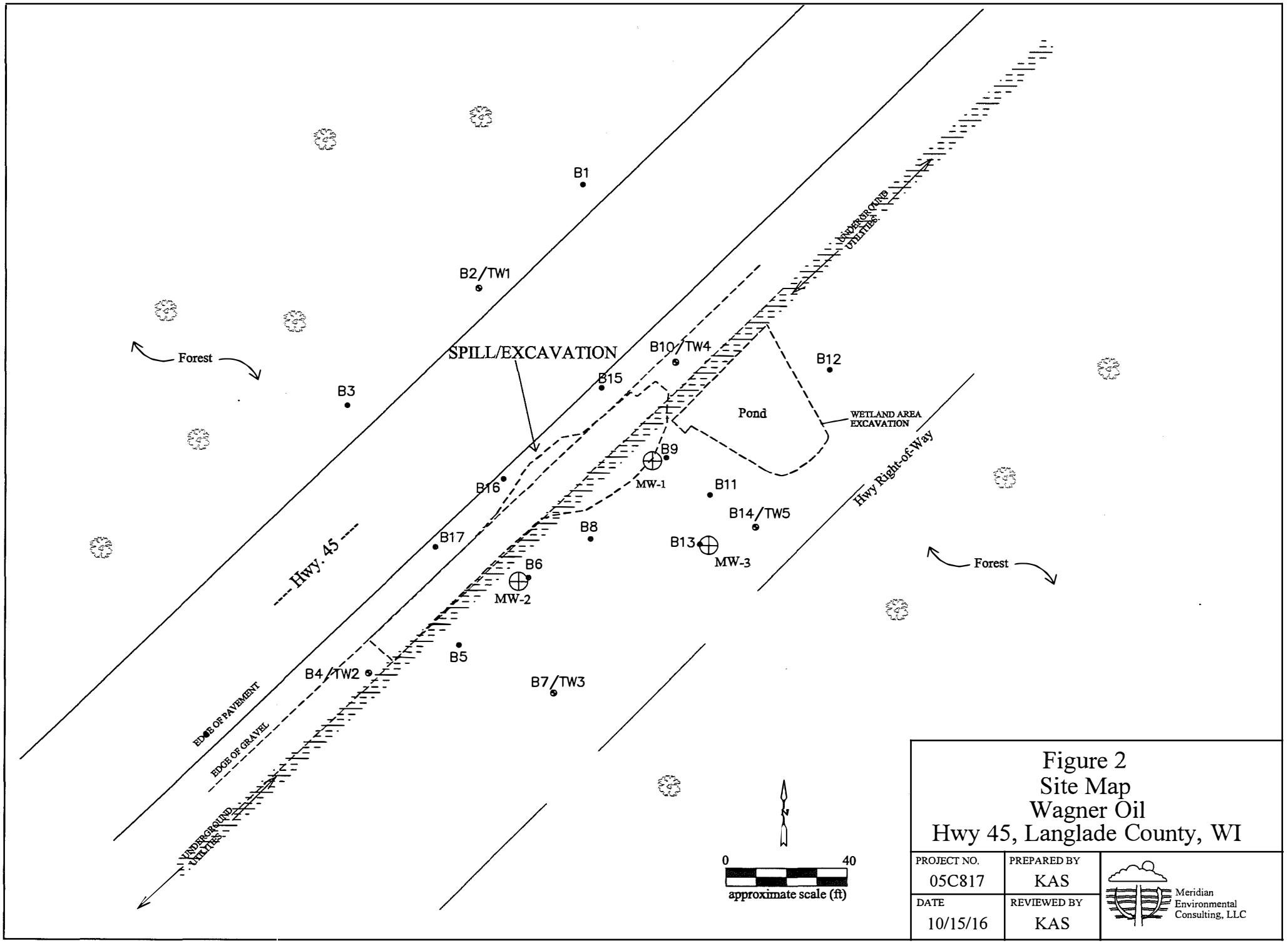


Figure 2
Site Map
Wagner Oil
Hwy 45, Langlade County, WI

PROJECT NO.	PREPARED BY
05C817	KAS
DATE	REVIEWED BY
10/15/16	KAS

Meridian Environmental Consulting, LLC

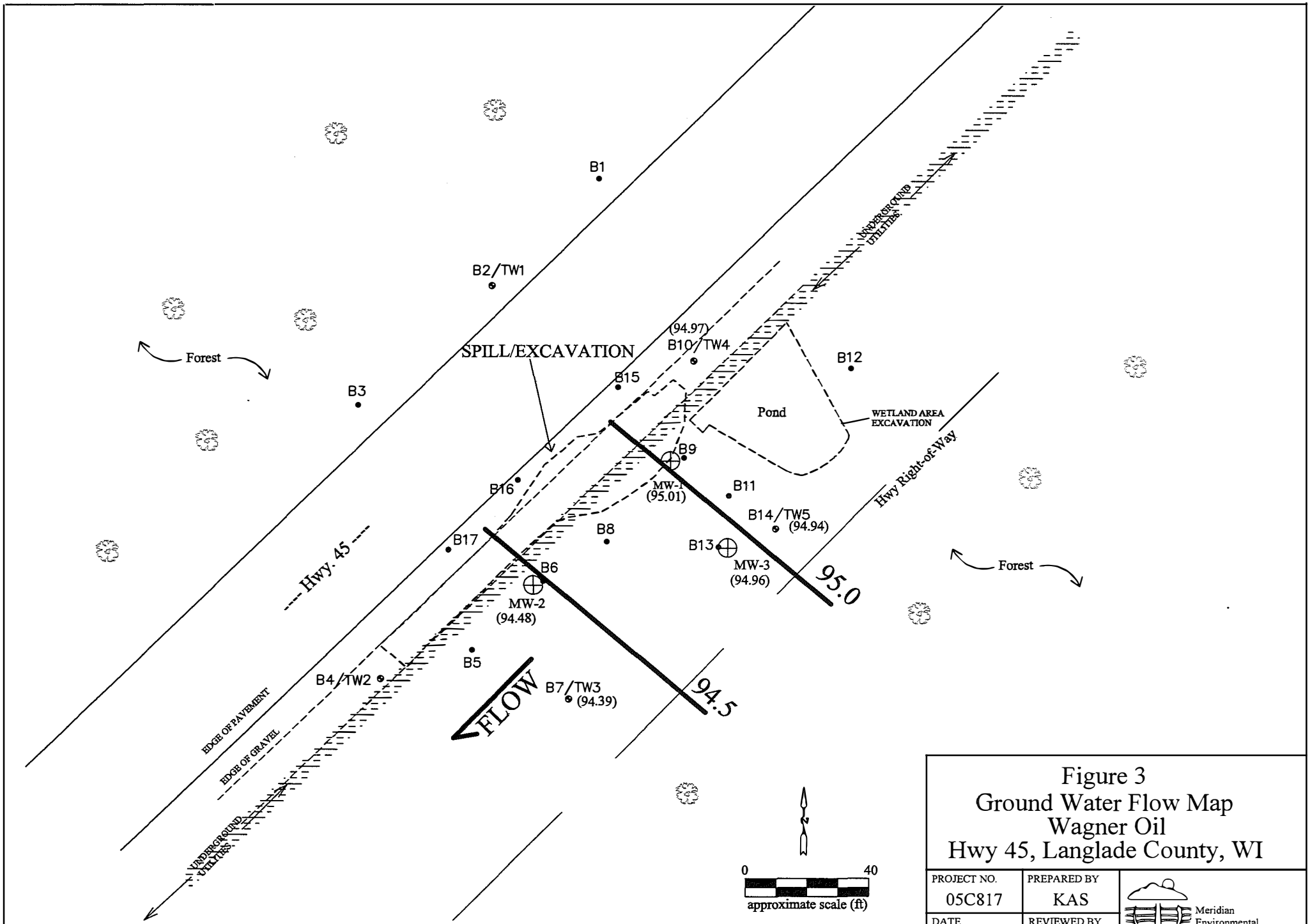


Figure 3
Ground Water Flow Map
Wagner Oil
Hwy 45, Langlade County, WI

PROJECT NO.	PREPARED BY
05C817	KAS
DATE	REVIEWED BY
10/13/16	KAS

Meridian Environmental Consulting, LLC

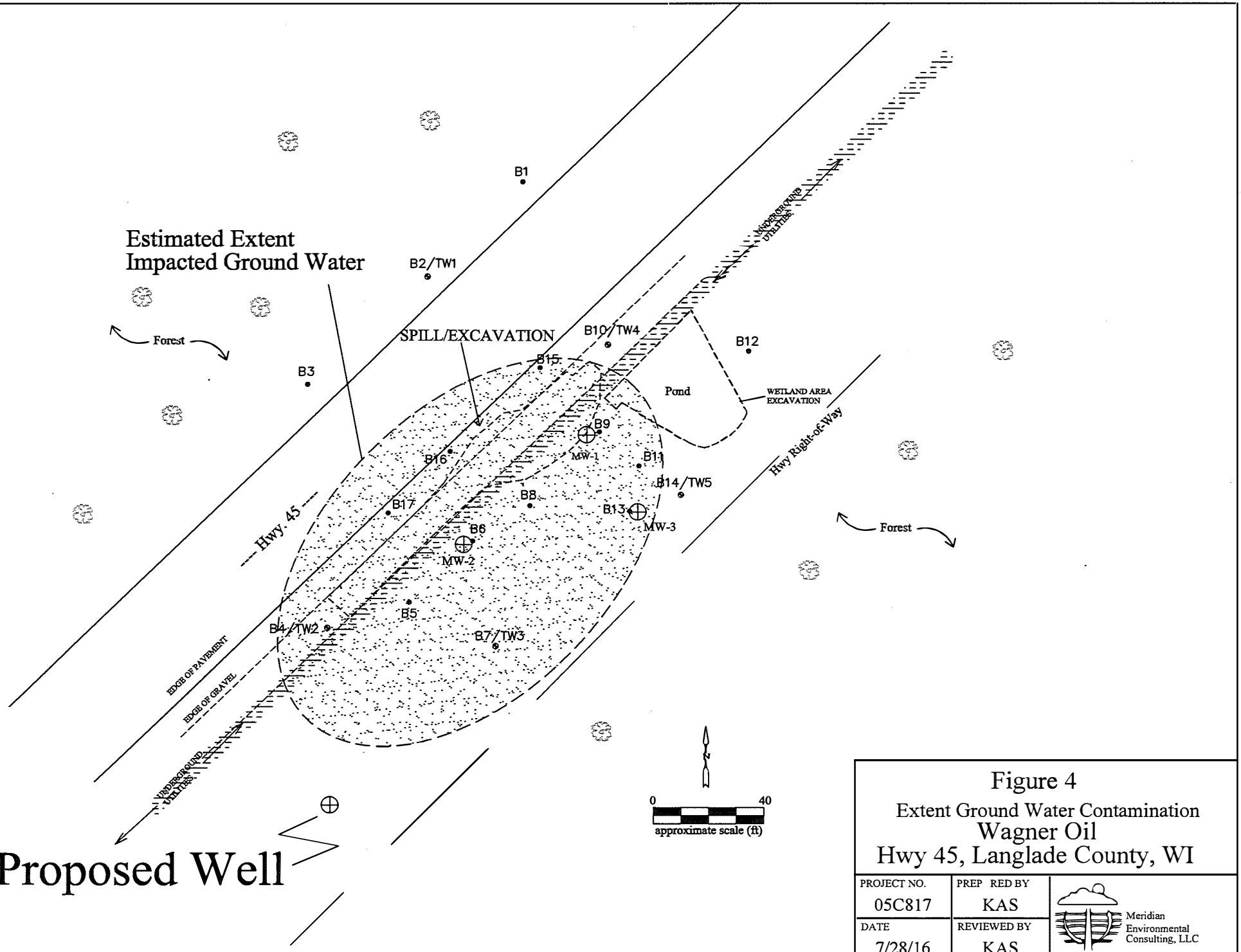


Figure 4

Extent Ground Water Contamination

Wagner Oil

Hwy 45, Langlade County, WI

PROJECT NO.	PREP RED BY
05C817	KAS
DATE	REVIEWED BY
7/28/16	KAS

Meridian Environmental Consulting, LLC

APPENDIX A

Soil Boring Logs & Monitoring Well Forms

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Revelopment ☐ Other ☐ _____

Page 1 of 1

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Wagner Oil Spill - Hwy. 45		MW-1

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name: Darin Last Name: Firm: Geiss	8/10/16 (m m / d d / y y y y)	8/10/16 (m m / d d / y y y y)	HSA

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
_ _ _ _ _ _	_ _ _ _		_____ Feet MSL	_____ Feet MSL	_____ inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane _____ N, _____ E
_____ 1/4 of _____ 1/4 of Section _____, T _____ N, R _____
Lat ___ ° ___ ' ___ "
Long ___ ° ___ ' ___ "
Local Grid Location ☐ N ☐ E _____ Feet ☐ S _____ Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Langlade		Aniwa (Rolling Township)

Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet (Below ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				earth drill (see B9 log)										
			5											
			10											
				EOB = 13 ft.										
			15											
			20											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm Meridian Environmental Consulting, LLC

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐ _____

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

Facility/Project Name: Wagner – Hwy. 45 Spill	Local Grid Location of Well: ____ ft. ☐ N. ☐ S. ____ ft. ☐ E. ☐ W.	Well Name: MW-1
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ____ ° ____ ' ____ " Long. ____ ° ____ ' ____ " or	Wis. Unique Well No.	DNR Well ID No.
Facility ID	St. Plane ____ ft. N, ____ ft. E. S/C/N	Date Well Installed: 8/10/16 (m m d d y y y y)
Type of Well: Well Code ____/____	Section Location of Waste/Source: ____ 1/4 of ____ 1/4 of Sec. ____, T. ____ N. R. ____ ☐ E ☐ W	Well Installed By: Name (first, last) and Firm: Darin & Keith Geiss
Distance from Waste/Source ____ ft.	Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Gov. Lot Number: ____

A. Protective pipe, top elevation ____0____ ft. MSL

B. Well casing, top elevation ____0____ ft. MSL

C. Land surface elevation ____0____ ft. MSL

D. Surface seal, bottom ____ ft. MSL or ____1____ ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☑ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☑ No

14. Drilling method used: Rotary ☐ 50
Hollow Stem Auger ☑ 41
Other ☐ ____

15. Drilling fluid used: Water ☐ 02 Air ☐ 01
Drilling Mud ☐ 03 None ☐ 99

16. Drilling additives used? ☐ Yes ☐ No

Describe ____

17. Source of water (attach analysis, if required):
____

E. Bentonite seal, top ____ ft. MSL or ____2____ ft.

F. Fine sand, top ____ ft. MSL or ____2____ ft.

G. Filter pack, top ____ ft. MSL or ____2____ ft.

H. Screen joint, top ____ ft. MSL or ____3____ ft.

I. Well bottom ____ ft. MSL or ____13____ ft.

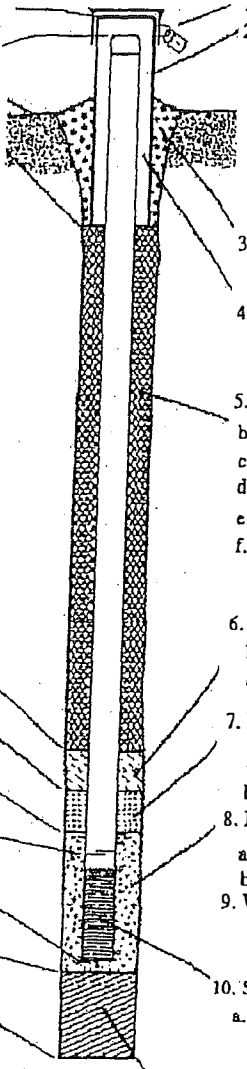
J. Filter pack, bottom ____ ft. MSL or ____13____ ft.

K. Borehole, bottom ____ ft. MSL or ____13____ ft.

L. Borehole, diameter ____2____ in.

M. O.D. well casing ____2____ in.

N. I.D. well casing ____2____ in.



1. Cap and lock? ☑ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: ____8____ in.
b. Length: ____1____ ft.
c. Material: Steel ☑ 04
Other ☐ ____
d. Additional protection? ☐ Yes ☐ No
If yes, describe: ____

3. Surface seal: Bentonite ☑ 30
Concrete ☐ 01
Other ☐ ____

4. Material between well casing and protective pipe:
Bentonite ☑ 30
Other ☐ ____

5. Annular space seal: a. Granular/Chipped Bentonite ☑ 33
b. ____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. ____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. ____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. ____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01
Tremie pumped ☐ 02
Gravity ☑ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐1/4 in. ☐3/8 in. ☐1/2 in. Bentonite chips ☑ 32
c. ____ Other ☐ ____

7. Fine sand material: Manufacturer, product name & mesh size
a. ____
b. Volume added ____ ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. ____
b. Volume added ____ ft^3

9. Well casing: Flush threaded PVC schedule 40 ☑ 23
Flush threaded PVC schedule 80 ☐ 24
Other ☐ ____

10. Screen material: PVC
a. Screen type: Factory cut ☑ 11
Continuous slot ☐ 01
Other ☐ ____
b. Manufacturer ____
c. Slot size: 0.1 in.
d. Slotted length: 10 ft.

11. Backfill material (below filter pack): None ☑ 14
Other ☐ ____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: [signature] Firm: Meridian Environmental Consulting, LLC

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐ _____

Facility/Project Name	County Name	Well Name
Wagner Oil Spill - Hwy. 45	Langlade	MW-1
Facility License, Permit or Monitoring Number	**County Code**	**Wis. Unique Well Number**	**DNR Well ID Number**

1. Can this well be purged dry? ☐ Yes ☐ No
bail down but recovers

2. Well development method

surged with bailer and bailed	☑ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☐ 51
pumped slowly	☐ 50
Other _____	☐

3. Time spent developing well ~30 min.

4. Depth of well (from top of well casisng) 13.__ ft.

5. Inside diameter of well 2.__ in.

6. Volume of water in filter pack and well casing ~1.__ gal.

7. Volume of water removed from well ~1.__ gal.

8. Volume of water added (if any) ____.__ gal.

9. Source of water added _____

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 4.99 ft.	____.__ ft.
Date	b. 8/29/16 (m m d d y y y y)	8/29/16 (m m d d y y y y)
Time	c. __:__ ☐ a.m. ☐ p.m.	__:__ ☐ a.m. ☐ p.m.
12. Sediment in well bottom	____.__ inches	____.__ inches
13. Water clarity	Clear ☑ 10 Turbid ☐ 15 (Describe)	Clear ☐ 20 Turbid ☑ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	____.__ mg/l	____.__ mg/l
15. COD	____.__ mg/l	____.__ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Ken Last Name: Shimko
Firm: Meridian Environmental Consulting, LLC

17. Additional comments on development:
well bails down but recovers within 5-10 minutes

Name and Address of Facility Contact/Owner/Responsible Party
First Name: Ken Last Name: Shimko
Facility/Firm: Meridian Env. Cnslty, LLC
Street: 2711 N. Rice Rd
City/State/Zip: Fall Creek WI 54742

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: _____
Print Name: Kenneth Shimko
Firm: Meridian Environmental Consulting, LLC

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☐ Other ☐ _____

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

Facility/Project Name: Wagner – Hwy. 45 Spill	Local Grid Location of Well: ____ ft. ☐ N. ☐ S. ____ ft. ☐ E. ☐ W.	Well Name: MW-2
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ____ ° ____ ' ____ " Long. ____ ° ____ ' ____ " or	Wis. Unique Well No.	DNR Well ID No.
Facility ID: _____	St. Plane ____ ft. N, ____ ft. E. S/C/N	Date Well Installed: 8/10/16 (m m d d y y y y)
Type of Well: Well Code ____/____	Section Location of Waste/Source: ____ 1/4 of ____ 1/4 of Sec. ____ T. ____ N, R. ____ ☐ E ☐ W	Well Installed By: Name (first, last) and Firm: Darin + Keith Geiss
Distance from Waste/Source ____ ft.	Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Gov. Lot Number: ____

A. Protective pipe, top elevation ___0___ ft. MSL

B. Well casing, top elevation ___0___ ft. MSL

C. Land surface elevation ___0___ ft. MSL

D. Surface seal, bottom _____ ft. MSL or ___1___ ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☑ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☑ No

14. Drilling method used: Rotary ☐ 50 Hollow Stem Auger ☑ 41 Other ☐ _____

15. Drilling fluid used: Water ☐ 02 Air ☐ 01 Drilling Mud ☐ 03 None ☑ 99

16. Drilling additives used? ☐ Yes ☐ No

Describe _____

17. Source of water (attach analysis, if required):

_____

E. Bentonite seal, top _____ ft. MSL or ___6___ ft.

F. Fine sand, top _____ ft. MSL or ___6___ ft.

G. Filter pack, top _____ ft. MSL or ___6___ ft.

H. Screen joint, top _____ ft. MSL or ___8___ ft.

I. Well bottom _____ ft. MSL or ___18___ ft.

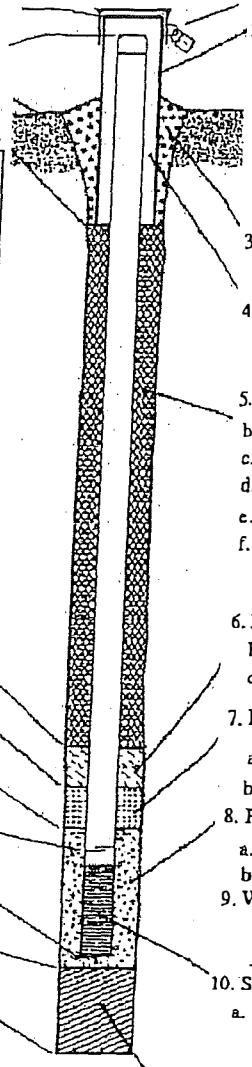
J. Filter pack, bottom _____ ft. MSL or ___18___ ft.

K. Borehole, bottom _____ ft. MSL or ___18___ ft.

L. Borehole, diameter ___8___ in.

M. O.D. well casing ___2___ in.

N. I.D. well casing ___2___ in.



1. Cap and lock? ☑ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: ___8___ in.
b. Length: ___1___ ft.
c. Material: Steel ☑ 04 Other ☐ _____
d. Additional protection? ☐ Yes ☐ No
If yes, describe: _____

3. Surface seal: Bentonite ☑ 30 Concrete ☐ 01 Other ☐ _____

4. Material between well casing and protective pipe: Bentonite ☑ 30 Other ☐ _____

5. Annular space seal: a. Granular/Chipped Bentonit ☑ 33
b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. _____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. _____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01 Tremie pumped ☐ 02 Gravity ☑ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite chips ☑ 32
c. _____ Other ☐ _____

7. Fine sand material: Manufacturer, product name & mesh size
a. _____
b. Volume added _____ ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. _____
b. Volume added _____ ft^3

9. Well casing: Flush threaded PVC schedule 40 ☑ 23 Flush threaded PVC schedule 80 ☐ 24 Other ☐ _____

10. Screen material: PVC
a. Screen type: Factory cut ☑ 11 Continuous slot ☐ 01 Other ☐ _____
b. Manufacturer _____
c. Slot size: 0.___1___ in.
d. Slotted length: ___10___ ft.

11. Backfill material (below filter pack): None ☑ 14 Other ☐ _____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm: Meridian Environmental Consulting, LLC

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, of imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Revelopment ☐ Other ☐ _____

Page 1 of 1

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Wagner Oil Spill - Hwy. 45		MW-2

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name: Darin Last Name: Geiss Firm:	8/10/16	8/10/16	HSA

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			_____ Feet MSL	_____ Feet MSL	_____ inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane _____ N, _____ E
_____ 1/4 of _____ 1/4 of Section _____, T _____ N, R _____
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E _____ Feet ☐ S _____ Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Langlade		Aniwa (Rolling Township)

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet (Below ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				Earth Drill (see B6 & B5 logs)			2" PVC							
			5											
			10											
			15											
			20											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm Meridian Environmental Consulting, LLC

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State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐ _____

Facility/Project Name	County Name	Well Name
Wagner Oil Spill - Hwy. 45	Langlade	MW-2

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number

1. Can this well be purged dry? ☐ Yes ☐ No
bail down but recover

2. Well development method

surged with bailer and bailed	☑ 41
surged with bailer and pumped	☐ 61
surged with block and bailed	☐ 42
surged with block and pumped	☐ 62
surged with block, bailed and pumped	☐ 70
compressed air	☐ 20
bailed only	☐ 10
pumped only	☐ 51
pumped slowly	☐ 50
Other _____	☐

3. Time spent developing well ~30 min.

4. Depth of well (from top of well casing) 18. ft.

5. Inside diameter of well 2. in.

6. Volume of water in filter pack and well casing ~2. gal.

7. Volume of water removed from well ~2. gal.

8. Volume of water added (if any) ____. gal.

9. Source of water added _____

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 11.41 ft.	~17. ft.
Date	b. 8/29/16 (m m d d y y y y)	8/29/16 (m m d d y y y y)
Time	c. ___:___ ☐ a.m. ☐ p.m.	___:___ ☐ a.m. ☐ p.m.
12. Sediment in well bottom	___.___ inches	___.___ inches
13. Water clarity	Clear ☒ 10 Turbid ☐ 15 (Describe)	Clear ☐ 20 Turbid ☒ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	_____.__ mg/l	_____.__ mg/l
15. COD	_____.__ mg/l	_____.__ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: Ken Last Name: Shimko
Firm: Meridian Environmental Consultants, LLC

17. Additional comments on development:
well bails down but recovers within 5-10 minutes

Name and Address of Facility Contact /Owner/Responsible Party
First Name: Ken Last Name: Shimko
Facility/Firm: Meridian Env. Cslts, LLC
Street: 2711 N. Rice Rd
City/State/Zip: Fall Creek WI 54742

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: _____
Print Name: Kenneth Shimko
Firm: Meridian Environmental Consultants, LLC

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Revelopment ☐ Other ☐ _____

Page 1 of 1

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
Wagner Oil Spill - Hwy. 45		MW-3

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
First Name: Darin Last Name: Firm: Geiss	8/10/16	8/10/16	HSA

WI Unique Well No.	DNR Well ID No.	Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			_____ Feet MSL	_____ Feet MSL	_____ inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☐
State Plane _____ N, _____ E
_____ 1/4 of _____ 1/4 of Section _____, T _____ N, R _____
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E _____ Feet ☐ S _____ Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Langlade		Aniwa (Rolling Township)

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet (Below ground surface)	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			5	Earth drill (see B13 log)			2" PVC							
			10											
			15	EOB = 13 ft. refusal at 13 ft. (boulder)										
			20											

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm Meridian Environmental Consulting, LLC

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐ Remediation/Redevelopment ☐ Other ☐ _____

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

Facility/Project Name: Wagner – Hwy. 45 Spill	Local Grid Location of Well: _____ ft. ☐N ☐S _____ ft. ☐E ☐W	Well Name: MW-3
Facility License, Permit or Monitoring No.	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. ° ' " Long. ° ' " or	Wis. Unique Well No.	DNR Well ID No.
Facility ID	St. Plane _____ ft. N, _____ ft. E. S/C/N	Date Well Installed: 8, 10, 16 (m m d d y y y y)
Type of Well: Well Code ____/____	Section Location of Waste/Source: ____ 1/4 of ____ 1/4 of Sec. ____ T. ____ N. R. ____ ☐E ☐W	Well Installed By: Name (first, last) and Firm: Darin + Keith Geiss
Distance from Waste/Source _____ ft.	Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Gov. Lot Number

A. Protective pipe, top elevation 0 ft. MSL

B. Well casing, top elevation 0 ft. MSL

C. Land surface elevation 0 ft. MSL

D. Surface seal, bottom _____ ft. MSL or 1 ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☑ SC ☐ ML ☐ MH ☐ CL ☐ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☑ No

14. Drilling method used: Rotary ☐ 50 Hollow Stem Auger ☑ 41 Other ☐ _____

15. Drilling fluid used: Water ☐ 02 Air ☐ 01 Drilling Mud ☐ 03 None ☐ 99

16. Drilling additives used? ☐ Yes ☐ No
Describe _____

17. Source of water (attach analysis, if required):
_____

E. Bentonite seal, top _____ ft. MSL or 2 ft.

F. Fine sand, top _____ ft. MSL or 2 ft.

G. Filter pack, top _____ ft. MSL or 2 ft.

H. Screen joint, top _____ ft. MSL or 3 ft.

I. Well bottom _____ ft. MSL or 13 ft.

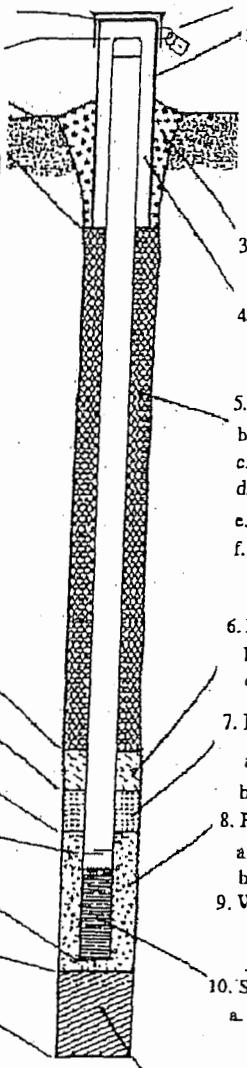
J. Filter pack, bottom _____ ft. MSL or 13 ft.

K. Borehole, bottom _____ ft. MSL or 13 ft.

L. Borehole, diameter 8 in.

M. O.D. well casing 2 in.

N. I.D. well casing 2 in.



1. Cap and lock? ☑ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: 8 in.
b. Length: 1 ft.
c. Material: Steel ☑ 04 Other ☐ _____
d. Additional protection? ☐ Yes ☐ No
If yes, describe: _____

3. Surface seal: Bentonite ☑ 30 Concrete ☐ 01 Other ☐ _____

4. Material between well casing and protective pipe: Bentonite ☑ 30 Other ☐ _____

5. Annular space seal: a. Granular/Chipped Bentonite ☑ 33
b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. _____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. _____ Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01 Tremie pumped ☐ 02 Gravity ☑ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐1/4 in. ☐3/8 in. ☐1/2 in. Bentonite chips ☑ 32
c. _____ Other ☐ _____

7. Fine sand material: Manufacturer, product name & mesh size
a. _____
b. Volume added _____ ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. _____
b. Volume added _____ ft^3

9. Well casing: Flush threaded PVC schedule 40 ☑ 23 Flush threaded PVC schedule 80 ☐ 24 Other ☐ _____

10. Screen material: PVC
a. Screen type: Factory cut ☑ 11 Continuous slot ☐ 01 Other ☐ _____
b. Manufacturer _____
c. Slot size: 0.1 in.
d. Slotted length: 10 ft.

11. Backfill material (below filter pack): None ☑ 14 Other ☐ _____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm: Meridian Environmental Consulting, LLC

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☐ Other ☐ _____

Facility/Project Name	County Name	Well Name
Wagner Oil Spill - Hwy. 45	Langlade	MW-3

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number

1. Can this well be purged dry? ☐ Yes ☐ No
bail down but recover

2. Well development method

surged with bailer and bailed	☑	41
surged with bailer and pumped	☐	61
surged with block and bailed	☐	42
surged with block and pumped	☐	62
surged with block, bailed and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
Other _____	☐	

3. Time spent developing well ~30 min.

4. Depth of well (from top of well casisng) 13. ft.

5. Inside diameter of well 2. in.

6. Volume of water in filter pack and well casing ~1. gal.

7. Volume of water removed from well ~1. gal.

8. Volume of water added (if any) ____. gal.

9. Source of water added _____

10. Analysis performed on water added? ☐ Yes ☐ No
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 7.21 ft.	~12. ft.
Date	b. 8/29/16 (m m d d y y y y)	8/29/16 (m m d d y y y y)
Time	c. ___:___ ☐ a.m. ☐ p.m.	___:___ ☐ a.m. ☐ p.m.
12. Sediment in well bottom	___.__ inches	___.__ inches
13. Water clarity	Clear ☑ 10 Turbid ☐ 15 (Describe)	Clear ☐ 20 Turbid ☑ 25 (Describe)
14. Total suspended solids	_____.__ mg/l	_____.__ mg/l
15. COD	_____.__ mg/l	_____.__ mg/l

Fill in if drilling fluids were used and well is at solid waste facility:

16. Well developed by: Name (first, last) and Firm
First Name: Ken Last Name: Shimko
Firm: Meridian Environmental Consultancy, LLC

17. Additional comments on development:
well bails down but recovers within 5-10 minutes

Name and Address of Facility Contact/Owner/Responsible Party
First Name: Ken Last Name: Shimko
Facility/Firm: Meridian Env. Cnslty LLC
Street: 2711 N. Rice Rd
City/State/Zip: Fall Creek WI 54742

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: _____
Print Name: Kenneth Shimko
Firm: Meridian Environmental Consultancy, LLC

NOTE: See instructions for more information including a list of county codes and well type codes.

APPENDIX B

Analytical Reports

Pace Analytical®
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1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

September 06, 2016

Kenneth Shimko
Meridian Environmental Consulting, LLC
2711 North Elco Rd
Fall Creek, WI 54742

RE: Project: WAGNER
Pace Project No.: 40137485

Dear Kenneth Shimko:
Enclosed are the analytical results for sample(s) received by the laboratory on August 31, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Brian Basten
brian.basten@pacelabs.com
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: WAGNER
Pace Project No.: 40137485

Green Bay Certification IDs
1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
Virginia VELAP ID: 460263
North Dakota Certification #: R-150
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
US Dept of Agriculture #: S-76505
Virginia VELAP Certification ID: 460263
Virginia VELAP ID: 460263
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444

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SAMPLE SUMMARY

Project: WAGNER
Pace Project No.: 40137485

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40137485001	MW-1	Water	08/29/16 00:00	08/31/16 07:30
40137485002	MW-2	Water	08/29/16 00:00	08/31/16 07:30
40137485003	MW-3	Water	08/29/16 00:00	08/31/16 07:30
40137485004	TW-3	Water	08/29/16 00:00	08/31/16 07:30
40137485005	TW-4	Water	08/29/16 00:00	08/31/16 07:30
40137485006	TW-5	Water	08/29/16 00:00	08/31/16 07:30
40137485007	POND	Water	08/29/16 00:00	08/31/16 07:30
40137485008	TRIP BLANK	Water	08/29/16 00:00	08/31/16 07:30

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SAMPLE ANALYTE COUNT

Project: WAGNER
Pace Project No.: 40137485

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40137485001	**MW-1**	WI MOD GRO	PMS	9	PASI-G
40137485002	**MW-2**	WI MOD GRO	PMS	9	PASI-G
40137485003	**MW-3**	WI MOD GRO	PMS	9	PASI-G
40137485004	**TW-3**	WI MOD GRO	PMS	9	PASI-G
40137485005	**TW-4**	WI MOD GRO	PMS	9	PASI-G
40137485006	**TW-5**	WI MOD GRO	PMS	9	PASI-G
40137485007	**POND**	WI MOD GRO	PMS	9	PASI-G
40137485008	**TRIP BLANK**	WI MOD GRO	PMS	9	PASI-G

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PROJECT NARRATIVE

Project: WAGNER
Pace Project No.: 40137485

Method: **WI MOD GRO**
Description: WIGRO GCV
Client: Meridian Environmental Consulting, LLC
Date: September 06, 2016

General Information:
8 samples were analyzed for WI MOD GRO. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

pH: Post-analysis pH measurement indicates insufficient VOA sample preservation.
- POND (Lab ID: 40137485007)

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 233972

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 40137496010

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
- MSD (Lab ID: 1386446)
  - Methyl-tert-butyl ether

Additional Comments:

Analyte Comments:

QC Batch: 233849

D3: Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
- TW-4 (Lab ID: 40137485005)
  - a,a,a-Trifluorotoluene (S)

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: WAGNER
Pace Project No.: 40137485

Sample: MW-1 **Lab ID: 40137485001** Collected: 08/29/16 00:00 Received: 08/31/16 07:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	**6630**	ug/L	125	49.5	125		09/01/16 17:25	71-43-2	
Ethylbenzene	**1980**	ug/L	125	49.1	125		09/01/16 17:25	100-41-4	
Methyl-tert-butyl ether	**<60.6**	ug/L	125	60.6	125		09/01/16 17:25	1634-04-4	
Naphthalene	**299**	ug/L	125	53.0	125		09/01/16 17:25	91-20-3	
Toluene	**18600**	ug/L	125	48.5	125		09/01/16 17:25	108-88-3	
1,2,4-Trimethylbenzene	**1500**	ug/L	125	52.2	125		09/01/16 17:25	95-63-6	
1,3,5-Trimethylbenzene	**386**	ug/L	125	52.0	125		09/01/16 17:25	108-67-8	
Xylene (Total)	**10700**	ug/L	375	156	125		09/01/16 17:25	1330-20-7	
Surrogates									
a,a,a-Trifluorotoluene (S)	103	%	80-120		125		09/01/16 17:25	98-08-8	

Sample: MW-2 **Lab ID: 40137485002** Collected: 08/29/16 00:00 Received: 08/31/16 07:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	**10100**	ug/L	125	49.5	125		09/01/16 17:50	71-43-2	
Ethylbenzene	**1160**	ug/L	125	49.1	125		09/01/16 17:50	100-41-4	
Methyl-tert-butyl ether	**<60.6**	ug/L	125	60.6	125		09/01/16 17:50	1634-04-4	
Naphthalene	**161**	ug/L	125	53.0	125		09/01/16 17:50	91-20-3	
Toluene	**18000**	ug/L	125	48.5	125		09/01/16 17:50	108-88-3	
1,2,4-Trimethylbenzene	**689**	ug/L	125	52.2	125		09/01/16 17:50	95-63-6	
1,3,5-Trimethylbenzene	**160**	ug/L	125	52.0	125		09/01/16 17:50	108-67-8	
Xylene (Total)	**7110**	ug/L	375	156	125		09/01/16 17:50	1330-20-7	
Surrogates									
a,a,a-Trifluorotoluene (S)	99	%	80-120		125		09/01/16 17:50	98-08-8	

Sample: MW-3 **Lab ID: 40137485003** Collected: 08/29/16 00:00 Received: 08/31/16 07:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	**1430**	ug/L	20.0	7.9	20		09/01/16 18:41	71-43-2	
Ethylbenzene	**123**	ug/L	20.0	7.9	20		09/01/16 18:41	100-41-4	
Methyl-tert-butyl ether	**<9.7**	ug/L	20.0	9.7	20		09/01/16 18:41	1634-04-4	
Naphthalene	**19.5J**	ug/L	20.0	8.5	20		09/01/16 18:41	91-20-3	
Toluene	**1640**	ug/L	20.0	7.8	20		09/01/16 18:41	108-88-3	
1,2,4-Trimethylbenzene	**64.2**	ug/L	20.0	8.4	20		09/01/16 18:41	95-63-6	
1,3,5-Trimethylbenzene	**16.2J**	ug/L	20.0	8.3	20		09/01/16 18:41	108-67-8	
Xylene (Total)	**818**	ug/L	60.0	24.9	20		09/01/16 18:41	1330-20-7	
Surrogates									
a,a,a-Trifluorotoluene (S)	100	%	80-120		20		09/01/16 18:41	98-08-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: WAGNER
Pace Project No.: 40137485

Sample: TW-3 Lab ID: **40137485004** Collected: 08/29/16 00:00 Received: 08/31/16 07:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	**16.3**	ug/L	1.0	0.40	1		09/01/16 11:30	71-43-2	
Ethylbenzene	**<0.39**	ug/L	1.0	0.39	1		09/01/16 11:30	100-41-4	
Methyl-tert-butyl ether	**<0.48**	ug/L	1.0	0.48	1		09/01/16 11:30	1634-04-4	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		09/01/16 11:30	91-20-3	
Toluene	**4.8**	ug/L	1.0	0.39	1		09/01/16 11:30	108-88-3	
1,2,4-Trimethylbenzene	**<0.42**	ug/L	1.0	0.42	1		09/01/16 11:30	95-63-6	
1,3,5-Trimethylbenzene	**0.75J**	ug/L	1.0	0.42	1		09/01/16 11:30	108-67-8	
Xylene (Total)	**5.3**	ug/L	3.0	1.2	1		09/01/16 11:30	1330-20-7	
Surrogates									
a,a,a-Trifluorotoluene (S)	102	%	80-120		1		09/01/16 11:30	98-08-8	

Sample: TW-4 Lab ID: **40137485005** Collected: 08/29/16 00:00 Received: 08/31/16 07:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	**<2.0**	ug/L	5.0	2.0	5		09/01/16 20:24	71-43-2	
Ethylbenzene	**2.2J**	ug/L	5.0	2.0	5		09/01/16 20:24	100-41-4	
Methyl-tert-butyl ether	**<2.4**	ug/L	5.0	2.4	5		09/01/16 20:24	1634-04-4	
Naphthalene	**<2.1**	ug/L	5.0	2.1	5		09/01/16 20:24	91-20-3	
Toluene	**30.9**	ug/L	5.0	1.9	5		09/01/16 20:24	108-88-3	
1,2,4-Trimethylbenzene	**<2.1**	ug/L	5.0	2.1	5		09/01/16 20:24	95-63-6	
1,3,5-Trimethylbenzene	**<2.1**	ug/L	5.0	2.1	5		09/01/16 20:24	108-67-8	
Xylene (Total)	**12.1J**	ug/L	15.0	6.2	5		09/01/16 20:24	1330-20-7	
Surrogates									
a,a,a-Trifluorotoluene (S)	106	%	80-120		5		09/01/16 20:24	98-08-8	D3,F1

Sample: TW-5 Lab ID: **40137485006** Collected: 08/29/16 00:00 Received: 08/31/16 07:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	**<4.0**	ug/L	10.0	4.0	10		09/02/16 11:16	71-43-2	
Ethylbenzene	**<3.9**	ug/L	10.0	3.9	10		09/02/16 11:16	100-41-4	
Methyl-tert-butyl ether	**<4.8**	ug/L	10.0	4.8	10		09/02/16 11:16	1634-04-4	
Naphthalene	**<4.2**	ug/L	10.0	4.2	10		09/02/16 11:16	91-20-3	
Toluene	**<3.9**	ug/L	10.0	3.9	10		09/02/16 11:16	108-88-3	
1,2,4-Trimethylbenzene	**<4.2**	ug/L	10.0	4.2	10		09/02/16 11:16	95-63-6	
1,3,5-Trimethylbenzene	**<4.2**	ug/L	10.0	4.2	10		09/02/16 11:16	108-67-8	
Xylene (Total)	**<12.5**	ug/L	30.0	12.5	10		09/02/16 11:16	1330-20-7	
Surrogates									
a,a,a-Trifluorotoluene (S)	105	%	80-120		10		09/02/16 11:16	98-08-8	F1

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ANALYTICAL RESULTS

Project: WAGNER
Pace Project No.: 40137485

Sample: POND **Lab ID: 40137485007** Collected: 08/29/16 00:00 Received: 08/31/16 07:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	**<0.40**	ug/L	1.0	0.40	1		09/02/16 12:33	71-43-2	
Ethylbenzene	**<0.39**	ug/L	1.0	0.39	1		09/02/16 12:33	100-41-4	
Methyl-tert-butyl ether	**<0.48**	ug/L	1.0	0.48	1		09/02/16 12:33	1634-04-4	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		09/02/16 12:33	91-20-3	
Toluene	**<0.39**	ug/L	1.0	0.39	1		09/02/16 12:33	108-88-3	
1,2,4-Trimethylbenzene	**<0.42**	ug/L	1.0	0.42	1		09/02/16 12:33	95-63-6	
1,3,5-Trimethylbenzene	**<0.42**	ug/L	1.0	0.42	1		09/02/16 12:33	108-67-8	
Xylene (Total)	**<1.2**	ug/L	3.0	1.2	1		09/02/16 12:33	1330-20-7	
Surrogates									
a,a,a-Trifluorotoluene (S)	105	%	80-120		1		09/02/16 12:33	98-08-8	HS,pH

Sample: TRIP BLANK **Lab ID: 40137485008** Collected: 08/29/16 00:00 Received: 08/31/16 07:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	**<0.40**	ug/L	1.0	0.40	1		09/02/16 14:16	71-43-2	
Ethylbenzene	**<0.39**	ug/L	1.0	0.39	1		09/02/16 14:16	100-41-4	
Methyl-tert-butyl ether	**<0.48**	ug/L	1.0	0.48	1		09/02/16 14:16	1634-04-4	
Naphthalene	**<0.42**	ug/L	1.0	0.42	1		09/02/16 14:16	91-20-3	
Toluene	**<0.39**	ug/L	1.0	0.39	1		09/02/16 14:16	108-88-3	
1,2,4-Trimethylbenzene	**<0.42**	ug/L	1.0	0.42	1		09/02/16 14:16	95-63-6	
1,3,5-Trimethylbenzene	**<0.42**	ug/L	1.0	0.42	1		09/02/16 14:16	108-67-8	
Xylene (Total)	**<1.2**	ug/L	3.0	1.2	1		09/02/16 14:16	1330-20-7	
Surrogates									
a,a,a-Trifluorotoluene (S)	103	%	80-120		1		09/02/16 14:16	98-08-8	

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QUALITY CONTROL DATA

Project: WAGNER
Pace Project No.: 40137485

QC Batch: 233849 Analysis Method: WI MOD GRO
QC Batch Method: WI MOD GRO Analysis Description: WIGRO GCV Water
Associated Lab Samples: 40137485001, 40137485002, 40137485003, 40137485004, 40137485005

METHOD BLANK: 1385219 Matrix: Water
Associated Lab Samples: 40137485001, 40137485002, 40137485003, 40137485004, 40137485005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trimethylbenzene	ug/L	<0.42	1.0	09/01/16 08:56	
1,3,5-Trimethylbenzene	ug/L	<0.42	1.0	09/01/16 08:56	
Benzene	ug/L	<0.40	1.0	09/01/16 08:56	
Ethylbenzene	ug/L	<0.39	1.0	09/01/16 08:56	
Methyl-tert-butyl ether	ug/L	<0.48	1.0	09/01/16 08:56	
Naphthalene	ug/L	<0.42	1.0	09/01/16 08:56	
Toluene	ug/L	<0.39	1.0	09/01/16 08:56	
Xylene (Total)	ug/L	<1.2	3.0	09/01/16 08:56	
a,a,a-Trifluorotoluene (S)	%	104	80-120	09/01/16 08:56	

LABORATORY CONTROL SAMPLE & LCSD: 1385220 1385221

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2,4-Trimethylbenzene	ug/L	20	18.6	19.8	93	99	80-120	6	20	
1,3,5-Trimethylbenzene	ug/L	20	17.9	19.2	90	96	80-120	7	20	
Benzene	ug/L	20	19.3	20.0	97	100	80-120	3	20	
Ethylbenzene	ug/L	20	18.5	19.5	93	97	80-120	5	20	
Methyl-tert-butyl ether	ug/L	20	20.0	20.8	100	104	80-120	4	20	
Naphthalene	ug/L	20	18.3	19.7	91	98	80-120	7	20	
Toluene	ug/L	20	19.0	19.7	95	99	80-120	4	20	
Xylene (Total)	ug/L	60	55.7	58.9	93	98	80-120	6	20	
a,a,a-Trifluorotoluene (S)	%				103	102	80-120			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1385418 1385419

Parameter	Units	40137430002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2,4-Trimethylbenzene	ug/L	<4.2	200	200	207	202	103	101	48-177	2	20	
1,3,5-Trimethylbenzene	ug/L	<4.2	200	200	200	197	100	98	73-145	2	20	
Benzene	ug/L	1230	200	200	1370	1330	70	53	74-139	2	20	
Ethylbenzene	ug/L	54.5	200	200	265	262	105	104	74-140	1	20	
Methyl-tert-butyl ether	ug/L	<4.8	200	200	209	192	105	96	80-120	9	20	
Naphthalene	ug/L	<4.2	200	200	197	186	98	93	73-133	6	20	
Toluene	ug/L	16.5	200	200	220	219	102	101	80-128	1	20	
Xylene (Total)	ug/L	82.9	600	600	667	656	97	95	69-143	2	20	
a,a,a-Trifluorotoluene (S)	%						96	97	80-120			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: WAGNER
Pace Project No.: 40137485

QC Batch: 233972 Analysis Method: WI MOD GRO
QC Batch Method: WI MOD GRO Analysis Description: WIGRO GCV Water
Associated Lab Samples: 40137485006, 40137485007, 40137485008

METHOD BLANK: 1386134 Matrix: Water
Associated Lab Samples: 40137485006, 40137485007, 40137485008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trimethylbenzene	ug/L	<0.42	1.0	09/02/16 09:07	
1,3,5-Trimethylbenzene	ug/L	<0.42	1.0	09/02/16 09:07	
Benzene	ug/L	<0.40	1.0	09/02/16 09:07	
Ethylbenzene	ug/L	<0.39	1.0	09/02/16 09:07	
Methyl-tert-butyl ether	ug/L	<0.48	1.0	09/02/16 09:07	
Naphthalene	ug/L	<0.42	1.0	09/02/16 09:07	
Toluene	ug/L	<0.39	1.0	09/02/16 09:07	
Xylene (Total)	ug/L	<1.2	3.0	09/02/16 09:07	
a,a,a-Trifluorotoluene (S)	%	104	80-120	09/02/16 09:07	

LABORATORY CONTROL SAMPLE & LCSD: 1386135 1386136

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2,4-Trimethylbenzene	ug/L	20	19.8	20.5	99	102	80-120	3	20	
1,3,5-Trimethylbenzene	ug/L	20	19.3	19.9	96	100	80-120	3	20	
Benzene	ug/L	20	20.5	20.8	102	104	80-120	1	20	
Ethylbenzene	ug/L	20	19.7	20.2	98	101	80-120	2	20	
Methyl-tert-butyl ether	ug/L	20	20.7	21.6	103	108	80-120	4	20	
Naphthalene	ug/L	20	19.0	20.6	95	103	80-120	8	20	
Toluene	ug/L	20	20.1	20.4	101	102	80-120	1	20	
Xylene (Total)	ug/L	60	58.6	60.5	98	101	80-120	3	20	
a,a,a-Trifluorotoluene (S)	%				103	102	80-120			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1386445 1386446

Parameter	Units	40137496010 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2,4-Trimethylbenzene	ug/L	744	200	200	989	1000	122	130	48-177	2	20	
1,3,5-Trimethylbenzene	ug/L	191	200	200	411	440	110	124	73-145	7	20	
Benzene	ug/L	<4.0	200	200	218	254	109	127	74-139	15	20	
Ethylbenzene	ug/L	309	200	200	532	553	112	122	74-140	4	20	
Methyl-tert-butyl ether	ug/L	<4.8	200	200	210	256	105	128	80-120	20	20	M1
Naphthalene	ug/L	255	200	200	463	512	104	129	73-133	10	20	
Toluene	ug/L	24.1	200	200	245	277	110	126	80-128	12	20	
Xylene (Total)	ug/L	2450	600	600	3180	3170	122	119	69-143	0	20	
a,a,a-Trifluorotoluene (S)	%						105	106	80-120			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: WAGNER
Pace Project No.: 40137485

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-G	Pace Analytical Services - Green Bay

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
F1	The sample was analyzed at a dilution due to foaming of the sample in the purge vessel.
HS	Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
pH	Post-analysis pH measurement indicates insufficient VOA sample preservation.

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WAGNER
Pace Project No.: 40137485

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40137485001	MW-1	WI MOD GRO	233849		
40137485002	MW-2	WI MOD GRO	233849		
40137485003	MW-3	WI MOD GRO	233849		
40137485004	TW-3	WI MOD GRO	233849		
40137485005	TW-4	WI MOD GRO	233849		
40137485006	TW-5	WI MOD GRO	233972		
40137485007	POND	WI MOD GRO	233972		
40137485008	TRIP BLANK	WI MOD GRO	233972		

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

Page 1 of

SKW

CHAIN OF CUSTODY

Pace Analytical®
www.pacelabs.com

(Please Print Clearly)	
Company Name:	Meridian Env Glh
Branch/Location:	
Project Contact:	Ken Shimko
Phone:	715-832-6608
Project Number:	
Project Name:	Wagner
Project State:	WI
Sampled By (Print):	Ken Shimko
Sampled By (Sign):	
PO #:	Regulatory Program:

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

Quote #:	40137485
Mail To Contact:	Ken Shimko
Mail To Company:	Meridian E. C.
Mail To Address:	2741 N. Falcon Rd Fall Creek, WI 54742
Invoice To Contact:	
Invoice To Company:	
Invoice To Address:	
Invoice To Phone:	

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes
A = Air, W = Water, B = Biota, DW = Drinking Water, C = Charcoal, GW = Ground Water, O = Oil, SW = Surface Water, S = Soil, WW = Waste Water, Sl = Sludge, WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO)	PRESERVATION (CODE)*	Analyses Requested: PVOC + Naph	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
001	MW-1	8/29		GW			X		3-40mlVB	
002	MW-2								↓	
003	MW-3								2-40mlVB	
004	TW-3								↓	
005	TW-4								3-40mlVB	
006	TW-5								2-40mlVB	
007	Pond									
008	① trip blanks									

① trip blank added by lab per samples received BH 8/31/16

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):
Email #1:
Email #2:
Telephone:
Fax:

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
	8/30/16 9am	Dunham	8/30/16 9am
Dunham	8/31/16 0730	pace	8/31/16 0730

PACE Project No.: 40137485
Receipt Temp = ROI °C
Sample Receipt pH: ~~OK~~ / Adjusted
Cooler Custody Seal: Present / (Not Present)
Intact / Not Intact

Version 6.0 06/14/06

C019a(27Jun2006)

ORIGINAL

Sample Condition Upon Receipt

Pace Analytical Services, Inc.
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Pace Analytical™

Project #: **WO# : 40137485**

40137485

Client Name: Meridian Environmental

Courier: ☐ Fed Ex ☐ UPS ☐ Client ☐ Pace Other: Dunham

Tracking #: 1207993

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Custody Seal on Samples Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other

Thermometer Used NA **Type of Ice:** (Wet) Blue Dry None BH 8/31/16 ☑ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: ROT /Corr: — **Biological Tissue is Frozen:** ☐ yes ☐ no

Temp Blank Present: ☐ yes ☑ no

Person examining contents:
Date: 8/31/16
Initials: BH

Temp should be above freezing to 6°C for all sample except Biota.
Frozen Biota Samples should be received ≤ 0°C.

			Comments:
Chain of Custody Present:	☑Yes	☐No ☐N/A	1.
Chain of Custody Filled Out:	☐Yes	☑No ☐N/A	2. NO collect times BH 8/31/16
Chain of Custody Relinquished:	☑Yes	☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes	☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes	☐No ☐N/A	5.
- VOA Samples frozen upon receipt	☐Yes	☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☐Yes	☑No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes	☑No ☐N/A	7.
Sufficient Volume:	☑Yes	☐No ☐N/A	8.
Correct Containers Used:	☑Yes	☐No ☐N/A	9.
-Pace Containers Used:	☑Yes	☐No ☐N/A	
-Pace IR Containers Used:	☐Yes	☐No ☑N/A	
Containers Intact:	☑Yes	☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes	☐No ☑N/A	11.
Sample Labels match COC:	☐Yes	☑No ☐N/A	12. no collect dates on samples 004 thru 006 - No "W" BH 8/31/16
-Includes date/time/ID/Analysis Matrix: W			
All containers needing preservation have been checked. (Non-Compliance noted in 13.)	☐Yes	☐No ☑N/A	13. ☐ HNO3 ☐ H2SO4 ☐ NaOH ☐ NaOH +ZnAct
All containers needing preservation are found to be in compliance with EPA recommendation. (HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)	☐Yes	☐No ☑N/A	
exceptions: VOA, coliform, TOC, TOX, TOH, O&G, WIDROW, Phenolics, OTHER:	☐Yes	☐No	Initial when completed / Lab Std #ID of preservative / Date/ Time:
Headspace in VOA Vials (>6mm):	☐Yes	☑No ☐N/A	14.
Trip Blank Present:	☑Yes	☐No ☐N/A	15. trip blank added to COC by lab per samples received BH 8/31/16
Trip Blank Custody Seals Present	☑Yes	☐No ☐N/A	
Pace Trip Blank Lot # (if purchased): 369			

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** 8-31-16

APPENDIX C

Private Well Logs

WISCONSIN UNIQUE WELL NUMBER **UC858**

Source: WELL CONSTRUCTION

State of Wi-Private Water Systems-DG/2
Department Of Natural Resources, Box 7921
Madison, WI 53707

Form 3300-77A
(Rev 02/02)bw

Property Owner: FULLER, CHRIS
Telephone Number: 715-789-3418
Depth 183 FT

Mailing Address: N11355 HUTCHINS-ANIWA TOWN LINE RD

City: BIRNAMWOOD | State: WI | Zip Code: 54414

County of Well Location: 34 LANGLADE
Co Well Permit No: NO W
Well Completion Date: June 22, 2007

1. Well Location
T=Town C=City V=Village: T of ROLLING
Fire#:
Street Address or Road Name and Number: W10480 NOW RD
Subdivision Name | Lot# | Block #

Well Constructor: KOEPPEL PHIL WELL DRLG LLC
License #: 6626
Facility ID (Public):
Address: W8060 S PARK RD
Public Well Plan Approval#:
City: ANTIGO | State: WI | Zip Code: 54409
Date Of Approval:
Hrcap Permanent Well #:
Common Well #:
Specific Capacity: gpm/ft

Gov't Lot or SE 1/4 of SW 1/4 of
Section 33 T 30 N R 11 E

2. Well Type 1 (See item 12 below)
1=New 2=Replacement 3=Reconstruction
of previous unique well # _____ constructed in _____
Reason for replaced or reconstructed Well?

3. Well Serves: P
# of homes and or (eg: barn, restaurant, church, school, industry, etc.)
M=Munic O=OTM N=NonCom P=Private Z=Other X=NonPot A=Anode L=Loop H=Drillhole

High Capacity: Well? N
Property? N

1 1=Drilled 2=Driven Point 3=Jetted 4=Other

4. Is the well located upslope or sideslope and not downslope from any contamination sources, including those on neighboring properties?
Well located in floodplain? N
Distance in feet from well to nearest: (including proposed)

1. Landfill
25 2. Building Overhang
3. 1=Septic 2= Holding Tank
4. Sewage Absorption Unit
5. Nonconforming Pit
6. Buried Home Heating Oil Tank
7. Buried Petroleum Tank
8. 1=Shoreline 2= Swimming Pool
9. Downspout/ Yard Hydrant
10. Privy
11. Foundation Drain to Clearwater
12. Foundation Drain to Sewer
13. Building Drain 1=Cast Iron or Plastic 2=Other
14. Building Sewer 1=Gravity 2=Pressure 1=Cast Iron or Plastic 2=Other
15. Collector Sewer: ___ units ___ in . diam.
35 16. Clearwater Sump
17. Wastewater Sump
18. Paved Animal Barn Pen
19. Animal Yard or Shelter
20. Silo
21. Barn Gutter
22. Manure Pipe 1=Gravity 2=Pressure 1=Cast iron or Plastic 2=Other
23. Other manure Storage
24. Ditch
25. Other NR 812 Waste Source

5. Drillhole Dimensions and Construction Method

Dia.(in.)	From (ft)	To (ft)
6.0	surface	183

Upper Enlarged Drillhole
-- 1. Rotary - Mud Circulation
-- 2. Rotary - Air X
-- 3. Rotary - Air and Foam
-- 4. Drill-Through Casing Hammer
-- 5. Reverse Rotary
-- 6. Cable-tool Bit _ n. dia
-- 7. Temp. Outer Casing _ in. dia. _____ depth ft. Removed ?
Other
Lower Open Bedrock

6. Casing Liner Screen Material, Weight, Specification

Dia. (in.)	Manufacturer & Method of Assembly	From (ft.)	To (ft.)
6.0	BLACK STEEL A53B 18.97 #/FT .280 INCH WELDED WHEATLAND	surface	63

Dia.(in.)	Screen type, material & slot size	From	To

7. Grout or Other Sealing Material
Method MOUNDED

Kind of Sealing Material	From (ft.)	To (ft.)	# Sacks Cement
#8 CECTO	surface		1.5 S

Geology Codes	8. Geology Type, Caving/Noncaving, Color, Hardness, etc	From (ft.)	To (ft.)
_VZS	NONCAVING SANDY CLAY & STONES	0	63
__Q_	GRANITE-RED & BLACK	63	183

9. Static Water Level
13.0 feet B ground surface
A=Above B=Below

10. Pump Test
Pumping level 180.0 ft. below surface
Pumping at 1.0 GP M 2.0 Hrs

11. Well Is: 36 in. A Grade
A=Above B=Below
Developed? Y
Disinfected? Y
Capped? Y

12. Did you notify the owner of the need to permanently abandon and fill all unused wells on this property?
If no, explain

13. Initials of Well Constructor or Supervisory Driller: PK
Date Signed: 7/3/07

Initials of Drill Rig Operator (Mandatory unless same as above)
Date Signed

Additonal Comments?
Owner Sent Label? Y
Variance Issued?
More Geology?

26358158

Batch 1081

WISCONSIN UNIQUE WELL NUMBER **NW472**

Source: WELL CONSTRUCTION

State of Wi-Private Water Systems-DG/2
Department Of Natural Resources, Box 7921
Madison, WI 53707

Form 3300-77A
(Rev 02/02)bw

Property Owner: STONE, PAT
Telephone Number: 715-449-2277
Depth 59 FT

Mailing Address: PO BOX 132

City: ANIWA | State: WI | Zip Code: 54408

County of Well Location: 34 LANGLADE | Co Well Permit No: NO W | Well Completion Date: August 31, 2000

Well Constructor: EDWARD J DREWS | License #: 327 | Facility ID (Public):

Address: R17071 KONKOL RD | Public Well Plan Approval#:

City: HATLEY | State: WI | Zip Code: 54440 | Date Of Approval:

Hicap Permanent Well # | Common Well # | Specific Capacity: .2 gpm/ft

1. Well Location

T=Town C=City V=Village: T of ROLLING | Fire#:

Street Address or Road Name and Number:

Subdivision Name: | Lot#: | Block #:

Gov't Lot or SW 1/4 of SE 1/4 of Section 33 T 30 N R 11 E

2. Well Type 1 (See item 12 below)
1=New 2=Replacement 3=Reconstruction
of previous unique well # _____ constructed in _____
Reason for replaced or reconstructed Well?

1 1=Drilled 2=Driven Point 3=Jetted 4=Other

3. Well Serves P # of homes and or (eg: barn, restaurant, church, school, industry, etc.)
M=Munic O=OTM N=NonCom P=Private Z=Other X=NonPot A=Anode L=Loop H=Drillhole

High Capacity: Well? N Property? N

4. Is the well located upslope or sideslope and not downslope from any contamination sources, including those on neighboring properties? Y
Well located in floodplain? N
Distance in feet from well to nearest: (including proposed)

1. Landfill
18 2. Building Overhang
70 3. 1=Septic 2= Holding Tank
90 4. Sewage Absorption Unit
5. Nonconforming Pit
6. Buried Home Heating Oil Tank
7. Buried Petroleum Tank
8. 1=Shoreline 2= Swimming Pool
9. Downspout/Yard Hydrant
10. Privy
11. Foundation Drain to Clearwater
12. Foundation Drain to Sewer
13. Building Drain 1=Cast Iron or Plastic 2=Other
14. Building Sewer 1=Gravity 2=Pressure 1=Cast Iron or Plastic 2=Other
15. Collector Sewer: ___ units ___ in . diam.
16. Clearwater Sump
17. Wastewater Sump
18. Paved Animal Barn Pen
19. Animal Yard or Shelter
20. Silo
21. Barn Gutter
22. Manure Pipe 1=Gravity 2=Pressure 1=Cast iron or Plastic 2=Other
23. Other manure Storage
24. Ditch
25. Other NR 812 Waste Source

5. Drillhole Dimensions and Construction Method Lower Open Bedrock

Dia.(in.)	From (ft)	To (ft)
6.0	surface	59

Upper Enlarged Drillhole
-- 1. Rotary - Mud Circulation
-- 2. Rotary - Air
-- 3. Rotary - Air and Foam
-- 4. Drill-Through Casing Hammer
-- 5. Reverse Rotary
-- 6. Cable-tool Bit _ n. dia
-- 7. Temp. Outer Casing _ in. dia. _____ depth ft. Removed ?
Other

6. Casing Liner Screen Material, Weight, Specification Manufacturer & Method of Assembly

Dia. (in.)		From (ft.)	To (ft.)
6.0	SAWHILL STEEL A53 18.97 WELDED	surface	59

Dia.(in.)	Screen type, material & slot size	From	To
	NONE		

7. Grout or Other Sealing Material

Method / Kind of Sealing Material	From (ft.)	To (ft.)	# Sacks Cement
	surface		

Geology Codes	8. Geology Type, Caving/Noncaving, Color, Hardness, etc	From (ft.)	To (ft.)
_Y_	SAND & GRAVEL	0	56
_DQ_	DECOMPOSED GRANITE	56	59
_Q_	GRANITE	59	59

9. Static Water Level
12.0 feet B ground surface
A=Above B=Below

10. Pump Test
Pumping level 54.0 ft. below surface
Pumping at 9.0 GP M 1.0 Hrs

11. Well Is: 24 in. A Grade (A=Above B=Below)
Developed? Y
Disinfected? Y
Capped? Y

12. Did you notify the owner of the need to permanently abandon and fill all unused wells on this property?
If no, explain

13. Initials of Well Constructor or Supervisory Driller: EJD Date Signed: 9/6/00

Initials of Drill Rig Operator (Mandatory unless same as above) Date Signed

Additonal Comments?
Owner Sent Label? Y
Variance Issued?
More Geology?

Batch 686

WISCONSIN UNIQUE WELL NUMBER
Source: WELL CONSTRUCTION **ON436**

State of Wi-Private Water Systems-DG/2
Department Of Natural Resources, Box 7921
Madison, WI 53707

Form 3300-77A
(Rev 02/02)bw

Property Owner: STONE, PAT
Telephone Number: 715 -449 -2277
Depth **205** FT

Mailing Address: PO BOX 132
City: ANIWA
State: WI
Zip Code: 54408

1. Well Location
T=Town C=City V=Village: T of ROLLING
Fire#:
Street Address or Road Name and Number:

County of Well Location: 34 LANGLADE
Co Well Permit No W: NO
Well Completion Date: September 28, 2000
Subdivision Name:
Lot#:
Block #:

Well Constructor: EDWARD J DREWS
License #: 327
Facility ID (Public):
Address: R17071 KONKOL RD
Public Well Plan Approval#:
City: HATLEY
State: WI
Zip Code: 54440
Date Of Approval:
Hicap Permanent Well #:
Common Well #:
Specific Capacity: gpm/ft

Gov't Lot or **SW** 1/4 of **SE** 1/4 of
Section **33** T **30** N R **11** E

2. Well Type **3** (See item 12 below)
1=New 2=Replacement 3=Reconstruction
of previous unique well # **NW472** constructed in **0**
Reason for replaced or reconstructed Well?: **LOW YIELD**

3. Well Serves: **P** # of homes and or (eg: barn, restaurant, church, school, industry, etc.)
M=Munic O=OTM N=NonCom P=Private Z=Other X=NonPot A=Anode L=Loop H=Drillhole

High Capacity: Well? N
Property? N

1 1=Drilled 2=Driven Point 3=Jetted 4=Other

4. Is the well located upslope or sideslope and not downslope from any contamination sources, including those on neighboring properties? **Y**
Well located in floodplain? **N**
Distance in feet from well to nearest: (including proposed)

1. Landfill
18 2. Building Overhang
70 3. 1=Septic 2= Holding Tank
90 4. Sewage Absorption Unit
5. Nonconforming Pit
6. Buried Home Heating Oil Tank
7. Buried Petroleum Tank
8. 1=Shoreline 2= Swimming Pool
9. Downspout/ Yard Hydrant
10. Privy
11. Foundation Drain to Clearwater
12. Foundation Drain to Sewer
13. Building Drain 1=Cast Iron or Plastic 2=Other
14. Building Sewer 1=Gravity 2=Pressure 1=Cast Iron or Plastic 2=Other
15. Collector Sewer: ___ units ___ in . diam.
16. Clearwater Sump
17. Wastewater Sump
18. Paved Animal Barn Pen
19. Animal Yard or Shelter
20. Silo
21. Barn Gutter
22. Manure Pipe 1=Gravity 2=Pressure 1=Cast iron or Plastic 2=Other
23. Other manure Storage
24. Ditch
25. Other NR 812 Waste Source

5. Drillhole Dimensions and Construction Method Lower Open Bedrock

Dia.(in.)	From (ft)	To (ft)
6.0	surface	205

Upper Enlarged Drillhole
-- 1. Rotary - Mud Circulation
-- 2. Rotary - Air
-- 3. Rotary - Air and Foam
-- 4. Drill-Through Casing Hammer
-- 5. Reverse Rotary
-- 6. Cable-tool Bit _ n. dia
-- 7. Temp. Outer Casing _ in. dia. _____ depth ft. Removed ?
Other

6. Casing Liner Screen Material, Weight, Specification Manufacturer & Method of Assembly

Dia. (in.)		From (ft.)	To (ft.)
6.0	SAWHILL STEEL A53 18.97 WELDED	surface	59

Dia.(in.)	Screen type, material & slot size	From	To

7. Grout or Other Sealing Material

Method / Kind of Sealing Material	From (ft.)	To (ft.)	# Sacks Cement
	surface		

8. Geology

Geology Codes	Type, Caving/Noncaving, Color, Hardness, etc	From (ft.)	To (ft.)
____	EXISTING	0	59
__Q_	GRANITE	59	205

9. Static Water Level
12.0 feet **B** ground surface
A=Above B=Below

10. Pump Test
Pumping level **200.0** ft. below surface
Pumping at **0.5** GP M **2.0** Hrs

11. Well Is: 24 in. **A** Grade (A=Above B=Below)
Developed? Y
Disinfected? Y
Capped? Y

12. Did you notify the owner of the need to permanently abandon and fill all unused wells on this property?
If no, explain

13. Initials of Well Constructor or Supervisory Driller: EJD
Date Signed: 10/9/00
Initials of Drill Rig Operator (Mandatory unless same as above)
Date Signed

Additonal Comments?
Owner Sent Label? Y
Variance Issued?
More Geology?

Batch 694