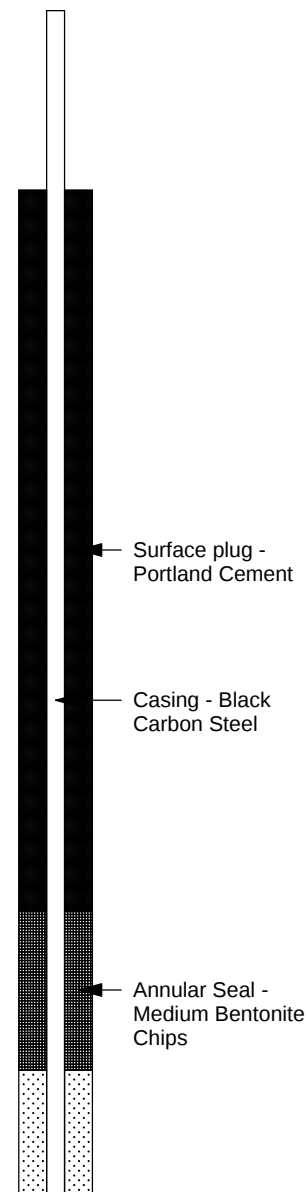


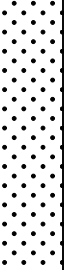
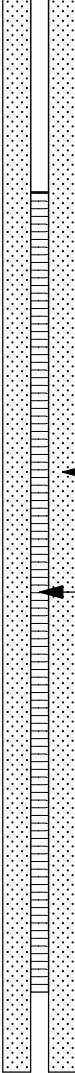
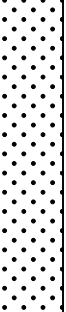
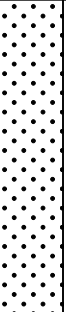
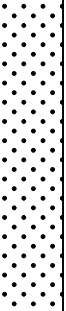
Date Start/Finish: 11/3/2011 / 11/3/2011 Drilling Company: Stevens Drilling Driller's Name: Dan Hunter Drilling Method: Geoprobe Sampling Method: Direct Push	Northing: 4972984.9689 Easting: 484232.1812 Drilled Depth (feet bgs): 28 Surface Elevation: NA Descriptions By: KAH	Well/Boring ID: AMW-19 Client: Ford Motor Company Location: Saint Paul, MN
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DEPTH (bgs)	Recovery (in)	PID	USCS Code	Geologic Column	Stratigraphic Description	Well Construction
0						
	20	0.1	SP		(0.0 - 6.8) POORLY GRADED SAND, v. fine to coarse, mostly medium, little v. coarse sand to v. large pebbles, tr. organics, round to subangular, well sorted, loose to medium dense, dry to slightly moist; silty v. fine to fine sand layer 6.42-6.83 ft, brown (10YR 4/3)	
-5	48	0.1/0.1	SP		(6.8 - 8.0) POORLY GRADED SAND, very fine to fine sand, trace medium, round, well sorted, loose to medium dense, slightly moist, brown (10YR 5/3)	
-10	48	0.1/0.1	SP		(8.0 - 10.7) POORLY GRADED SAND, fine to very coarse, mostly medium, little granules to large pebbles, trace organics, round to subangular, well sorted, loose to medium dense, dry to slightly moist, silty very fine to fine sand layer 10.42 -10.67 ft, brown (10YR 4/3)	
			SP		(10.7 - 12.0) POORLY GRADED SAND, very fine to fine sand, trace medium, round, well sorted, loose to medium dense, slightly moist, brown (10YR 5/3), dark brown partings from 9 ft to 9.42 ft	
			SP		(12.0 - 16.0) POORLY GRADED SAND, fine to very coarse, mostly	



	Remarks: bgs: below ground surface NA: Not applicable/not available v: very Coordinates given in UTM Zone 15N
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Date Start/Finish: 11/3/2011 / 11/3/2011 Drilling Company: Stevens Drilling Driller's Name: Dan Hunter Drilling Method: Geoprobe Sampling Method: Direct Push	Northing: 4972984.9689 Easting: 484232.1812 Drilled Depth (feet bgs): 28 Surface Elevation: NA Descriptions By: KAH	Well/Boring ID: AMW-19 Client: Ford Motor Company Location: Saint Paul, MN
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DEPTH (bgs)	Recovery (in)	PID	USCS Code	Geologic Column	Stratigraphic Description	Well Construction
-15	45	0.1/0.1			coarse, little granule to large pebbles, trace very large pebbles, round to subangular, well sorted, loose, dry to slightly moist, yellowish brown (10YR 5/4) and dark yellowish brown (10YR 4/4)	 Filter Pack - Red Flint #15 Screen - Sch 40 PVC .01" Slot
-20	48	0.4	SP		(16.0 - 20.0) POORLY GRADED SAND, fine to coarse, mostly medium, little very coarse, trace granule to medium pebbles, well sorted, medium dense, slightly moist, dark yellowish brown (10YR 4/4)	
-25	27		SP		(20.0 - 28.0) POORLY GRADED SAND, coarse to v. coarse, some granules, little small to large pebbles, tr. silt to fine sand, round to subangular, well sorted, loose, wet, olive brown (2.5Y 4/3); fine to very coarse sand seams between 21-26 ft, dark gray (5Y 4/1)	
	32					

	Remarks: bgs: below ground surface NA: Not applicable/not available v: very Coordinates given in UTM Zone 15N
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Date Start/Finish: 11/3/2011 / 11/3/2011
Drilling Company: Stevens Drilling
Driller's Name: Dan Hunter
Drilling Method: Geoprobe
Sampling Method: Direct Push

Northing: 4972935.2694
Easting: 484235.7607

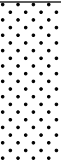
Well/Boring ID: AMW-20

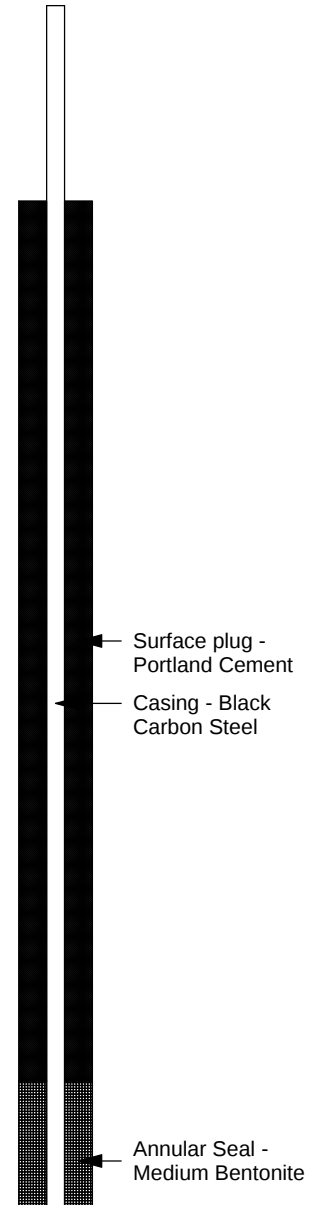
Client: Ford Motor Company

Location: Saint Paul, MN

Drilled Depth (feet bgs): 28
Surface Elevation: NA

Descriptions By: KAH

DEPTH (bgs)	Recovery (in)	PID	USCS Code	Geologic Column	Stratigraphic Description	Well Construction
0						
	25	1.9	SP		(0.0 - 2.0) POORLY GRADED SAND, silt, very fine to fine sand, little to trace organics, round, well sorted, loose, slightly moist to dry, grayish brown (2.5Y 5/2)	
			SW		(2.0 - 10.0) WELL GRADED SAND WITH GRAVEL, very fine to very coarse, mostly coarse, little granules to small pebbles, trace medium to large pebbles, trace silt/organics, round to subangular, poorly sorted, loose, dry, light yellowish brown (2.5Y 6/4)	
-5	28	0.1/0.1				
-10	46	0.0/0.0	SP		(10.0 - 11.5) POORLY GRADED SAND, very fine to fine, trace silt, round, well sorted, medium dense, slightly moist, light yellowish brown (2.5Y 6/3)	
			SM		(11.5 - 12.0) SILTY SAND, very fine to fine sand, trace organics/clay, medium stiff, slightly moist	
			SW		(12.0 - 13.8) WELL GRADED SAND WITH GRAVEL, very fine to	



Remarks:

bgs: below ground surface
 NA: Not applicable/not available
 v: very
 Coordinates given in UTM Zone 15N

Date Start/Finish: 11/3/2011 / 11/3/2011 Drilling Company: Stevens Drilling Driller's Name: Dan Hunter Drilling Method: Geoprobe Sampling Method: Direct Push	Northing: 4972935.2694 Easting: 484235.7607 Drilled Depth (feet bgs): 28 Surface Elevation: NA Descriptions By: KAH	Well/Boring ID: AMW-20 Client: Ford Motor Company Location: Saint Paul, MN
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DEPTH (bgs)	Recovery (in)	PID	USCS Code	Geologic Column	Stratigraphic Description	Well Construction
-15	43	0.0/0.0			very coarse, mostly coarse, little granules to small pebbles, trace medium to large pebbles, trace silt/organics, round to subangular, poorly sorted, loose, slightly moist, light yellowish brown (2.5Y 6/4)	Chips Filter Pack - Red Flint #15 Screen - Sch 40 PVC .01" Slot
			SP		(13.8 - 15.2) POORLY GRADED SAND, very fine to fine, trace silt, round, well sorted, medium dense, slightly moist, light yellowish brown (2.5Y 6/3)	
			ML		(15.2 - 16.0) SANDY SILT, little clay, trace organics, dense, slightly moist, no to low plasticity, no dilatency, very fine to fine sand seam at 15.3 ft, trace silt, medium dense, slightly moist, dark olive brown (2.5Y 3/3)	
-20	43	0.1/0.1	SW		(16.0 - 17.1) WELL GRADED SAND WITH GRAVEL, very fine to very coarse, mostly coarse, little granules to small pebbles, trace medium to large pebbles, trace silt/organics, round to subangular, poorly sorted, loose, slightly moist, light yellowish brown (2.5Y 6/4)	
			SP		(17.1 - 18.5) POORLY GRADED SAND, very fine to fine, trace silt, round, well sorted, medium dense, slightly moist, light yellowish brown (2.5Y 6/3)	
			ML		(18.5 - 19.4) SANDY SILT, little clay, trace organics, dense, slightly moist, no to low plasticity, no dilatency, very fine to fine sand seam, dense, slightly moist, very dark brown (10YR 2/2)	
			SP		(19.4 - 20.0) POORLY GRADED SAND, fine to coarse, mostly medium, little very coarse, trace granules, round to subangular, well sorted, loose, slightly moist	
-25	24		SW		(20.0 - 21.7) WELL GRADED SAND WITH GRAVEL, very fine sand to granules, mostly medium to coarse sand, little small pebble, trace medium pebbles/silt, round to subangular, poorly sorted, medium dense, wet	
			SP		(21.7 - 24.0) POORLY GRADED SAND, fine to coarse, mostly medium, little very coarse to granules, trace small to large pebbles, round to subround, well sorted, loose, wet	
			SW		(24.0 - 28.0) WELL GRADED SAND WITH GRAVEL, very fine sand to granules, mostly coarse to granules, little small pebbles to medium pebbles, trace large pebbles and silt; round to subangular, dense, wet	

	Remarks: bgs: below ground surface NA: Not applicable/not available v: very Coordinates given in UTM Zone 15N
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ARCADIS

Water Sampling Log

Project Ford TCAP Project No. DE000440, 000 Page 1 of 1
 Site Location St Paul, MN Date 11/11/11
 Site/Well No. Amw-19 Replicate No. — Code No. —
 Weather Sunny, 50s Sampling Time: Begin 1125 End 1155 ST 1145

Evacuation Data

Measuring Point TOC
 MP Elevation (ft) 707.84
 Land Surface Elevation (ft) 705.60
 Sounded Well Depth (ft bmp) 26.55
 Depth to Water (ft bmp) 20.39
 Water-Level Elevation (ft) 687.21
 Water Column in Well (ft) 6.16
 Casing Diameter/Type 2" Black Carbon steel
 Gallons in Well 0.9856
 Gallons Pumped/Bailed Prior to Sampling 3x 5x
2.9568 9.728
 Sample Pump Intake Setting (ft bmp) N.A.
 Purge Time begin 1115 end 1125
 Pumping Rate (gpm) N.A.
 Evacuation Method bailer

Field Parameters

Color brown
 Odor none
 Appearance turbid
 pH (s.u.) 7.14
 Conductivity (mS/cm) 1.22
 (µmhos/cm) —
 Turbidity (NTU) 1000+
 Temperature (°C) 10.72
 Dissolved Oxygen (mg/L) 11.80
 ORP (mV) -193
 Sampling Method YSI 556

Remarks

Constituents Sampled	Container Description	Number	Preservative
<u>VOCs</u>	<u>40 mL VOA</u>	<u>3</u>	<u>HCl</u>
<u>PAHs</u>	<u>1-L amber</u>	<u>2</u>	<u>None</u>
<u>TAL Metals, Dissolved</u>	<u>500 mL, plastic</u>	<u>1</u>	<u>HNO₃</u>
<u>DRO</u>	<u>1-L amber</u>	<u>2</u>	<u>HCl</u>
<u>GRO</u>	<u>40 mL VOA</u>	<u>2</u>	<u>HCl</u>

Sampling Personnel ND/TK KCH

Well Casing Volumes

Gal./Ft.	1-1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-1/2" = 0.09	2-1/2" = 0.26	3-1/2" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds
		NM	Not Measured		

ARCADIS

Water Sampling Log

Project Ford TCAP Project No. DE000440.000 Page 1 of 1
 Site Location St Paul, MN Date 11/11/11
 Site/Well No. AMW-20 Replicate No. DUP-01 Code No. —
 Weather Sunny, 50s Sampling Time: Begin 1220 End 1245 ST 1230

Evacuation Data

Measuring Point TOC
 MP Elevation (ft) 710.02
 Land Surface Elevation (ft) 707.58
 Sounded Well Depth (ft bmp) 25.73
 Depth to Water (ft bmp) 22.60
 Water-Level Elevation (ft) 687.42
 Water Column in Well (ft) 3.33
 Casing Diameter/Type 2" Black Carbon Steel
 Gallons in Well 0.5328
 Gallons Pumped/Bailed Prior to Sampling 3x Sn
1.5784 2.664
 Sample Pump Intake Setting (ft bmp) N.A.
 Purge Time begin 1150 end 1220
 Pumping Rate (gpm) N.A.
 Evacuation Method Bailer

Field Parameters

Color brown
 Odor None
 Appearance turbid
 pH (s.u.) 7.00
 Conductivity (mS/cm) 1.49
 (µmhos/cm) —
 Turbidity (NTU) 999
 Temperature (°C) 12.60
 Dissolved Oxygen (mg/L) 11.83
 ORP (mV) 137
 Sampling Method YSI 556

Remarks

Constituents Sampled	Container Description	Number	Preservative
<u>VOCs</u>	<u>40 mL VOA</u>	<u>3</u>	<u>HCl</u>
<u>DRO</u>	<u>1-L amber</u>	<u>2</u>	<u>HCl</u>
<u>GRO</u>	<u>40 mL VOA</u>	<u>2</u>	<u>HCl</u>
<u>PAHs</u>	<u>1-L amber</u>	<u>2</u>	<u>None</u>
<u>TAL metals, dissolved</u>	<u>500 mL plastic</u>	<u>1</u>	<u>HNO₃</u>

Sampling Personnel ND/INK Kff

Well Casing Volumes

Gal./Ft.	1-1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-1/2" = 0.09	2-1/2" = 0.26	3-1/2" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds
		NM	Not Measured		

ARCADIS

Water Sampling Log

Project Ford TCAP Project No. DE000440.0002 Page 1 of 1
 Site Location St. Paul, MN Date 1/17/12
 Site/Well No. Amw-19 Replicate No. — Code No. —
 Weather Sunny, 10/20s Sampling Time: Begin 1155 End 1250 ST 1225

Evacuation Data

Measuring Point TOC
 MP Elevation (ft) 707.84
 Land Surface Elevation (ft) 705.60
 Sounded Well Depth (ft bmp) 26.74
 Depth to Water (ft bmp) 20.32
 Water-Level Elevation (ft) 687.52
 Water Column in Well (ft) 6.42
 Casing Diameter/Type 2" steel (black carbon)
 Gallons in Well 1.0672
 Gallons Pumped/Bailed Prior to Sampling 3x 5x
3.08 5.136
 Sample Pump Intake Setting (ft bmp) N.A.
 Purge Time begin 1140 end 1155
 Pumping Rate (gpm) N.A.
 Evacuation Method bailing

Field Parameters

Color brown turbid
 Odor decan
 Appearance turbid (very)
 pH (s.u.) 6.72
 Conductivity (mS/cm) 1.22
 (µmhos/cm)
 Turbidity (NTU) 948
 Temperature (°C) 2.12
 Dissolved Oxygen (mg/L) 2.60
 ORP (mV) 72
 Sampling Method Horiba U-52

Remarks _____

Constituents Sampled	Container Description	Number	Preservative
PAH	1-liter amber	2	None
VOC	40mL VOA	3	HCl
DRO	1-liter amber	2	HCl
GRO	40mL VOA	2	HCl
TAL Metals (Dissolved)	1-liter amber 500 mL	1	HNO3

Sampling Personnel KH

Well Casing Volumes

Gal./Ft.	1-1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-1/2" = 0.09	2-1/2" = 0.26	3-1/2" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Milisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds
		NM	Not Measured		

ARCADIS

Water Sampling Log

Project Ford TCAP Project No. DE000440.0002 Page 1 of 1
 Site Location St. Paul, MN Date 1/17/12
 Site/Well No. Amw-20 Replicate No. DUP-02 Code No.
 Weather Sunny 10/201 Sampling Time: Begin 1345 End 1430 ST 1415

Evacuation Data

Measuring Point TOC
 MP Elevation (ft) 710.02
 Land Surface Elevation (ft) 707.58
 Sounded Well Depth (ft bmp) 26.93
 Depth to Water (ft bmp) 22.54
 Water-Level Elevation (ft) 687.48
 Water Column in Well (ft) 4.39
 Casing Diameter/Type 2" steel (black carbon)
 Gallons in Well 0.7024
 Gallons Pumped/Bailed Prior to Sampling 3x 5x
2.10 3.512
 Sample Pump Intake Setting (ft bmp) N.A.
 Purge Time begin 1335 end 1345
 Pumping Rate (gpm) N.A.
 Evacuation Method boiling

Field Parameters

Color brown
 Odor None
 Appearance turbid
 pH (s.u.) 6.84
 Conductivity (mS/cm) 1.24
 (µmhos/cm)
 Turbidity (NTU) 1000 +
 Temperature (°C) 2.57
 Dissolved Oxygen (mg/L) 2.31
 ORP (mV) 60
 Sampling Method Horiba U-52

Remarks

Constituents Sampled	Container Description	Number	Preservative
PAH	1-liter amber	2	None
VOC	40mL VOA	3	HCl
DRO	1-liter amber	2	HCl
GRO	40mL VOA	2	HCl
TAL Metals (Dissolved)	1-liter amber <u>500 mL</u>	1	HNO3

Sampling Personnel KH

Well Casing Volumes

Gal./Ft.	1-1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65
	1-1/2" = 0.09	2-1/2" = 0.26	3-1/2" = 0.50	6" = 1.47

bmp	below measuring point	ml	milliliter	NTU	Nephelometric Turbidity Units
°C	Degrees Celsius	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	feet	msl	mean sea-level	s.u.	Standard units
gpm	Gallons per minute	N/A	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Miligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds
		NM	Not Measured		