April 9, 1998

Ms. Anne E. Kolata
Deputy Executive Director
City of South Bend
Community & Economic Development
1200 County-City Building
South Bend, Indiana 46601-1830

RE: Report for Sampling and Analyses of Groundwater and Abandonment of Wells, March 1998 Former Avanti Site, South Bend, Indiana

Dear Ms. Kolata:

Enclosed please find the following attachments which comprise the EIS Environmental Engineers, Inc., (EIS) report for the March 1998 sampling and analyses of groundwater samples and the abandonment of three (3) monitoring wells at the former Avanti site (the Site), located northwest of the intersection of Sample and Lafayette Streets in South Bend, Indiana:

A) Brief narrative describing the March 1998 groundwater sampling and analyses and well abandonments at the Site.

B) A site map from a previous ATEC report showing the general location of the wells sampled and abandoned at the Site.

C) A summary of the analytical results.

D) Complete laboratory analytical reports.

E) Chain-of-custody records for all samples collected.

F) Monitoring well sampling forms documenting the details of the groundwater sample collections.

G) Copies of the Indiana Department of Natural Resources (IDNR) water well records documenting the well abandonments. The original forms have been mailed to the IDNR as is required by applicable well abandonment regulations.

This report and associated work were prepared and conducted by EIS on behalf of the City of South Bend, Community & Economic Development, in accordance with the EIS proposals dated February 5, 1998, and March 6, 1998. Please note that four (4) wells, rather than three (3) wells, were intended to be sampled and abandoned at the Site. However, despite several attempts, it was not possible to locate one of the four monitoring wells (well MW-4). It is believed that this well, which was reportedly located in the southwest corner of the Site, may have been damaged and/or buried by activities related to the apparent stockpiling of sand near that area of the Site. It is recommended that EIS be contacted to properly abandon this well in the event that it is discovered during the planned future construction activities at the Site.

Please feel free to call me or H. Stephen Nye, P.E., at (219) 277-5715 if you have any questions.

Sincerely,

EIS ENVIRONMENTAL ENGINEERS, INC.

J. C. Sporleder, C.P.G.
Senior Project Geologist

JCS/kks
Attachments

ATTACHMENT A

NARRATIVE DESCRIBING GROUNDWATER SAMPLING AND ANALYSES AND WELL ABANDONMENT ACTIVITIES DURING MARCH 1998

The groundwater samples were laboratory analyzed for Volatile Organic Compounds (VOC). A summary of the analytical results is provided in Attachment C. Complete laboratory analytical results are provided in Attachment D. The results of the analyses did not indicate the presence of VOC above laboratory detection limits in any of the groundwater samples collected from the three wells at the Site.

An attempt was made to locate and sample a fourth monitoring well (MW-4) which was reportedly located near the southwest corner of the Site. However, this well could not be located and was not sampled. Attempts were made without success to locate this well on March 10, 16 and 24, 1998, using location data provided in the ATEC report, shovels and a steel probe rod. It was noted that the general area were the well was suppose to be located showed indications of disturbance by heavy equipment, apparently related to the stockpiling of sand near the west side of the Site. It is believed that well MW-4 may have been damaged and/or buried by the activities related to the apparent stockpiling of sand in this area.

Well Abandonments:

EIS arranged for, observed, and documented the abandonment of three (3) monitoring wells at the Site on March 24, 1998. The wells abandoned were those identified as MW-1R, MW-2 and MW-3R in the ATEC report. As indicated above, a fourth well (MW-4) could not be located and was not abandoned. The wells were abandoned in accordance with applicable Indiana Department of Natural Resources (IDNR) well abandonment regulations. The well abandonments were conducted by Cook Drilling, of Niles, Michigan, using a driller licensed by the IDNR to conduct well abandonments in Indiana. Per the client's instructions and in accordance with a request from Mr. Andy Lemberis of Cole Associates, Inc., (consultants for future construction at the Site), the wells were abandoned in such a manner so as to remove the well structures to about ten feet below the existing grade. The deeper well abandonments were requested so as to reduce the likelihood that the abandoned wells would be encountered during the expected excavations for the construction of a building planned in the near future at the Site.

The general abandonment procedures used for each well are described below:

> The well was filled with medium-sized bentonite clay chips from the bottom to about nine feet from grade. The chips were slowly poured into the well, and the level of bentonite chips was periodically measured to be sure the chips

GROUNDWATER SAMPLING AND ANALYSES AND WELL ABANDONMENTS

During March 1998, EIS Environmental Engineers, Inc., (EIS) sampled and abandoned three (3) monitoring wells at the former Avanti site (the Site) in South Bend, Indiana. The southeast corner of the Site was measured at approximately 327 feet north of the intersection of Sample and Lafayette Streets. A map showing the Site and the well locations is provided in Attachment A. This work was performed by EIS on behalf of the City of South Bend, Community & Economic Development, in accordance with EIS proposals dated February 5, 1998, and March 6, 1998.

It was intended that four (4) monitoring wells, previously installed by ATEC, would be sampled and abandoned by EIS. However, as is indicated below, one well (MW-4) could not be located and, thus, was neither sampled nor abandoned. It is believed that well MW-4, which was reportedly located in the southwest corner of the Site, may have been damaged and/or buried by activities related to the apparent stockpiling of sand near that area of the Site. It is recommended that EIS be contacted to properly abandon this well in the event that it is discovered during planned future construction activities at the Site.

The following are narratives regarding the groundwater sampling and analyses and well abandonment activities:

Groundwater sampling and analyses:

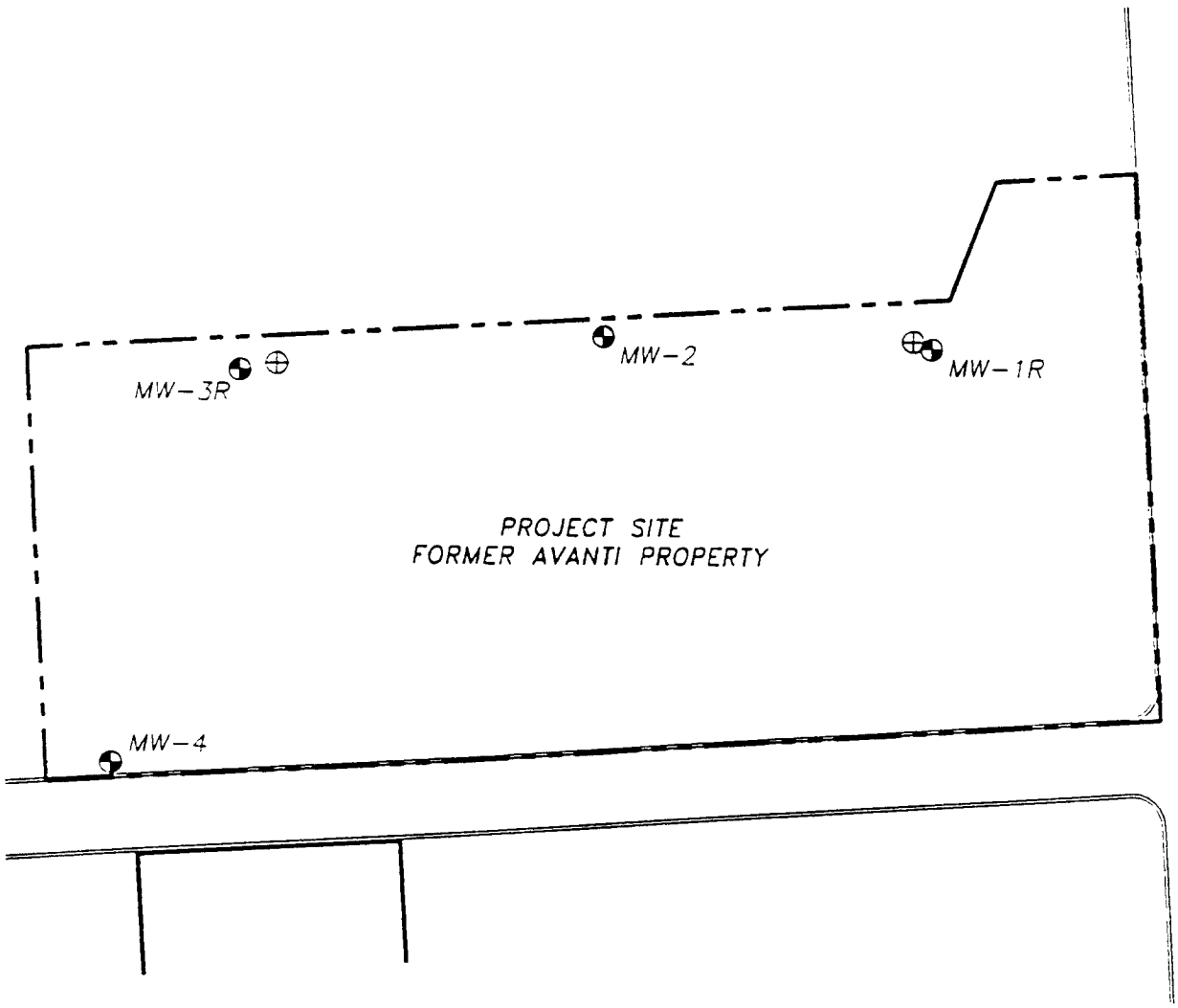
On March 10, 1998, EIS collected groundwater samples from three monitoring wells located at the former Avanti site, South Bend, Indiana. The wells sampled were those identified as MW-1R, MW-2 and MW-3R in the ATEC report dated June 8, 1995, (the ATEC report) concerning a Phase II subsurface investigation of the subject site. The locations of the wells are shown in the site map provided in Attachment B. The wells were purged with a PVC bailer and sampled with a Teflon bailer. The samples were contained in 40 cc glass vials with Teflon-septum lids. Purge and decontamination liquids were contained and disposed into the city sewer grate, located east of the Site along Lafayette Street, for eventual treatment and disposal at the South Bend water treatment facility. Permission to dispose the purge and decontamination liquids in this manner had been obtained by EIS on March 2, 1998, from Mr. Larry Cook of the South Bend Sewer Bureau. Details regarding the purge and sampling activities were recorded on Monitoring Well Sampling forms (see Attachment F). The groundwater samples were placed in an iced cooler and shipped to the American Environmental Analytical Corporation, in Lincolnwood, Illinois, for laboratory analyses. Chain-of-custody records were maintained for all the samples collected (see Attachment E).

ATTACHMENT B

SITE MAP
FROM ATEC REPORT SHOWING
LOCATION OF MONITORING WELLS
SAMPLED AND ABANDONED AT SITE
DURING MARCH 1998

completely filled the intended interval. Clean water was then poured into the well casing in order to hydrate the bentonite chips (the bentonite chips swell when hydrated and thus seal the well casing). The protective well cover at grade was then removed, and a drill-rig mounted, hollow-stem auger was positioned over the well casing. The hollow-stem auger was then used to bore out the well to about 10.5 feet below grade. The upper 10 feet of well casing was removed. A concrete seal was then placed through the augers, over the remaining well casing, from a depth of about 10.5 to 9.5 feet below grade. A 0.5-foot interval of hydrated bentonite clay chips was then placed over the concrete seal. The augers were retracted, and the remaining hole was backfilled to grade with soil cuttings.

Well abandonment forms were submitted by the driller to the IDNR, as required by applicable water well regulations. Copies of the IDNR well abandonment forms are provided in Attachment G.



LEGEND

- MW-1R — MONITORING WELL — Well Identification
- ⊕ — APPROX. LOCATION OF MISSING WELL
- — — — — PROPERTY BOUNDARY

MW-1R & MW-3R: REPLACEMENT WELLS

100 0 25 50 75 100

SCALE: 1" = 100'

SITE MAP

From

ATEC Associates,Inc., June 8, 1995, Report Phase II Subsurface Investigation, Former Avanti Property.

BORING PLAN

PHASE II SITE INVESTIGATION
FORMER AVANTI PROPERTY
NORTHWEST CORNER of LAFAYETTE ST. AND SAMPLE ST.
SOUTH BEND, INDIANA

Project Number:	21-07-95-0045
Drawing File:	0045BP
Date:	6-2-95
Scale:	1" = 100'
Drn By: SRJ / Ckd By: BKL / Appd By:	

ATEC 1995

Figure 2

01/07/95\04

ATTACHMENT C

SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES COLLECTED ON MARCH 10, 1998

SUMMARY OF RESULTS
MARCH 10, 1998, GROUNDWATER SAMPLES
AVANTI SITE, SOUTH BEND, INDIANA [1]

Well I.D.	VOC Results [2]
MW-1R	N.D. [3]
MW-2	N.D.
MW-3R	N.D.

Notes:

(1) Groundwater samples were collected from monitoring wells MW-1R, MW-2 and MW-3R by EIS Environmental Engineers, Inc., on March 10, 1998, from the former Avanti Site located northwest of the intersection of Sample and Lafayette Streets in South Bend, Indiana.

(2) The groundwater samples were analyzed by American Environmental Analytical Corp., of Lincolnwood, Illinois, for Volatile Organic Compounds (VOC).

(3) N.D. = Not Detected. See complete analytical reports for detection limits and target parameter list. The complete analytical reports are provided in Attachment D of this report.

ATTACHMENT D

COMPLETE LABORATORY ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES COLLECTED ON MARCH 10, 1998

AMERICAN
ENVIRONMENTAL
ANALYTICAL CORP.

LABORATORY DATA REPORT

CLIENT **EIS Environmental Engr., Inc.**
1701 N. Ironwood Dr.
South Bend, IN 46635

PROJECT	:	**SOUTHBEND, COMMUNITY & ECONOMIC DEV'T**
NUMBER#	:	1456 -980101
TASK ORDER	:	N/A
ATTN	:	**J.C. SPORLEDER**
RECEIVED	:	03/11/98
REPORTED	:	03/24/98
FILE#	:	**80311137 THRU 80311139**

LABORATORY DIRECTOR

AMERICAN
ENVIRONMENTAL
ANALYTICAL CORP.

EIS Enviro. Engineers, Inc.....
1701 N. Ironwood Dr..
South Bend, IN 46635
Fax: (219)-277-5715
Att:J.C.Spoidler

Lab Number: 80311137
Field ID:MW-1R
Client Project I.D: Avanti Site
Analysis Method: EPA 8260
Sample Descript:Water

Sampled:03/10/98
Received:03/11/98
Extracted:03/23/98
Analyzed:03/23/98
Reported:03/24/98

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10	N.D.
Benzene	2	N.D.
Bromobenzene	2	N.D.
Bromodichloromethane	2	N.D.
n-Butylbenzene	2	N.D.
sec-Butylbenzene	2	N.D.
tert-Butylbenzene	2	N.D.
Bromochloromethane	2	N.D.
Bromomethane	2	N.D.
Bromoform	2	N.D.
2-Butanone	5	N.D.
Carbondisulfide	2	N.D.
Carbon tetrachloride	5	N.D.
Chlorobenzene	2	N.D.
Chloroethane	2	N.D.
Chloroform	2	N.D.
Chloromethane	2	N.D.
2-Chlorotoluene	2	N.D.
4-Chlorotoluene	2	N.D.
2-Chloroethyl vinyl ether	2	N.D.
Dibromochloromethane	2	N.D.
Dichlorodifluoromethane	2	N.D.
Dibromomethane	2	N.D.
1,2-Dibromoethane	2	N.D.
1,2-Dibromo-3-chloropropane	2	N.D.
1,3-Dichlorobenzene	2	N.D.
1,2-Dichlorobenzene	2	N.D.
1,4-Dichlorobenzene	2	N.D.
1,1-Dichloroethane	2	N.D.
1,2-Dichloroethane	2	N.D.
1,1-Dichloroethene	2	N.D.
cis-1,2-Dichloroethene	2	N.D.
trans-1,2-Dichloroethene	2	N.D.
1,2-Dichloropropane	2	N.D.
1,3-Dichloropropane	2	N.D.
2,2-Dichloropropane	2	N.D.

7330 N. Cicero Ave., Lincolnwood, IL 60646 • Tel: (847) 329-0922 • Fax: (847) 329-1235 • (88[illegible]EA-TEST • http://www.aea[illegible].com

AMERICAN ENVIRONMENTAL ANALYTICAL CORP.

EIS Enviro. Engineers, Inc.....
1701 N. Ironwood Dr..
South Bend, IN 46635
Fax: (219)-277-5715
Att:J.C.Spoidler

Lab Number: 80311137
Field ID:MW-1R
Client Project I.D: Avanti Site
Analysis Method: EPA 8260
Sample Descript:Water

Sampled:03/10/98
Received:03/11/98
Extracted:03/23/98
Analyzed:03/23/98
Reported:03/24/98

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/L	Sample Results µg/L
cis-1,3-Dichloropropene	2	N.D.
trans 1,3-Dichloropropene	2	N.D.
1,1-Dichloropropene	2	N.D.
Ethyl Benzene	2	N.D.
2-Hexanone	5	N.D.
Hexachlorobutadiene	2	N.D.
Methylene chloride	2	N.D.
4-methyl-2 pentanone	2	N.D.
Styrene	2	N.D.
Tetrachloroethene	5	N.D.
Toluene	2	N.D.
1,1,2,2-Tetrachloroethane	5	N.D.
1,1,1-Trichloroethane	2	N.D.
1,1,2-Trichloroethane	2	N.D.
Trichloroethene	2	N.D.
Trichlorofluoromethane	2	N.D.
1,1,1,2-Tetrachloroethane	2	N.D.
1,2,3-Trichloropropane	2	N.D.
1,2,4-Trimethylbenzene	2	N.D.
1,3,5-Trimethylbenzene	2	N.D.
1,2,3-Trichlorobenzene	2	N.D.
1,2,4-Trichlorobenzene	2	N.D.
Isopropylbenzene	2	N.D.
p-Isopropyltoluene	2	N.D.
4-Isopropyltoluene	2	N.D.
n-Propylbenzene	2	N.D.
Napthalene	10	N.D.
Vinyl Acetate	5	N.D.
Vinyl chloride	2	N.D.
Total Xylenes	2	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

AMERICAN ENVIRONMENTAL ANALYTICAL CORP.

Laboratory Director
A.E.A. CORP.

7330 N. Cicero Ave . Lincolnwood, IL 60646 • Tel : (847) 329-0922 • Fax (847) 329-1225 • (8[illegible] AEA-TEST • http://www.aeatest.com

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ANALYTICAL CORP.

EIS Enviro. Engineers, Inc.....
1701 N. Ironwood Dr..
South Bend, IN 46635
Fax: (219)-277-5715
Att:J.C.Spoidler

Lab Number: 80311138
Field ID:MW-2
Client Project I.D: Avanti Site
Analysis Method: EPA 8260
Sample Descript:Water

Sampled:03/10/98
Received:03/11/98
Extracted:03/23/98
Analyzed:03/23/98
Reported:03/24/98

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10	N.D.
Benzene	2	N.D.
Bromobenzene	2	N.D.
Bromodichloromethane	2	N.D.
n-Butylbenzene	2	N.D.
sec-Butylbenzene	2	N.D.
tert-Butylbenzene	2	N.D.
Bromochloromethane	2	N.D.
Bromomethane	2	N.D.
Bromoform	2	N.D.
2-Butanone	5	N.D.
Carbondisulfide	2	N.D.
Carbon tetrachloride	5	N.D.
Chlorobenzene	2	N.D.
Chloroethane	2	N.D.
Chloroform	2	N.D.
Chloromethane	2	N.D.
2-Chlorotoluene	2	N.D.
4-Chlorotoluene	2	N.D.
2-Chloroethyl vinyl ether	2	N.D.
Dibromochloromethane	2	N.D.
Dichlorodifluoromethane	2	N.D.
Dibromomethane	2	N.D.
1,2-Dibromoethane	2	N.D.
1,2-Dibromo-3-chloropropane	2	N.D.
1,3-Dichlorobenzene	2	N.D.
1,2-Dichlorobenzene	2	N.D.
1,4-Dichlorobenzene	2	N.D.
1,1-Dichloroethane	2	N.D.
1,2-Dichloroethane	2	N.D.
1,1-Dichloroethene	2	N.D.
cis-1,2-Dichloroethene	2	N.D.
trans-1,2-Dichloroethene	2	N.D.
1,2-Dichloropropane	2	N.D.
1,3-Dichloropropane	2	N.D.
2,2-Dichloropropane	2	N.D.

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AMERICAN ENVIRONMENTAL ANALYTICAL CORP.

EIS Enviro. Engineers, Inc.....
1701 N. Ironwood Dr..
South Bend, IN 46635
Fax: (219)-277-5715
Att:J.C.Spoidler

Lab Number: 80311138
Field ID:MW-2
Client Project I.D: Avanti Site
Analysis Method: EPA 8260
Sample Descript:Water

Sampled:03/10/98
Received:03/11/98
Extracted:03/23/98
Analyzed:03/23/98
Reported:03/24/98

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/L	Sample Results µg/L
cis-1,3-Dichloropropene	2	N.D.
trans 1,3-Dichloropropene	2	N.D.
1,1-Dichloropropene	2	N.D.
Ethyl Benzene	2	N.D.
2-Hexanone	5	N.D.
Hexachlorobutadiene	2	N.D.
Methylene chloride	2	N.D.
4-methyl-2-pentanone	2	N.D.
Styrene	2	N.D.
Tetrachloroethene	5	N.D.
Toluene	2	N.D.
1,1,2,2-Tetrachloroethane	5	N.D.
1,1,1-Trichloroethane	2	N.D.
1,1,2-Trichloroethane	2	N.D.
Trichloroethene	2	N.D.
Trichlorofluoromethane	2	N.D.
1,1,1,2-Tetrachloroethane	2	N.D.
1,2,3-Trichloropropane	2	N.D.
1,2,4-Trimethylbenzene	2	N.D.
1,3,5-Trimethylbenzene	2	N.D.
1,2,3-Trichlorobenzene	2	N.D.
1,2,4-Trichlorobenzene	2	N.D.
Isopropylbenzene	2	N.D.
p-Isopropyltoluene	2	N.D.
4-Isopropyltoluene	2	N.D.
n-Propylbenzene	2	N.D.
Napthalene	10	N.D.
Vinyl Acetate	5	N.D.
Vinyl chloride	2	N.D.
Total Xylenes	2	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

AMERICAN ENVIRONMENTAL ANALYTICAL CORP.

Laboratory Director
A.E.A. CORP.

AMERICAN
ENVIRONMENTAL
ANALYTICAL CORP.

EIS Enviro. Engineers, Inc.....
1701 N. Ironwood Dr..
South Bend, IN 46635
Fax: (219)-277-5715
Att:J.C.Spoidler

Lab Number: 80311139
Field ID:MW-3R
Client Project I.D: Avanti Site
Analysis Method: EPA 8260
Sample Descript:Water

Sampled:03/10/98
Received:03/11/98
Extracted:03/23/98
Analyzed:03/23/98
Reported:03/24/98

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone	10	N.D.
Benzene	2	N.D.
Bromobenzene	2	N.D.
Bromodichloromethane	2	N.D.
n-Butylbenzene	2	N.D.
sec-Butylbenzene	2	N.D.
tert-Butylbenzene	2	N.D.
Bromochloromethane	2	N.D.
Bromomethane	2	N.D.
Bromoform	2	N.D.
2-Butanone	5	N.D.
Carbondisulfide	2	N.D.
Carbon tetrachloride	5	N.D.
Chlorobenzene	2	N.D.
Chloroethane	2	N.D.
Chloroform	2	N.D.
Chloromethane	2	N.D.
2-Chlorotoluene	2	N.D.
4-Chlorotoluene	2	N.D.
2-Chloroethyl vinyl ether	2	N.D.
Dibromochloromethane	2	N.D.
Dichlorodifluoromethane	2	N.D.
Dibromomethane	2	N.D.
1,2-Dibromoethane	2	N.D.
1,2-Dibromo-3-chloropropane	2	N.D.
1,3-Dichlorobenzene	2	N.D.
1,2-Dichlorobenzene	2	N.D.
1,4-Dichlorobenzene	2	N.D.
1,1-Dichloroethane	2	N.D.
1,2-Dichloroethane	2	N.D.
1,1-Dichloroethene	2	N.D.
cis-1,2-Dichloroethene	2	N.D.
trans-1,2-Dichloroethene	2	N.D.
1,2-Dichloropropane	2	N.D.
1,3-Dichloropropane	2	N.D.
2,2-Dichloropropane	2	N.D.

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Fax: (219)-277-5715
Att:J.C.Spoidler

Lab Number: 80311139
Field ID:MW-3R
Client Project I.D: Avanti Site
Analysis Method: EPA 8260
Sample Descript:Water

Sampled:03/10/98
Received:03/11/98
Extracted:03/23/98
Analyzed:03/23/98
Reported:03/24/98

VOLATILE ORGANIC COMPOUNDS (EPA/8260)

Analyte	Detection Limit µg/L	Sample Results µg/L
cis-1,3-Dichloropropene	2	N.D.
trans 1,3-Dichloropropene	2	N.D.
1,1-Dichloropropene	2	N.D.
Ethyl Benzene	2	N.D.
2-Hexanone	5	N.D.
Hexachlorobutadiene	2	N.D.
Methylene chloride	2	N.D.
4-methyl-2-pentanone	2	N.D.
Styrene	2	N.D.
Tetrachloroethene	5	N.D.
Toluene	2	N.D.
1,1,2,2-Tetrachloroethane	5	N.D.
1,1,1-Trichloroethane	2	N.D.
1,1,2-Trichloroethane	2	N.D.
Trichloroethene	2	N.D.
Trichlorofluoromethane	2	N.D.
1,1,1,2-Tetrachloroethane	2	N.D.
1,2,3-Trichloropropane	2	N.D.
1,2,4-Trimethylbenzene	2	N.D.
1,3,5-Trimethylbenzene	2	N.D.
1,2,3-Trichlorobenzene	2	N.D.
1,2,4-Trichlorobenzene	2	N.D.
Isopropylbenzene	2	N.D.
p-Isopropyltoluene	2	N.D.
4-Isopropyltoluene	2	N.D.
n-Propylbenzene	2	N.D.
Napthalene	10	N.D.
Vinyl Acetate	5	N.D.
Vinyl chloride	2	N.D.
Total Xylenes	2	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

AMERICAN ENVIRONMENTAL ANALYTICAL CORP.

Laboratory Director
A.E.A. CORP.

ATTACHMENT E

CHAIN-OF-CUSTODY RECORDS FOR GROUNDWATER SAMPLES COLLECTED ON MARCH 10, 1998

CHAIN OF CUSTODY RECORD JNJ438890

CLIENT NO.	PROJECT NO.	PROJECT NAME
1456	1456-980101	South Bend, Community's Economic Development – Avanti Site GW

SAMPLERS: (SIGNATURE) Josh Sporleder

DATE AND TIME OF COMPOSITE	DATE AND TIME OF GRAB	PRIMARY SAMPLE DESCRIPTION	NO. OF CONTAINERS	ANALYSIS OR CONTAINER TYPES (40cc glass Vial HCl)	REMARKS	EIS LAB NO.	SAMPLE STATE	TEMP COOLER BLANK
	3-10-98 13:00	MW-1R	2	2	80311137			
	3-10-98 12:25	MW-2	2	2	80311138			
	3-10-98 11:55	MW-3R	2	2	80311139			
		End of Record						

SEE REVERSE SIDE FOR INSTRUCTIONS

Cooler # 1

EIS LAB USE ONLY

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:
Josh Sporleder	3-10-98		
RELINQUISHED BY:	DATE	TIME	RECEIVED BY:

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:
	3/11/98		
RELINQUISHED BY:	DATE	TIME	RECEIVED BY:

SAMPLE STATE
C = COLD
N = NOT COLD
I = INTACT
B = BROKEN

MODE OF TRANSPORTATION

IS VEHICLE # | PUBLIC

FIELD NOTES:
Samples were packaged and sent by Josh Sporleder via Fed-Ex 3-10-98

SHIPPING CHARGE

EIS ENVIRONMENTAL ENGINEERS, INC.
1701 N. IRONWOOD DR. SOUTH BEND, IN 46635 (219) 277-5715

ATTACHMENT F

MONITORING WELL SAMPLING FORMS FOR WELLS SAMPLED ON MARCH 10, 1998

EIS MONITORING WELL SAMPLING FORM

Well I.D.: MW-1R
Sample I.D.: MW-1R
Collectors: Josh Sporleder
Lab No.: 8031137

Sample Date 3/10/98 13:00 am/(pm)
Client: South Bend, Com.'s Eco. Development
Project No.: 1456-980101
Location: Former Avanti site *
Laboratory: American Environmental Analytical Corp.

PRE-PURGE

Well Material: (PVC)/Stainless/Galvanized/ —) Inside Diameter 2 "
Elevation Top of Casing (TOC) 99.47 ** Ft Grade Elevation = 99.87 Ft
SWL Depth from TOC 23.03 Ft SWL Elevation 76.44 Ft
Well Depth from TOC 29.70 Ft TOC to Grade (Flushmount) + 0.4 Ft
Height of Water Column 6.67 Ft Well Depth from Grade = 30.1 Ft
Volume/Foot Casing ($d^2 \times 0.04079$) 0.1632 Gal/Ft
Volume of Water column 1.08 Gal

PURGE

Time & Date Purged 12:40 am/(pm) 3/10/98
Calculated Volume to Purge 3.26 Gal
Actual Volume Purged 3.5 Gal
Purged: dry/ 1 2 (3) 4 5 6 7 8 9 10 Well Volumes
Purged With: Pump Type — Tubing Size —
Make — Tubing Type —
Bailer (PVC)/SS/Teflon/ —) Rope Material: (Polyprop)

Equip. Dedicated? YES/(NO) Decontaminated With Nonphosphate detergent & DI H_2O

SAMPLING

Time & Date Sampled 13:00 am/(pm) 3/10/98
Weather Conditions: Sky: cloudy Ground: snow Wind: 10-15 MPH
Temp: 28°F Humidity: High/Low/% — Precipitation: snow
SWL (Depth From TOC) Prior to Sampling 23.03 Ft
Height of Water Column Prior to Sampling 6.67 Ft
Recovery to 100.0 % of original water column depth.
Sampled With: Pump Type — Tubing Size —
Make — Tubing Type —
Bailer (PVC/SS/(Teflon)/ —) Rope Material (Polyprop)

Equip. Dedicated? YES/(NO) Decontaminated With Nonphosphate detergent & DI H_2O

Water Appearance: (Clear Slightly/(very turbid)(Color: gray/brown/ —)

Containers Collected: (Size & type		Preservatives
40 cc	Glass Vial	HCL
—	—	—
—	—	—
—	—	—
—	—	—

OTHER

Were metals filtered prior to preservation? YES/NO/(METALS NOT SAMPLED)
Filtration Method: (gravity/vacuum/pressure); Device Type —
Filter (Cartridge/Paper) Type — Size — Pore —
Were samples iced after collection? (YES)/NO —
Field Tests: Hydrolab-or-pH Meter Type — S.C. Meter Type —

Test	Result
Temp:	— °C
pH:	— pH
S.C.:	— umhos

Notes: * Site is former Avanti facility located at the northwest corner of Lafayette and Sample Streets, South Bend, IN. ** TOC elevation from Table 2 of ATEC report dated June 8, 1995 (ATEC Project No 21-07-95-00451).
• A slight odor was noticed in purge water. JMS 3-10-98

1105 Revised (05-21-90)

EIS MONITORING WELL SAMPLING FORM

Well I.D.: MW-2
Sample I.D.: MW-2
Collectors: Josh Soderder
Lab No.: 8031138

Sample Date 3/10/98 12:25 am/(pm)
Client: South Bend, Com. & Eco. Development
Project No.: 1456-980101
Location: Former Avanti Site*
Laboratory: American Environmental Analytical Corp.

PRE-PURGE

Well Material: (PVC)/Stainless/Galvanized/ —) Inside Diameter 2 "
Elevation Top of Casing (TOC) 101.38 ** Ft Grade Elevation=99.58 Ft
SWL Depth from TOC 24.37 Ft SWL Elevation 77.01 Ft
Well Depth from TOC 31.20 Ft TOC to Grade =1.8 Ft
Height of Water Column 6.83 Ft Well Depth from Grade=29.4 Ft
Volume/Foot Casing (d^2x0.04079) 0.1632 Gal/Ft
Volume of Water column 1.11 Gal

(Originally a flushmount, but excavations around well have resulted in the well being above grade. JMS.)

PURGE

Time & Date Purged 12:10 am/(pm) 3/10/98
Calculated Volume to Purge 3.34 Gal
Actual Volume Purged 3.5 Gal
Purged: dry/ 1 2 (3) 4 5 6 7 8 9 10 Well Volumes
Purged With: Pump - Type — Tubing Size —
Make — Tubing Type —
(Bailer) (PVC/SS/Teflon/ —) Rope Material: (Polyprop)

Equip. Dedicated? YES/(NO) Decontaminated With nonphosphate detergent & DI H_2O

SAMPLING

Time & Date Sampled 12:25 am/(pm) 3/10/98
Weather Conditions: Sky: (cloudy) Ground: snow Wind: 10-15 MPH
Temp: 28°F Humidity: (High/Low/%) — Precipitation: snow.
SWL (Depth From TOC) Prior to Sampling 24.37 Ft
Height of Water Column Prior to Sampling 6.83 Ft
Recovery to 100.0 % of original water column depth.
Sampled With: Pump Type — Tubing Size —
Make — Tubing Type —
(Bailer) (PVC/SS/(Teflon)/ —) Rope Material (Polyprop)

Equip. Dedicated? YES/(NO) Decontaminated With nonphosphate detergent & DI H_2O

Water Appearance: (Clear/Slightly/very (turbid)) (Color: gray/(brown)/ —)

Containers Collected: (Size & type		Preservatives
40 cc	Glass Vial	HCl
—	—	—
—	—	—
—	—	—
—	—	—

OTHER

Were metals filtered prior to preservation? YES/NO/(METALS NOT SAMPLED)

Filtration Method: (gravity/vacuum/pressure); Device Type —
Filter (Cartridge/Paper) Type — Size — Pore —
Were samples iced after collection? (YES)/NO
Field Tests: Hydrolab-or-pH Meter Type — S.C. Meter Type —

Test	Result	
Temp:	—	°C
pH:	—	pH
S.C.:	—	umhos

Notes: *Site is former Avanti facility located at the Northwest corner of Lafayette and Sample Streets, South Bend, IN. **TOC elevation from Table 2 of ATEC report dated June 8, 1995 (ATEC Project No 21-07-95-00451).

• A strong odor was noticed while purging water. JMS 3-10-98

1105 Revised (05-21-90)

EIS MONITORING WELL SAMPLING FORM

Well I.D.: MW-3R
Sample I.D.: MW-3R
Collectors: Josh Sperleder
Lab No.: 803111.39

Sample Date 3/10/98 11:55 (am)/pm
Client: South Bend, Com.'s Eco. Development
Project No.: 1456-980101
Location: Former Avanti Site *
Laboratory: American Environmental Analytical Corp.

PRE-PURGE

Well Material: (PVC)/Stainless/Galvanized/ —) Inside Diameter 2 "
Elevation Top of Casing (TOC) 98.83 ** Ft Grade Elevation = 99.13 Ft
SWL Depth from TOC 21.56 Ft SWL Elevation 77.27 Ft
Well Depth from TOC 28.45 Ft TOC to Grade ≈ -0.3 Ft (Flush mount)
Height of Water Column 6.89 Ft Well Depth from Grade = 28.75 Ft
Volume/Foot Casing ($d^2 \times 0.04079$) 0.1632 Gal/Ft
Volume of Water column 1.12 Gal

PURGE

Time & Date Purged 11:35 (am)/pm 3/10/98
Calculated Volume to Purge 3.37 Gal
Actual Volume Purged 3.5 Gal
Purged: dry/ 1 2 (3) 4 5 6 7 8 9 10 Well Volumes
Purged With: Pump - Type — Tubing Size —
Make — Tubing Type —
(Bailer) (PVC)/SS/Teflon/ —) Rope Material: (Polyprop)

Equip. Dedicated? YES/(NO) Decontaminated With nonphosphate Detergent & DI H_2O

SAMPLING

Time & Date Sampled 11:50 (am)/pm 3/10/98
Weather Conditions: Sky: Cloudy Ground: Snow Wind: 10-20 MPH
Temp: 25°F Humidity: High/Low/% — Precipitation: Heavy Snow
SWL (Depth From TOC) Prior to Sampling 21.57 Ft
Height of Water Column Prior to Sampling 6.88 Ft
Recovery to 99.8 % of original water column depth.
Sampled With: Pump Type — Tubing Size —
Make — Tubing Type —
(Bailer) (PVC/SS/Teflon) —) Rope Material (Polyprop)

Equip. Dedicated? YES/(NO) Decontaminated With nonphosphate Detergent & DI H_2O

Water Appearance: (Clear Slightly/(very) turbid) (Color: gray/(brown) —)

Containers Collected: (Size & type		Preservatives
40 cc	Glass Vial	HCL
-	-	-
-	-	-
-	-	-
-	-	-

OTHER

Were metals filtered prior to preservation? YES/NO/(METALS NOT SAMPLED)
Filtration Method: (gravity/vacuum/pressure); Device Type —
Filter (Cartridge/Paper) Type — Size — Pore —
Were samples iced after collection? (YES)/NO —
Field Tests: Hydrolab-or-pH Meter Type — S.C. Meter Type —

Test	Result	
Temp:	—	°C
pH:	—	pH
S.C.:	—	umhos

Notes: * Site is former Avanti facility located at the northwest corner of Lafayette and Sample Streets, South Bend, IN. ** TOC elevation from Table 2 of ATEC report dated June 8, 1995 (ATEC Project No 21-07-95-00451).

1105 Revised (05-21-90)

Well could not be located and was Not Sampled

EIS MONITORING WELL SAMPLING FORM

Attempted to locate and sample 3-10-98 see below.

Well I.D.: MW-4
Sample I.D.: MW-4
Collectors: -NA-
Lab No.: -NA-

Sample Date 3/10/98 : am/pm
Client: South Bend, Com.'s Eco. Development
Project No.: 1456-980101
Location: Former Avanti Site*
Laboratory: American Environmental Analytical Corp.

PRE-PURGE

Well Material: (PVC/Stainless/Galvanized/) Inside Diameter 2 "
Elevation Top of Casing (TOC) 100.62** Ft Grade Elevation — Ft
SWL Depth from TOC — Ft SWL Elevation — Ft
Well Depth from TOC — Ft TOC to Grade — Ft
Height of Water Column — Ft Well Depth from Grade — Ft
Volume/Foot Casing ($d^2 \times 0.04079$) 0.1632 Gal/Ft
Volume of Water column — Gal

PURGE

Time & Date Purged — : — am/pm — / — / — -NA-
Calculated Volume to Purge — Gal
Actual Volume Purged — Gal
Purged: dry/ 1 2 3 4 5 6 7 8 9 10 Well Volumes
Purged With: Pump - Type — Tubing Size —
Make — Tubing Type —
-NA- Bailer (PVC/SS/Teflon/) Rope Material: (Polyprop)

Equip. Dedicated? YES/(NO) Decontaminated With Nonphosphate detergent & DI H2O.

SAMPLING

Time & Date Sampled — : — am/pm — / — / — -NA-
Weather Conditions: Sky: — Ground: — Wind: —
Temp: — Humidity: High/Low/% — Precipitation: —
SWL (Depth From TOC) Prior to Sampling — Ft
Height of Water Column Prior to Sampling — Ft
Recovery to — % of original water column depth.
Sampled With: Pump Type — Tubing Size —
Make — Tubing Type —
Bailer (PVC/SS/(Teflon)) Rope Material (Polyprop)

Equip. Dedicated? YES/(NO) Decontaminated With Nonphosphate detergent & DI H2O.

Water Appearance: (Clear Slightly/very turbid)(Color: gray/brown/)

Containers Collected: (Size & type)

	40 cc	Glass Vial	Preservatives
(Not collected)	-	-	HCL
	-	-	-
	-	-	-
	-	-	-
	-	-	-

OTHER

Were metals filtered prior to preservation? YES/NO/(METALS NOT SAMPLED)

Filtration Method: (gravity/vacuum/pressure); Device Type —
Filter (Cartridge/Paper) Type — Size — Pore —
Were samples iced after collection? YES/NO —
Field Tests: Hydrolab-or-pH Meter Type — S.C. Meter Type —

Test	Result
Temp:	— °C
pH:	— pH
S.C.:	— umhos

Notes: *Site is former Avanti facility located at the Northwest corner of Lafayette and Sample Streets, South Bend, IN. **TOC elevation from Table 2 of ATEC report dated June 8, 1995 (ATEC Project No 21-07-95-00451).

1105 Revised (05-21-90)

* (MW-4 was not found. J.C. Sporleder & Josh Sporleder searched for MW-4 from 10:00 to 11:00 am 3-10-98. Buried under snow and mud or possibly has been destroyed.

ATTACHMENT G

COPIES OF INDIANA DEPARTMENT OF NATURAL RESOURCES (IDNR) WATER WELL ABANDONMENT RECORDS FOR WELLS ABANDONED ON MARCH 24, 1998 (THE ORIGINAL FORMS HAVE BEEN PROVIDED TO THE IDNR)

COPY

RECORD OF WATER WELL

State Form 35680 (R3 / 11-87

Mail and complete record within 30 days to:
INDIANA DEPARTMENT OF NATURAL RESOURCES
Division of Water
402 W. Washington St., Room W264
Indianapolis, Indiana 46204

WELL LOCATION

County where drilled	Civil Township	Township	Range	Section
St. Joseph	Portage	37N	2E	SE1/4 - 11, SW1/4 - 12

Driving directions to the well location (include county road names, number, subdivisions lot number with consideration to intersecting, road and trip origination there is space for a map on reverse side

31 N to downtown South Bend, W on Sample St. 2 blocks, Turn N on Lafayette, site on left

OWNER - CONTRACTOR

Name of well owner: City of South Bend - Community Economic Development - Ms. Anne E. Kolata		Telephone Number: 219-235-9371
Address (Street number, city, street): Former Avanti Site		ZIP code
Name of building contractor		Telephone number
Address (Street and number, city, state)		ZIP Code
Name of drilling contractor: Cook Drilling Company, LLC		Telephone Number: 616-684-6269
Address (Street and number, city, state): 2410 Weaver Road		ZIP Code: 49120
Name of equipment operator: Marc S. Cook	License number: 973	Date of completion: 3/24/98

CONSTRUCTION DETAILS

Use of well:
☐ Home ☐ Industry [x] Test ☐ Irrigation
☐ Public supply ☐ Stock ☐ Other (specify) MW-1R

Method of Drilling:

Casing length feet	Material	Diameter inches
Screen length feet	Material	Diameter inches
Screen slot size	Total depth of well	
Depth of pump setting	Water quality(Clear, cloudy, odor, etc	
Type of pump		

WELL CAPACITY TEST

GROUTING INFORMATION / WELL ABANDONMENT

Grout material	Grout depth	Sealing Material	Depth filled
		Bent chips	*30'
Method of installation	No. of bags	Method	No. of bags
		Poured/hydrate	.75

WELL LOG

Formations: type of material	From (Feet)	To (Feet)
*Filled well to 10'bgl, overdrilled casing and removed 10' of riser, installed concrete & bent. seal, removed augers, filled with sand		

Signature of owner of authorized representative: Marc S Cook

Date: 3 26 98

COPY

RECORD OF WATER WELL

State Form 35680 (R3 / 11-87

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INDIANA DEPARTMENT OF NATURAL RESOURCES
Division of Water
402 W. Washington St., Room W264
Indianapolis, Indiana 46204

WELL LOCATION

County where drilled	Civil Township	Township	Range	Section
St Joseph	Portage	37N	2E	SE1/4 - 11, SW1/4

Driving directions to the well location (include county road names, number, subdivisions lot number with consideration to intersecting, road and trip origination there is space for a map on reverse side

31 N to downtown South Bend. W on Sample St 2 blocks, N on Lafayette, site on left

OWNER - CONTRACTOR

Name of well owner: City of South Bend - Community Economic Development - Ms. Anne E. Kolata		Telephone Number: 219-235-9371
Address (Street number, city, street): Former Avanti Site		ZIP code
Name of building contractor		Telephone number
Address (Street and number, city, state)		ZIP Code
Name of drilling contractor: Cook Drilling Company, LLC		Telephone Number: 616-684-6269
Address (Street and number, city, state): 2410 Weaver Road, Niles, MI		ZIP Code: 49120
Name of equipment operator: Marc S. Cook	License number: 973	Date of completion: 3.24.98

CONSTRUCTION DETAILS

Use of well:
☐ Home ☐ Industry [X] Test ☐ Irrigation
☐ Public supply ☐ Stock ☐ Other (specify) MW-2

Method of Drilling:

Casing length feet	Material	Diameter inches
Screen length feet	Material	Diameter inches
Screen slot size	Total depth of well	
Depth of pump setting	Water quality(Clear, cloudy, odor, etc	
Type of pump		

WELL CAPACITY TEST

GROUTING INFORMATION / WELL ABANDONMENT

Grout material	Grout depth	**Sealing Material**	**Depth filled**
		Bent chips	***30'**
Method of installation	No. of bags	**Method**	**No. of bags**
		Poured/hydrate	**.75**

WELL LOG

Formations: type of material	From (Feet)	To (Feet)
*Filled well to 10' bgl, overdrilled casing and removed 10' of riser, installed concrete & bent. seal, removed augers, filled with sand to surface		

Signature of owner of authorized representative: Marc S. Cook

Date: 3/26/98

COPY

RECORD OF WATER WELL

State Form 35680 (R3 / 11-87

Mail and complete record within 30 days to:
INDIANA DEPARTMENT OF NATURAL RESOURCES
Division of Water
402 W. Washington St., Room W264
Indianapolis, Indiana 46204

WELL LOCATION

County where drilled	Civil Township	Township	Range	Section
St Joseph	Portage	37N	2E	SE1/4 -11, SW1/4 - 12

Driving directions to the well location (include county road names, number, subdivisions lot number with consideration to intersecting, road and trip origination there is space for a map on reverse side

31 N to downtown South Bend, W on Sample St. 2 blocks, N on Lafayette, site on left

OWNER - CONTRACTOR

Name of well owner: City of South Bend - Community Economic Development - Ms. Anne E. Kolata		Telephone Number: 219-235-9371
Address (Street number, city, street): Former Avanti Site		ZIP code
Name of building contractor		Telephone number
Address (Street and number, city, state)		ZIP Code
Name of drilling contractor: Cook Drilling Company, LLC		Telephone Number: 616-684-6269
Address (Street and number, city, state): 2410 Weaver Road, Niles, MI		ZIP Code: 49120
Name of equipment operator: Marc S. Cook	License number: 973	Date of completion: 3/24/98

CONSTRUCTION DETAILS

Use of well.
☐ Home ☐ Industry [X] Test ☐ Irrigation
☐ Public supply ☐ Stock ☐ Other (specify) MW-3R

Method of Drilling:

Casing length feet	Material	Diameter inches
Screen length feet	Material	Diameter inches
Screen slot size	Total depth of well	
Depth of pump setting	Water quality(Clear, cloudy, odor, etc	
Type of pump		

WELL CAPACITY TEST

GROUTING INFORMATION

Grout material	Grout depth	Sealing Material	Depth filled
		Bent Chips	*30'
Method of installation	No. of bags	Method	No. of bags
		Poured/hydrate	.75

WELL ABANDONMENT

*Filled well to 10' bgl, overdrilled casing and removed 10' of riser, installed concrete & bent. seal, removed augers, filled with sand to surface.

Signature of owner of authorized representative: Marc S Cook

Date: 3/26/98

WELL LOG

Formations: type of material	From (Feet)	To (Feet)