

***October 6, 2005
Public Meeting***

Press Release

Elkhart County Commissioners Puterbaugh Creek - Heaton Lake
Watershed Management Plan

Elkhart County Commissioners have received a \$60,000 Federal Fiscal Year 2002 205(j) Water Quality Planning Grant from the US Environmental Protection Agency for the development of a Watershed Management Plan for the Puterbaugh Creek - Heaton Lake Watershed. The Puterbaugh Creek - Heaton Lake Watershed encompasses an area of approximately 17 square miles. Its northern boundary extends into the State of Michigan and south to include the Heaton Lake and Puterbaugh Creek. This watershed study area encompasses nearly all of Osolo Township and the western portion of Washington Township.

A Joint Stakeholder Meeting is scheduled for 6:00 PM on Thursday, October 6, 2005 at Eastwood Elementary School located at 53215 CR 15 North, Elkhart, Indiana. The purpose of the meeting is to inform the public about the Watershed Management Plan Project and invite participation in the Watershed Planning process.

Questions concerning this meeting should be directed to Mr. Christopher J. Jeter at Lawson-Fisher Associates (574) 234-3167 or Ms. Kristine Krueger at the Elkhart County Commissioners Office (574) 535-6746.



LAWSON-FISHER ASSOCIATES P.C.
CONSULTING ENGINEERS

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DANIEL R. LAWSON, P.E.
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JOHN A. MIDDLETON, P.E.
PIPER C. TITTLE, P.E.
THOMAS S. SHARP, P.E.
THERESA E. HARRISON, P.E.
JON E. RIEMKE, P.E.
JEFFREY L. MCKEAN, P.E.
RANDOLPH J. LINDLEY, P.E.
SKY K. MEDORS, P.E.
→ CHRISTOPHER J. JETER, P.E.
DENNIS A. ZEBELL, P.E.
BENJAMIN P. HOLDEN, P.E.
DAN G. DELGADO, P.E.
MARK H. FOSTER, P.E.
CHARLES F. FARRELL, P.E.
MICHAEL J. GUZIK, P.E.
MICHAEL F. JOHNSTON, P.E.

September 26, 2005

Ms. Nancy Brown, Program Manager
Elkhart County SWCD
17746-B C.R. 34
Goshen, IN 46528

RE: Elkhart County Commissioners
Section 205(j) Watershed Management Plan Grant
Puterbaugh Creek – Heaton Lake Watershed
Watershed Steering Committee Meeting

Dear Ms. Brown:

The following letter is to inform you that a Watershed Steering Committee Meeting is scheduled for the above referenced project. The meeting is scheduled for 6:00 P.M. on Thursday, October 6, 2005, at Eastwood Elementary School located at 53215 County Road 15 North, Elkhart, Indiana. The purpose of the meeting is to inform the public about the Watershed Management Plan Project and invite participation in the Watershed Planning process.

Please do not hesitate to contact us should you have any questions or comments.

Very truly yours,

LAWSON-FISHER ASSOCIATES P.C.

Christopher J. Jeter, P.E.
Civil Engineer

CJJ/bsa

c: Kristine Krueger
John E. Fisher, P.E.
Piper C. Tittle, P.E.

**Elkhart County Commissioners
Section 205(j) Watershed Management Plan Grant
Puterbaugh Creek – Heaton Lake
Watershed Steering Committee Meeting
October 6, 2005**

Ms. Kristine Krueger
Elkhart County Government
117 North Second Street
Goshen, IN 46526

Mr. Robert Watkins
Elkhart County Health Department
4230 Elkhart Road
Goshen, IN 46526

Mr. John Hulewicz
Elkhart County Health Department
4230 Elkhart Road
Goshen, IN 46526

Mr. Denny Lyon
Elkhart County Surveyor's Office
4230 Elkhart Road
Goshen, IN 46526

Mr. Blake Doriot
Elkhart County Surveyor's Office
4230 Elkhart Road
Goshen, IN 46526

Mr. Steve Schweisberger
Elkhart County Surveyor's Office
4230 Elkhart Road
Goshen, IN 46526

Ms. Nancy Brown
Elkhart County SWCD
17746-B C.R. 34
Goshen, IN 46528

Ms. Bev Stevenson
Elkhart County SWCD
17746-B C.R. 34
Goshen, IN 46528

Mr. Donald Parker
2101 Grant Street
Elkhart, IN 46514

Mr. Everett Lienhart
22541 Lakeshore Drive
Elkhart, IN 46514

Mr. Scott Robinia
22880 Lakeshore Drive
Elkhart, IN 46514

Mr. Bill West
23170 Heaton Vista
Elkhart, IN 46514

Ms. Bonnie Shanholt
23197 Heaton Vista
Elkhart, IN 46514

Mr. Don West
52352 C.R. 13
Elkhart, IN

Mary Sproull
23173 Heaton Vista
Elkhart, IN 46514

Mr. James Riley
22886 Lake Shore Drive
Elkhart, IN 46514

Mr. and Mrs. Ty Miller
29893 Olin Court
Elkhart, IN 46514

Mr. Ben Russo
25600 County Road 4
Elkhart, IN 46514

Mr. Kyle Hannon
5 Kim Court
Elkhart, IN 46514

Mr. Bob Stone
23019 Lakeshore Drive
Elkhart, IN 46514

**Elkhart County Commissioners
Section 205(j) Watershed Management Plan Grant
Puterbaugh Creek – Heaton Lake
Watershed Steering Committee Meeting
October 6, 2005**

Mr. Dave Simmons
22892 Lakeshore Drive
Elkhart, IN 46514-9571

Mr. John Hardy
54507 David Drive
Elkhart, IN 46514

Mr. and Ms. Tom Davis
52860 County Road 15
Elkhart, IN 46514

Mr. Nathan Rice, Grant Project Manager
Indiana Dept. of Environ. Mgmt.
Watershed Management Section
100 North Senate Avenue
Indianapolis, IN 46204

Mr. Maynard Good
23257 County Road 18
Goshen, IN 46528

Mr. and Mrs. Shawn Nicodemus
2600 Broadmoor Drive
Elkhart, IN 46514

Mr. Eric Kurtz
Elkhart County SWCD
17746-B C.R. 34
Goshen, IN 46528



MEMORANDUM

October 27, 2005

TO: LFA Project File 200406.00

FROM: Christopher J. Jeter, P.E. 

RE: Elkhart County Commissioners
Section 205(j) Watershed Planning Grant
Puterbaugh Creek – Heaton Lake Watershed Management Plan
Stakeholder Meeting No. 6
Public Meeting No. 7

The sixth stakeholder meeting for the above referenced project was conducted at Eastwood Elementary School on October 6, 2005. This meeting was the seventh in a series of eight (8) public meetings being conducted for the project. Copies of the agenda, sign-in sheet and handouts are included with this memorandum.

The meeting began with an introduction and brief overview of the watershed planning project by Mr. Chris Jeter. Mr. Jeter provided an overview of the following two (2) previous stakeholder meeting items:

- Watershed Management Plan Goals and Decisions
- Water Quality Sampling conducted by Lawson-Fisher Associates P.C. (LFA) at the C.R. 17 Bog

The overview of the previous meeting's issues consisted of reviewing the Goals and Decisions for the Plan along with presenting a timetable for the Plan's goals to be implemented. In addition, the results of the groundwater quality sampling that was conducted by LFA from March 2001 to March 2003 at the C.R. 17 bog was presented to the Stakeholders.

After completing the overview and project updates, the stakeholders were given an opportunity to ask questions and/or provide comments on the 205(j) project. The following items were discussed:

- A few of the attendees recommended that Goal 4 – Evaluate means to plan, finance, construct, operate, and maintain public wastewater systems – be modified to include developing a partnership between Elkhart County and the Regional Sewer District. The Regional Sewer District was involved in bring sewer to the area surrounding Heaton Lake. In addition, it was suggested that a priority area be identified that would be a candidate to receive sanitary sewer service.
- A few of the attendees discussed the proposed development near C.R. 4 and C.R. 17. This development will include sanitary sewer and water service.



- Mr. Jeter discussed a recent magazine article that mentioned St. Joseph County, Indiana's policy with respect to septic tank inspections prior to the sale of a home. The inspector is required to open a septic tank, flush 20 gallons of water through the system and check for problems. This allows for full disclosure to the potential buyer and the inspection is then filed with the County Health Department. One of the attendees mentioned that Elkhart County is considering trying to pass a County ordinance that would only allow a septic system to be installed on property that meets minimum acreage requirements.
- One of the attendees indicated that the water table is approximately 7-feet beneath the ground during the spring around Heaton Lake. This attendee also indicated that the water table is approximately 2-feet near the Indiana/Michigan State Line.
- An attendee informed the group that the top of Heaton Lake Dam is at the same elevation as the invert of the culvert under C.R. 15.
- One of the attendees mentioned that a report was prepared for the IDNR in the 1980's regarding the water quality for approximately 80 lakes throughout the State of Indiana. This report listed Heaton Lake as one of the lakes exhibiting good water quality characteristics.
- An attendee mentioned that any groundwater wells that are drilled on the north side of Heaton Lake should not be any deeper than 25-feet below the ground surface. Any wells that are drilled deeper would encounter a vein of groundwater that is high in concentrations of sulphur and iron.
- The final Stakeholder Meeting will be conducted on November 16, 2005 at 6:00 p.m. at Eastwood Elementary School. The Watershed Management Plan will be presented at this meeting to the stakeholders prior to the submittal of the plan to IDEM. Prior to this meeting, LFA personnel will be presenting the goals of the plan to the Elkhart County Commissioners at their Board Meeting on October 31, 2005.

CJJ/cas
Encls.



**Elkhart County Commissioners
205(j) Watershed Planning Grant
Puterbaugh Creek – Heaton Lake Watershed Management Plan**

Joint Stakeholder Committee Meeting

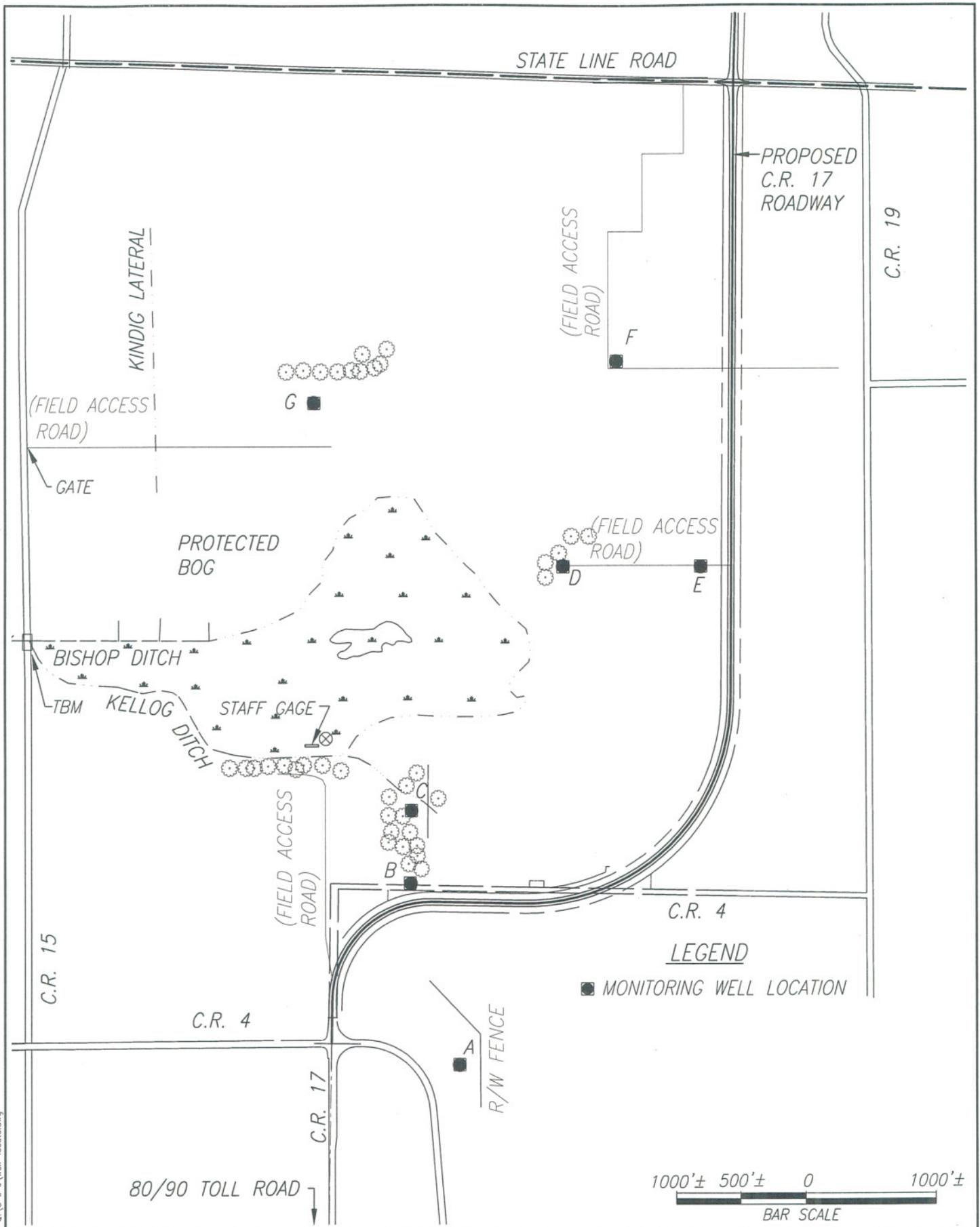
October 6, 2005 at 6:00 P.M.

Agenda

1. Welcome and Introduction
2. Previous Stakeholder Meeting Issues
 - *Goals and Decisions*
 - *Lawson-Fisher Associates P.C. Water Quality Sampling at C.R. 17 Bog*
3. Puterbaugh Creek – Heaton Lake Watershed Management Plan Project
 - *Watershed Management Plan Submittal*
 - *Schedule*
4. Conclusion
5. Discussion
6. Future Meetings

Table 13
Calendar of Events and Project Milestones

<i>Event or Project Milestone</i>	<i>Date/Timeframe</i>	<i>Activity</i>
Milestone	January 1, 2004	ECC 205(j) Grant Project Begins
Event	March 11, 2004	Puterbaugh Creek – Heaton Lake Watershed, 1 st Public Meeting
Event	June 7-8, 2004	INDOT Stream Restoration Training Workshop
Event	June 16, 2004	Joint Steering Committee Meeting (Public Meeting)
Event	September 15, 2004	Getting in Step: Engaging and Involving Stakeholders in Your Watershed Seminar
Event	September 29, 2004	Joint Steering Committee Meeting (Public Meeting)
Event	December 15, 2004	Joint Steering Committee Meeting (Public Meeting)
Event	March 24, 2005	Joint Steering Committee Meeting (Public Meeting)
Event	June 23-24, 2005	Urban Watershed Management BMPs Seminar
Event	June 30, 2005	Joint Steering Committee Meeting (Public Meeting)
Event	January 1, 2006	ECC 205(j) Grant Project Ends
Milestone	January, 2006 – January, 2007	Identify Watershed Coordinator. (Goal 11)
Milestone	January, 2006 – January, 2007	Identify Source(s) of Rhineheart Lateral Contamination. (Goal 1)
Milestone	January, 2006 – January, 2007	Identify Source(s) of Mather Ditch Contamination. (Goal 2)
Milestone	January, 2006 – January, 2007	Identify Source(s) of Kindig/Kellog Ditch and Bishop Ditch Contamination. (Goal 3)
Milestone	January, 2006 – January, 2007	Review existing ordinances, policies and land use plans. (Goal 6)
Milestone	January, 2006 – January, 2008	Evaluate means to plan, finance, construct, operate and maintain public wastewater systems. (Goal 4)
Milestone	January, 2006 – January, 2008	Review County Subdivision and Roadway Standards. Incorporate (if necessary) appropriate BMPs for construction and post construction conditions. (Goal 10)
Milestone	January, 2006 – January, 2009	Encourage science program through local school system. (Goal 9)
Milestone	January, 2006 – January, 2009	Recruit an individual or group to participate in Hoosier River Watch Program. (Goal 9)
Milestone	January, 2007 – January, 2009	Eliminate source(s) of Rhineheart Lateral Contamination. (Goal 1)
Milestone	January, 2007 – January, 2009	Eliminate source(s) of Mather Ditch Contamination. (Goal 2)
Milestone	January, 2007 – January, 2009	Eliminate source(s) of Kindig/Kellog Ditch and Bishop Ditch Contamination. (Goal 3)
Milestone	January, 2006 – January, 2011	Perform sanitary survey of Puterbaugh Creek and its tributaries. (Goal 5)
Milestone	January, 2006 – January, 2011	Use the Puterbaugh Creek – Heaton Lake Watershed Management Plan as a template for other watersheds. (Goal 7)
Milestone	January, 2006 – January, 2011	Increase conservation tillage practices by 5% within the watershed. (Goal 10)
Milestone	January, 2006 – January, 2011	Construct 5 acres of filter strips within the watershed. (Goal 10)



sfr - Oct 04, 2005 - 1:26pm Q:\C J J\well-locate.dwg



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CONSULTING ENGINEERS**
525 W. WASHINGTON AVE.
SOUTH BEND, INDIANA 46601
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**ELKHART COUNTY, INDIANA
C.R. 17 EXTENSION
GROUNDWATER MONITORING
WELL LOCATION MAP**

**FIG.
1**

Table 3
County Road 17 Groundwater Monitoring Well
Analytical Testing Results
March 22, 2001

Water Quality Parameters (mg/L)	Test Method*	MW-A	MW-B	MW-C	MW-D	MW-E	MW-F	MW-G	Typical GW Concentrations (mg/L)**	IN WQS (mg/L)	IN GWQS (mg/L)
Acidity (as CaCO ₃)	2310B	ND	NL	NL	NL						
Alkalinity (as CaCO ₃), Bicarbonate	2320B	64	26	36	100	84	64	29	556	NL	NL
Alkalinity (as CaCO ₃), Total	2320B	100	42	58	190	140	100	48	NL	NL	NL
Bromide	EPA300	0.01	ND	ND	ND	ND	ND	0.02	NL	NL	NL
Calcium	EPA200.7	36.0	24.4	28.2	59.8	42.9	36	33.4	92	NL	NL
Chloride	4500-Cl E	6.5	6.9	3.4	2.2	4.5	3.1	44	9.6	230	250
Dissolved Oxygen	4500-O G	7.8	7.3	8.2	7.88	8.02	4.42	7.92	NL	NL	NL
Iodide	4500-I C	ND	NL	NL	NL						
Magnesium	EPA200.7	9.12	3.29	3.45	14.0	11.0	7.05	7.05	34	NL	NL
Nitrogen (Nitrate + Nitrite)	4500-NO ₃	1.6	0.17	0.17	0.55	ND	2.6	0.22	2.7	10	NL
pH (field)	EPA150.1	8.3	8.8	8.2	8.0	8.1	8.1	8.1	NL	NL	NL
Potassium	EPA258.1	0.67	0.23	0.29	0.77	0.81	0.7	1.1	1.4	NL	NL
Sodium	EPA200.7	1.7	1.9	1.3	3.2	1.4	3.1	4.0	8.2	NL	NL
Total Dissolved Solids	2540C	164	80	108	228	180	186	172	434	NL	500
Specific Conductance (field)	2510B	260	120	130	340	280	240	230	NL	NL	NL
Sulfate	4500-SO ₄	27	15	16	34	28	25	24	84	NL	250
Surfactants (MBAS)	5540C	ND	NL	NL	NL						
Temperature (field)	EPA170.1	7.6	7.2	7.3	8.4	9.1	6.8	7.7	NL	NL	NL
Turbidity	2130B	21	48	74	10	11	13	28	NL	NL	NL

Notes:

*Test Method number listed is a Standard Method, unless preceded by EPA which indicates an Environmental Protection Agency test method.

**Source: Snoeyink, V. and D. Jenkins. *Water Chemistry*. John Wiley & Sons, Inc., New York, 1980. Typical Analyses of Groundwater, Dayton, OH.

EPA DWS: Environmental Protection Agency National Primary Drinking Water Standards

IN WQS: State of Indiana Water Quality Standards for surface water

IN GWQS: State of Indiana Groundwater Quality Standards (Adopted August 8, 2001)

ND: Parameter not detected above laboratory detection limits for the specific test method.

NL: Parameter not listed in the referenced source.

Table 4
County Road 17 Groundwater Monitoring Well
Analytical Testing Results
September 7, 2001

Water Quality Parameters (mg/L)	Test Method*	MW-A	MW-B	MW-C	MW-D	MW-E	MW-F	MW-G	Typical GW Concentrations (mg/L)**	IN WQS (mg/L)	IN GWQS (mg/L)
Acidity (as CaCO ₃)	2310B	ND	ND	ND	ND	ND	ND	ND	NL	NL	NL
Alkalinity (as CaCO ₃), Bicarbonate	2320B	44	88	60	94	66	60	28	556	NL	NL
Alkalintiy (as CaCO ₃), Total	2320B	72	140	98	150	110	98	46	NL	NL	NL
Bromide	EPA300	ND	ND	ND	ND	ND	ND	0.02	NL	NL	NL
Calcuim	EPA200.7	26.3	43.8	30.8	55.0	32.1	37.5	25.5	92	NL	NL
Chloride	4500-Cl E	7.5	4.0	3.7	3.2	1.1	4.9	8.6	9.6	230	250
Dissolved Oxygen	4500-O G	8.1	3.7	3.3	9.5	9.6	5.3	5.0	NL	NL	NL
Iodide	4500-I C	0.010	ND	ND	ND	0.010	0.011	0.010	NL	NL	NL
Magnesium	EPA200.7	5.89	10.9	7.3	13.2	7.5	8.53	6.5	34	NL	NL
Nitrogen (Nitrate + Nitrite)	4500-NO ₃	2.1	ND	ND	0.2	0.13	2.9	0.2	2.7	10	NL
pH (field)	EPA150.1	8.2	7.7	7.6	7.8	8.0	8.0	7.6	NL	NL	NL
Potassium	EPA258.1	0.7	0.46	0.42	0.9	0.9	0.68	1.92	1.4	NL	NL
Sodium	EPA200.7	1.5	1.7	1.3	3.4	1.0	2.6	3.2	8.2	NL	NL
Total Dissolved Solids	2540C	140	190	150	220	120	190	140	434	NL	500
Specific Conductance (field)	2510B	160	250	180	290	170	210	150	NL	NL	NL
Sulfate	4500-SO ₄	5	16	26	32	8.3	24	28	84	NL	250
Surfactants (MBAS)	5540C	ND	ND	ND	ND	ND	ND	ND	NL	NL	NL
Temperature (field)	EPA170.1	14.3	13.9	13.8	14.5	13.6	15.3	16.1	NL	NL	NL
Turbidity	2130B	3.1	3.6	12	3.5	6	5.6	7.9	NL	NL	NL

Notes:

*Test Method number listed is a Standard Method, unless preceeded by EPA which indicates an Environmental Protection Agency test method.

**Source: Snoeyink, V. and D. Jenkins. *Water Chemistry*. John Wiley & Sons, Inc., New York, 1980. Typical Analyses of Groundwater, Dayton, OH.

IN WQS: State of Indiana Water Quality Standards for surface water

IN GWQS: State of Indiana Groundwater Quality Standards (Adopted August 8, 2001)

ND: Parameter not detected above laboratory detection limits for the specific test method.

NL: Parameter not listed in the referenced source.

Table 5
County Road 17 Groundwater Monitoring Well
Analytical Testing Results
March 14, 2002

Water Quality Parameters (mg/L)	Test Method*	MW-A	MW-B	MW-C	MW-D	MW-E	MW-F	MW-G	Typical GW Concentrations (mg/L)**	IN WQS (mg/L)	IN GWQS (mg/L)
Acidity (as CaCO ₃)	2310B	ND	ND	ND	ND	ND	ND	ND	NL	NL	NL
Alkalinity (as CaCO ₃), Bicarbonate	2320B	70	220	41	120	110	60	28	556	NL	NL
Alkalinity (as CaCO ₃), Total	2320B	110	370	67	200	180	98	46	NL	NL	NL
Bromide	EPA300	0.01	ND	ND	ND	ND	ND	0.01	NL	NL	NL
Calcium	EPA200.7	197.0	25.3	34.6	66	85.7	82.3	19.4	92	NL	NL
Chloride	4500-Cl E	8.1	ND	ND	3.1	2.6	4.7	8.1	9.6	230	250
Dissolved Oxygen	4500-O G	7.52	6.84	8.17	9.38	7.13	7.06	7.65	NL	NL	NL
Iodide	4500-I C	ND	ND	ND	ND	ND	ND	ND	NL	NL	NL
Magnesium	EPA200.7	96.5	3.97	4.31	18.3	27.3	31.9	4.4	34	NL	NL
Nitrogen (Nitrate + Nitrite)	4500-NO ₃	1.4	ND	ND	0.36	ND	2.3	ND	2.7	10	NL
pH (field)	EPA150.1	8.16	8.71	8.03	7.9	7.86	8.27	7.72	NL	NL	NL
Potassium	EPA258.1	1.11	0.24	0.27	0.9	1.18	0.98	0.5	1.4	NL	NL
Sodium	EPA200.7	3.8	8.8	4.1	5.3	1.1	4.6	4.7	8.2	NL	NL
Total Dissolved Solids	2540C	200	110	120	270	220	200	120	434	NL	500
Specific Conductance (field)	2510B	270	150	140	430	350	250	160	NL	NL	NL
Sulfate	4500-SO ₄	16	17	13	28	13	34	31	84	NL	250
Surfactants (MBAS)	5540C	ND	ND	ND	ND	ND	ND	ND	NL	NL	NL
Temperature (field)	EPA170.1	8.1	7.9	7.9	8.4	7.13	7.3	7.7	NL	NL	NL
Turbidity	2130B	568	66	81	71	425	510	51	NL	NL	NL

Notes:

*Test Method number listed is a Standard Method, unless preceded by EPA which indicates an Environmental Protection Agency test method.

**Source: Snoeyink, V. and D. Jenkins. *Water Chemistry*. John Wiley & Sons, Inc., New York, 1980. Typical Analyses of Groundwater, Dayton, OH.

EPA DWS: Environmental Protection Agency National Primary Drinking Water Standards

IN WQS: State of Indiana Water Quality Standards for surface water

IN GWQS: State of Indiana Groundwater Quality Standards (Adopted August 8, 2001)

ND: Parameter not detected above laboratory detection limits for the specific test method.

NL: Parameter not listed in the referenced source.

Table 6
County Road 17 Groundwater Monitoring Well
Analytical Testing Results
October 29, 2002 and October 31, 2002

Water Quality Parameters (mg/L)	Test Method*	MW-A	MW-B	MW-C	MW-D	MW-E	MW-F	MW-G	Typical GW Concentrations (mg/L)**	IN WQS (mg/L)	IN GWQS (mg/L)
Acidity (as CaCO ₃)	2310B	ND	ND	ND	ND	ND	ND	ND	NL	NL	NL
Alkalinity (as CaCO ₃), Bicarbonate	2320B	48	80	52	100	90	55	31	556	NL	NL
Alkalintiy (as CaCO ₃), Total	2320B	80	130	85	160	150	91	51	NL	NL	NL
Bromide	EPA300	ND	ND	ND	ND	ND	0.01	0.04	NL	NL	NL
Calcuim	EPA200.7	29.3	39.2	28.2	56.8	47.6	37.9	27.8	92	NL	NL
Chloride	4500-CI E	2.1	3.2	2	3	1.3	6.5	8.7	9.6	230	250
Dissolved Oxygen	4500-O G	7.6	5.63	2.3	7.59	5.53	5.07	6.5	NL	NL	NL
Iodide	4500-I C	ND	ND	ND	ND	ND	ND	ND	NL	NL	NL
Magnesium	EPA200.7	6.4	12.2	8.8	15.1	11.2	8.6	9.21	34	NL	NL
Nitrogen (Nitrate + Nitrite)	4500-NO3	1.6	ND	ND	0.14	0.13	3.3	0.53	2.7	10	NL
pH (field)	EPA150.1	8.42	7.9	8.16	7.9	7.92	8.03	7.82	NL	NL	NL
Potassium	EPA258.1	0.54	0.44	0.34	1.02	0.96	1.09	2.24	1.4	NL	NL
Sodium	EPA200.7	1.6	1.4	1.8	4.4	1.5	2.2	4.2	8.2	NL	NL
Total Dissolved Solids	2540C	120	160	120	220	160	160	180	434	NL	500
Specific Conductance (field)	2510B								NL	NL	NL
Sulfate	4500-SO4	10	10	24	17	29	19	9.2	84	NL	250
Surfactants (MBAS)	5540C	0.35	ND	ND	ND	ND	ND	ND	NL	NL	NL
Temperature (field)	EPA170.1	11.6	11.1	10.3	13.6	12.67	11.7	10.47	NL	NL	NL
Turbidity	2130B	6.4	1.4	5.1	24	15	6.1	170	NL	NL	NL

Notes:

*Test Method number listed is a Standard Method, unless preceeded by EPA which indicates an Environmental Protection Agency test method.

**Source: Snoeyink, V. and D. Jenkins. *Water Chemistry*. John Wiley & Sons, Inc., New York, 1980. Typical Analyses of Groundwater, Dayton, OH.

EPA DWS: Environmental Protection Agency National Primary Drinking Water Standards

IN WQS: State of Indiana Water Quality Standards for surface water

IN GWQS: State of Indiana Groundwater Quality Standards (Adopted August 8, 2001)

ND: Parameter not detected above laboratory detection limits for the specific test method.

NL: Parameter not listed in the referenced source.

Table 7
County Road 17 Groundwater Monitoring Well
Analytical Testing Results
April 3, 2003

Water Quality Parameters (mg/L)	Test Method*	MW-A	MW-B	MW-C	MW-D	MW-E	MW-F	MW-G	Typical GW Concentrations (mg/L)**	IN WQS (mg/L)	IN GWQS (mg/L)
Acidity (as CaCO ₃)	2310B	ND	ND	ND	ND	ND	ND	ND	NL	NL	NL
Alkalinity (as CaCO ₃), Bicarbonate	2320B	59	87	90	83	83	55	35	556	NL	NL
Alkalinity (as CaCO ₃), Total	2320B	96	140	150	140	140	91	57	NL	NL	NL
Bromide	EPA300	ND	ND	0.02	ND	ND	0.01	0.04	NL	NL	NL
Calcium	EPA200.7	36.0	42.9	42.9	44.5	45.3	37.3	28.9	92	NL	NL
Chloride	4500-Cl E	3.2	4.2	5.1	1.3	1.4	4.4	7.2	9.6	230	250
Dissolved Oxygen	4500-O G	6.17	1.51	2.23	8.48	5	4.15	3.8	NL	NL	NL
Iodide	4500-I C	0.002	0.001	0.001	ND	0.002	0.001	0.002	NL	NL	NL
Magnesium	EPA200.7	8.29	14.5	17.5	10.8	10.6	9.1	6.64	34	NL	NL
Nitrogen (Nitrate + Nitrite)	4500-NO ₃	1.2	ND	ND	0.38	0.23	2.7	0.72	2.7	10	NL
pH (field)	EPA150.1	8.09	7.55	7.56	7.74	7.66	8.04	7	NL	NL	NL
Potassium	EPA258.1	0.48	0.36	0.34	0.70	0.82	0.84	1.80	1.4	NL	NL
Sodium	EPA200.7	1.4	1.1	1.9	2.40	1.10	1.50	4.70	8.2	NL	NL
Total Dissolved Solids	2540C	140	170	200	180	160	150	150	434	NL	500
Specific Conductance (field)	2510B	270	280	260	300	280	260	240	NL	NL	NL
Sulfate	4500-SO ₄	8	16	37	15	ND	16	28	84	NL	250
Surfactants (MBAS)	5540C	0.12	0.1	ND	ND	ND	ND	ND	NL	NL	NL
Temperature (field)	EPA170.1	10	9.4	9.5	9.6	10.5	8.6	9.7	NL	NL	NL
Turbidity	2130B	5.5	1.3	9.2	1.3	21	3.9	6.1	NL	NL	NL

Notes:

*Test Method number listed is a Standard Method, unless preceded by EPA which indicates an Environmental Protection Agency test method.

**Source: Snoeyink, V. and D. Jenkins. *Water Chemistry*. John Wiley & Sons, Inc., New York, 1980. Typical Analyses of Groundwater, Dayton, OH.

EPA DWS: Environmental Protection Agency National Primary Drinking Water Standards

IN WQS: State of Indiana Water Quality Standards for surface water

IN GWQS: State of Indiana Groundwater Quality Standards (Adopted August 8, 2001)

ND: Parameter not detected above laboratory detection limits for the specific test method.

NL: Parameter not listed in the referenced source.