WATER QUALITY OF INDIAN CREEK-VAN BUREN WATERSHED, IOWA AND MISSOURI

U.S. GEOLOGICAL SURVEY

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U.S. SOIL CONSERVATION SERVICE

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WATER QUALITY OF INDIAN CREEK-VAN BUREN WATERSHED

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ABSTRACT

Generally, the water quality of Indian Creek-Van Buren watershed is suitable as a source of municipal, industrial and agricultural water supply and for fish and wildlife. This suitability is based upon comparisons of the existing water quality of Indian Creek to Federal and State water quality standards and criteria developed for the protection of water sources and the fish and wildlife that inhabit these waters. The water in the basin is a calcium-magnesium-bicarbonate type that is low in dissolved solids. Concentrations of nutrients and metals, except iron, are low. Two pesticides, diazinon and dieldrin were detected in trace amounts within the stream. Variations in water quality were evident from station to station and from season to season. Water quality was more homogeneous during the period of high flow and generally poorest during the period of least flow.

INTRODUCTION

The Soil Conservation Service, U.S. Department of Agriculture, intends to implement a flood-prevention and land treatment project in the Indian Creek-Van Buren watershed, under the authority of the Watershed Protection and Flood Prevention Act (Public Law 566, U.S. 83d Congress, 1954, 2d session, 68 Stat. 666), as amended.

The flood prevention project includes nine flood water retarding structures and a multiple purpose structure which will provide a new source of municipal, industrial, and agricultural water supply and provide habitat for fish and wildlife development.

The Soil Conservation Service requested the U.S. Geological Survey, Water Resources Division to assess the existing water quality of the watershed for its adequacy toward meeting the project goals.

PURPOSE AND SCOPE

The primary purpose of this investigation is to assess the pre-impoundment water quality of the Indian Creek-Van Buren watershed by (1) relating the existing water quality of the watershed to the proposed water resource uses (2) comparing the water quality of the stream reaches described by the three sampling sites investigated and (3) describing water quality changes in the watershed from season to season. A secondary objective is to discuss the probable effects of impoundment on water quality of the watershed.

The investigation spanned 16 months, May 1978 to September 1979. The scope included the collection, analysis, and interpretation of four sets of water samples at three sites within the watershed.

WATERSHED DESCRIPTION

The location of the watershed is shown in figure 1 and the locations of the sampling sites in figure 2. The Indian Creek-Van Buren watershed is in Van Buren County, Iowa, with a small

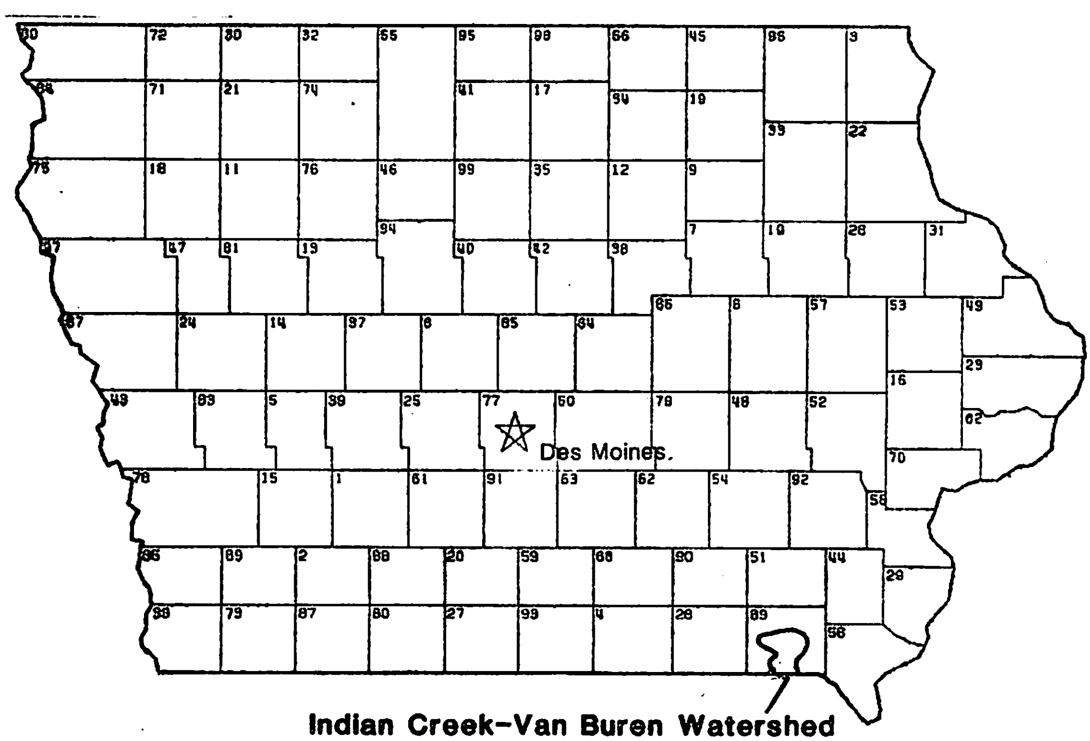
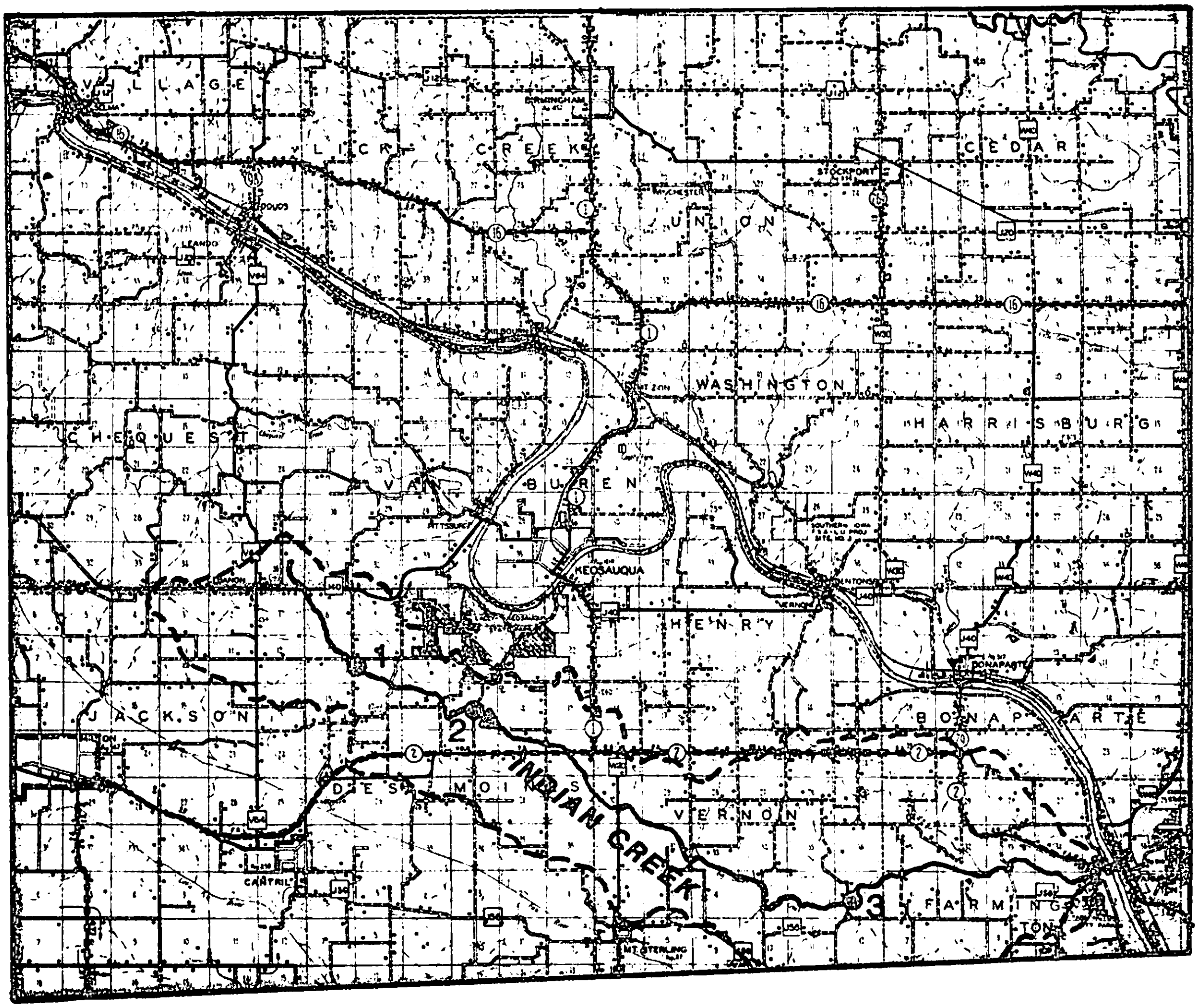


Figure 1.-Location of Indian Creek-Van Buren Watershed

VAN BUREN COUNTY
IOWA



EXPLANATION

●1 Indian Creek Water Quality Station, Location, and Number

-- Basin Boundary

▲ Principle Structure M-4

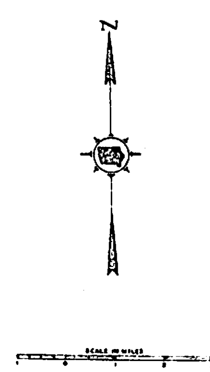


Figure 2.–Location of water-quality stations in Indian Creek watershed

part extending into northeastern Missouri. The watershed has a total drainage area of 72.75 square miles; is approximately 27 miles long; and at its widest segment about 6.2 miles across. When completed, the normal surface pool will be 574 acres. Indian Creek flows in a southeasterly direction and flows into the Des Moines River near Farmington, Iowa. No cities or towns are located within the watershed, however, Keosauqua, the county seat of Van Buren County, is located 3 miles north of the watershed.

Land use in the watershed is 56 percent cropland, 28% pastureland, 12% forestland, and 6% other. Agricultural cropland is more predominate downstream of the planned multiple purpose structure, the areas associated with the future pool and upstream from the pool are better characterized by pasture and woodland pasture. The principal soil association type is Lindley-Weller-Gosport.

Most of Indian Creek is perennial, however the stream becomes intermittent about 3 miles below County Highway V64. The lower reaches of Flat Rock Creek, White Oak Creek and South Fork Indian Creek are also classified as intermittent. The upper reaches of these streams and other tributaries in the project area are ephemeral. Computed average discharge at the mouth of Indian Creek is 54 cubic feet per second (ft^3/s).

The normal annual precipitation for southeast Iowa is 33.6 inches but within the project area ranges from about 32 to more than 35 inches. Twenty three inches of precipitation normally falls during the 6-month period from April through September. Average annual air temperature in southeastern Iowa is 51.6°F (10.9°C)(Coble and Roberts, 1971).

DESCRIPTION OF SAMPLING SITES

The number and location of sampling stations were jointly determined by the U.S. Geological Survey and the Soil Conservation Service on the basis of the following:

1. Location of dams--it was deemed nessessary to have at least one station above and one station below existing or proposed floodwater-retarding structures.
2. Location of roads--all the stations had to be accessible during adverse sampling conditions.
3. Hydrologic factors--the streams had to be flowing during planned times of water-quality sampling.

Station 1 (see Figure 2) (drainage area - 7.8 square miles) is near the upstream limits of the future pool, 4.7 miles upstream from the proposed dam. Station 2 (drainage area = 16.5 square miles) is within the future pool, 0.8 miles upstream from the structure.

Station 3 (drainage area - 48.2 square miles) is 12.8 miles downstream from the structure. Average annual discharges for the stations were calculated from the equation

$$Q = 0.77 A^{0.94}$$

where: Q=Average annual discharge, in cubic feet per second, and
A=Drainage area, in square miles

This equation is based on the average discharge-to-drainage area relationship for selected south-central Iowa streams (Cagle and Heinitz, 1978).

Water quality samples were collected at the sampling stations four times during the investigation. Analytical results are presented in table 2. The July 2-3, August 7, and September 10 samples are representative of seasonal low flow. The May 10 sampling is representative of a spring high-flow period.

DISCUSSION

Water Quality Versus Water Use

To relate the existing water quality of the watershed to the intended water use, the following standards and criteria were used: (1) Iowa Administrative Code (1977) - Department of Environmental Quality, Standards for Class B Waters (for wildlife, aquatic life and secondary body contact) and Class C Waters (for raw water source of potable supply); (2) National Interim Primary and Secondary Drinking Water Regulations (for finished water for public water system) (U.S. Environmental

Protection Agency, 1975, 1977a) and (3) Water Quality Criteria recommended by EPA (criteria for health, welfare and fish and wildlife) (1977b). Concentrations of many, but not all of the constituents identified in the above regulations and criteria were a part of this investigation. These are summarized in table 1. Only the standards set by the Iowa Administrative Code and the National Interim Primary Drinking Water Regulations have direct regulatory use. Water quality criteria and the Secondary Water Regulations were established as guidelines for water-quality assessment and water quality protection and are not directly enforceable.

Water quality data obtained from sampling Indian Creek are reported in table 2. All parameters except the field measurements, specific conductance, pH, dissolved oxygen and fecal coliform and fecal streptococci bacteria were determined at the U.S. Geological Survey Water Quality Laboratory in Denver, Colo.

Fish and Wildlife

Comparison of the existing water quality to the standards for Class B waters shows acceptable water for most parameters investigated. Levels of total iron exceeded the quality criterion level in 9 of 12 samples analyzed. The high values of iron are not likely to present a problem to fish and wildlife maintenance in the proposed reservoir; iron concentrations identified in this assessment are typical of Iowa waters and are from natural sources, primarily from iron adsorbed on or precipitated on suspended sediment. Of 12 samples analyzed, 3 samples exceeded standards for mercury and 1 sample exceeded standards for copper for Class B waters. Lead and chromium levels in Indian Creek were below B standards.

The Environmental Protection Agency has recommended that the concentrations of phosphate not exceed 0.05 mg/L for water flowing into a reservoir to minimize the probability of seasonal algal blooms (U.S. Environmental Protection Agency, 1977a). This criterion was minimally exceeded in five cases. Nitrate concentrations were all below standards for B waters, pH values were all within limits for B waters and all determinations of dissolved oxygen concentration were greater than 5 mg/L although minimum concentrations (5-6 mg/L) did occur at periods of minimal flow.

Concentration of phenols in the watershed were well below standards for Class B waters. PCN and PCB were not detected. Diazinon was the only pesticide detected at all sampling sites. The maximum concentration of this pesticide detected was 0.04 ug/L in a sample collected at station 2. Four of the 12 samples contained detectable amounts of dieldrin. All other pesticides investigated were not detectable in samples from the watershed. Levels of fecal coliform bacteria exceeded the Class B standard for 3 of the 12 samples; all cases occurring during minimal flow.

Potable Water Supply

Comparison of existing water quality to standards for Class C waters did not identify any constituent of those measured which were in excess of acceptable standards. Class C standards are applicable to raw water sources. Comparison of determined water quality to standards for finished water (Primary and Secondary Drinking Water Regulations) can be used as a relative indicator of the extent of treatment that would be necessary for utilizing water from Indian Creek as a public water source.

Generally the water in Indian Creek is moderately hard (average hardness - 170 mg/L) and contains an average dissolved solids concentration of 226 mg/L. Levels of total iron ranging from 900 ug/L to 6400 ug/L indicate that removal of this constituent may be needed. Levels of bacteria are relatively high, ranging from less than 20 to 4700 colonies/100 ml (fecal coliform) and 110 to 250 colonies/100 ml (fecal streptococci). However, Indian Creek is located in an agricultural region where agricultural practices contribute significantly to increased levels of fecal bacteria.

Of the parameters contained in the Interim Primary and Secondary Drinking Water Regulations, only iron and fecal bacteria exceed standards. The remainder of constituents analyzed were below or within maximum contaminant levels (MCL). MCL's specify the maximum permissible level of a contaminant in water which is delivered to the free flowing outlet of the ultimate user of a public water system (U.S. Environmental Protection Agency, 1975).

Reach Water Quality

Comparison of constituent values between the three sampling stations show moderate differences. Homogeneity of the stream was greatest during the high flow period of May 10; however, iron concentrations increased downstream. This homogeneity was not apparent during the low flow periods when constituent concentrations varied considerably with a few spatial trends evident. Sampling on July 2-3 exhibited increasing concentrations downstream for iron and lead; the opposite being true for copper. Major ions, chromium and mercury concentrations on these dates showed little variation. During the September 10 and August 7 sampling, chromium, copper, iron, lead and mercury and all nutrients except nitrate decreased in concentration upstream.

Seasonal Water Quality

The data show that maximum dissolved oxygen concentrations and minimum bacterial populations occured during the higher spring flow of May 10. Nutrient concentrations during this period were not high when compared to the other sampling dates. Sampling on July 2 and 3, when flow was minimal, identified maximum concentrations at all stations for the constituents; copper, iron, lead, mercury, nitrate and other nitrogen constituents. Detectable amounts of diazinon were also present at all sites during this period.

Impoundment Effects

Some of the probable beneficial effects of impounding water reported by Love (1961), Churchill (1957), and Hartung (1958) include: (1) an averaging or "evening out" of sharp variations in dissolved mineral concentrations, hardness, and pH; (2) a reduction in concentrations of turbidity, and perhaps color; (3) a reduction in average temperature; (4) a reduction in coliform bacteria densities; and (5) a sink-effect whereby the suspended sediments (and attached chemicals) would drop out of the water due to a reduction in velocity of the in-flowing turbid water.

Some of the probable detrimental effects reported by Fish (1959), Love (1961), Churchill (1947), and Hull (1961) include: (1) reduced dissolved-oxygen concentrations, especially in the summer and in the deeper parts of the reservoir; (2) much wider variations in dissolved-oxygen concentrations; (3) increased growth of algae and associated undesirable tastes and odors; (4) increased concentrations of carbon dioxide and frequently iron, manganese, and other trace metals, and alkalinity, especially near the bottom; and (5) reductions in temperature.

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TABLE 1. WATER QUALITY STANDARDS AND CRITERIA

CONSTITUENT	NATIONAL DRINKING WATER REGULATIONS		IOWA ADMINISTRATIVE CODE		EPA WATER QUALITY CRITERIA	
	PRIMARY	SECONDARY	CLASS B WATERS	CLASS C WATERS	WATER SUPPLY	AQUATIC LIFE
pH (units)		6.5-8.5	6.5-9.0	6.5-9.0	5-9	6.5-9.0
DISSOLVED O2 (mg/L)				>5		
SULFATE, (mg/L)		250			250	
CHLORIDE, (mg/L)		250		250	250	
FLUORIDE, (mg/L)	2.4			2		
DISSOLVED SOLIDS (mg/L)		500			500	
NITRATE (asN) (mg/L)	10			10	10	
CHROMIUM, (ug/L)	50		50	50	50	100
COPPER, (ug/L)		1000	20	1000	1000	
IRON, (ug/L)		300			300	1000
LEAD, (ug/L)	50		100	50	50	
MERCURY, (ug/L)	2		.05	2	2	.05
PHENOLS, (ug/L)			50	50	1	1
PCB, (ug/L)						.001
DIELDRIN, (ug/L)						.003
FECAL COLIFORM, (colonies/100ml)			<2000			

mg/L = Milligrams per Liter (1: 1,000,000)
ug/L = Micrograms per Liter (1: 1,000,000,000)

Table 2.–Water quality data Indian Creek–Van Buren Watershed

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)
05490536 - BIG INDIAN C NO. 1 NR LEBANON, IA (LAT 40 42 04 LONG 092 02 39)												
MAY , 1978												
10...	1600	2.6	340	7.7	14.0	20	20	10.0	99	190	92	160
JUL , 1979												
02...	1600	<.01	330	7.7	24.0	70	29	5.8	70	K150	200	140
AUG												
07...	0800	.05	415	7.4	30.0	100	410	6.0	79	<20	9300	160
SEP												
10...	1300	1.0	330	7.6	20.0	60	45	--	--	2500	360	150
05490540 - BIG INDIAN C NO. 2 NR KEOSAUQUA, IA (LAT 40 41 14 LONG 091 59 46)												
MAY , 1978												
10...	1340	11	340	7.8	14.0	15	31	9.4	93	300	110	160
JUL , 1979												
02...	1300	<.01	320	7.6	25.0	120	160	5.4	66	4700	700	130
AUG												
07...	1200	.10	355	8.0	28.0	30	4.7	5.8	74	<20	K5300	250
SEP												
10...	1100	.00	300	7.5	18.0	15	10	--	--	K300	460	130
05490550 - BIG INDIAN C NO. 3 NR MT. STERLING, IA (LAT 40 37 41 LONG 091 50 51)												
MAY , 1978												
10...	0930	38	350	7.6	14.0	25	39	9.8	97	250	140	170
JUL , 1979												
03...	1000	<.01	320	7.6	25.0	160	250	5.5	67	3100	2300	110
AUG												
07...	1645	.20	550	8.2	31.0	40	3.5	5.8	79	<20	4700	230
SEP												
10...	1530	.30	495	7.6	22.0	10	6.1	8.2	95	230	200	240

K-Results based on a colony count outside the acceptable range

Table 2

DATE	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE (MG/L AS HCO3) (00440)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, RESIDUE AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	SOLIDS, RESIDUE AT 105 DEG. C, TOTAL (MG/L) (00500)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)
05490536 - BIG INDIAN C NO. 1 NR LEBANON, IA (LAT 40 42 04 LONG 092 02 39)												
MAY , 1978												
10...	44	12	--	--	--	--	--	--	203	33	238	.84
JUL , 1979												
02...	36	11	--	--	--	--	--	--	206	55	250	3.4
AUG												
07...	44	12	--	--	--	--	--	--	228	432	670	.03
SEP												
10...	40	11	7.7	9.0	170	17	5.6	.4	207	159	356	.09
05490540 - BIG INDIAN C NO. 2 NR KEOSAUQUA, IA (LAT 40 41 14 LONG 091 59 46)												
MAY , 1978												
10...	44	12	--	--	--	--	--	--	198	82	319	.80
JUL , 1979												
02...	35	9.8	--	--	--	--	--	--	246	258	488	5.5
AUG												
07...	41	35	--	--	--	--	--	--	214	12	228	.05
SEP												
10...	37	9.7	9.6	7.8	160	13	6.7	.3	188	27	208	.05
05490550 - BIG INDIAN C NO. 3 NR MT. STERLING, IA (LAT 40 37 41 LONG 091 50 51)												
MAY , 1978												
10...	47	13	9.8	3.7	120	61	5.8	.2	212	74	299	.51
JUL , 1979												
03...	31	9.0	8.8	8.8	100	31	6.1	.2	173	472	658	2.6
AUG												
07...	68	15	15	5.9	200	84	8.0	.3	308	23	341	.45
SEP												
10...	67	17	13	5.9	210	88	4.1	.2	329	32	344	.05

Table 2

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, ORTHO. TOTAL (MG/L AS P) (70507)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	PHENOLS (UG/L) (32730)	NAPHTHALENES, POLYCHLOR. TOTAL (UG/L) (39250)	PCB, TOTAL (UG/L) (39516)
05490536 - BIG INDIAN C NO. 1 NR LEBANON, IA (LAT 40 42 04 LONG 092 02 39)												
MAY , 1978												
10...	1.2	2.0	.13	.04	0	8	1400	14	.0	8	.00	.0
JUL , 1979												
02...	1.6	5.0	.14	.07	10	40	2200	19	.3	1	--	.0
AUG												
07...	5.6	5.6	.51	.10	20	10	18000	19	.0	11	--	.0
SEP												
10...	2.9	3.0	.29	.08	20	9	6400	9	.0	3	.00	.0
05490540 - BIG INDIAN C NO. 2 NR KEOSAUQUA, IA (LAT 40 41 14 LONG 091 59 46)												
MAY , 1978												
10...	.79	1.6	.14	.04	10	9	1800	13	.0	20	.00	.0
JUL , 1979												
02...	2.0	7.5	.83	.09	10	17	6500	16	.3	1	--	.0
AUG												
07...	1.2	1.3	.07	.01	10	5	520	9	.0	2	--	.0
SEP												
10...	1.8	1.9	.13	.05	10	3	1200	5	.0	9	--	.0
05490550 - BIG INDIAN C NO. 3 NR MT. STERLING, IA (LAT 40 37 41 LONG 091 50 51)												
MAY , 1978												
10...	.89	1.4	.13	.04	0	8	2400	12	.0	1	.00	.0
JUL , 1979												
03...	2.0	4.6	.39	.14	10	12	12000	44	.3	0	--	.0
AUG												
07...	.81	1.3	.04	.00	10	2	360	9	.0	0	--	.0
SEP												
10...	.95	1.0	.03	.01	20	2	910	2	.0	1	--	.0

Table 2

DATE	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TOTAL (UG/L) (39350)	DDD, TOTAL (UG/L) (39360)	DDE, TOTAL (UG/L) (39365)	DDT, TOTAL (UG/L) (39370)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN, TOTAL (UG/L) (39388)	ENDRIN, TOTAL (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	HEPTA-CHLOR, TOTAL (UG/L) (39410)
05490536 - BIG INDIAN C NO. 1 NR LEBANON, IA (LAT 40 42 04 LONG 092 02 39)											
MAY , 1978											
10...	.00	.0	.00	.00	.00	.01	.01	.00	.00	.00	.00
JUL , 1979											
02...	.00	.0	.00	.00	.00	.02	.01	.00	.00	.00	.00
AUG											
07...	.00	.0	.00	.00	.00	.00	.01	.00	.00	.00	.00
SEP											
10...	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00	.00
05490540 - BIG INDIAN C NO. 2 NR KEOSAUQUA, IA (LAT 40 41 14 LONG 091 59 46)											
MAY , 1978											
10...	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00	.00
JUL , 1979											
02...	.00	.0	.00	.00	.00	.04	.01	.00	.00	.00	.00
AUG											
07...	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00	.00
SEP											
10...	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00	.00
05490550 - BIG INDIAN C NO. 3 NR MT. STERLING, IA (LAT 40 37 41 LONG 091 50 51)											
MAY , 1978											
10...	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00	.00
JUL , 1979											
03...	.00	.0	.00	.00	.00	.02	.00	.00	.00	.00	.00
AUG											
07...	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00	.00
SEP											
10...	.00	.0	.00	.00	.00	.00	.00	.00	.00	.00	.00

Table 2

DATE	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALA-THION, TOTAL (UG/L) (39530)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METHYL PARA-THION, TOTAL (UG/L) (39600)	METHYL TRI-THION, TOTAL (UG/L) (39790)	PARA-THION, TOTAL (UG/L) (39540)	PER-THANE TOTAL (UG/L) (39034)	MIREX, TOTAL (UG/L) (39755)	TOX-APHENE, TOTAL (UG/L) (39400)	TOTAL TRI-THION (UG/L) (39786)
05490536 - BIG INDIAN C NO. 1 NR LEBANON, IA (LAT 40 42 04 LONG 092 02 39)											
MAY , 1978 10...	.00	.00	.00	--	.00	.00	.00	.00	--	0	.00
JUL , 1979 02...	.00	.00	.00	.00	.00	.00	.00	.00	.00	0	.00
AUG 07...	.00	.00	.00	.00	.00	.00	.00	.00	.00	0	.00
SEP 10...	.00	.00	.00	.00	.00	.00	.00	.00	.00	0	.00
05490540 - BIG INDIAN C NO. 2 NR KEOSAUQUA, IA (LAT 40 41 14 LONG 091 59 46)											
MAY , 1978 10...	.00	.00	.00	--	.00	.00	.00	.00	--	0	.00
JUL , 1979 02...	.00	.00	.00	.00	.00	.00	.00	.00	.00	0	.00
AUG 07...	.00	.00	.00	.00	.00	.00	.00	.00	.00	0	.00
SEP 10...	.00	.00	.00	.00	.00	.00	.00	.00	.00	0	.00
05490550 - BIG INDIAN C NO. 3 NR MT. STERLING, IA (LAT 40 37 41 LONG 091 50 51)											
MAY , 1978 10...	.00	.00	.00	--	.00	.00	.00	.00	--	0	.00
JUL , 1979 03...	.01	.00	.00	.00	.00	.00	.00	.00	.00	0	.00
AUG 07...	.01	.00	.00	.00	.00	--	.00	.00	.00	0	.00
SEP 10...	.00	.00	.00	.00	.00	.00	.00	.00	.00	0	.00