

MPS 6850

WATER QUALITY STANDARDS REVIEW FOR
AN UNNAMED TRIBUTARY TO THE BAD AXE RIVER
NEAR WESTBY WISCONSIN

May 24, 1994

Paul La Liberte

The receiving water for the effluents from the Westby WWTP and the Westby Coop Creamery was originally classified for inclusion in NR 104 in 1975. The classification was last reviewed in 1988. Since that time, the site was visited once, on May 10, 1994. On that date, the stream channel immediately below the outfall was observed to contain silt and clay sediments. No signs of sludge were observed and only a trace of Sphaerotilus was present. There was no evidence of substantial violation of WPDES permit conditions.

At the time of the visit, the creamery was discharging at approximately 0.012 cfs and the WWTP at approximately 0.42 cfs. The flow at the outfall was estimated to be 0.64 cfs using the area of the pipe in flow and a single, mid-channel velocity measurement. The increase in flow is due either to inaccuracies in flow measurement or intrusion of clearwater into the one mile of buried concrete outfall pipe. Tom Jablonski reported that, while draining the city swimming pool to the ground surface upgradient from the buried outfall line, it was observed that the additional flow had somehow made its way into the concrete outfall pipe. A stream flow of 0.47 cfs was measured 1500' below the outfall.

If the flow measurements are correct, the rate of effluent infiltration into the soil was 0.1133 cfs per 1000' of stream. The stream was observed to have no flow at its first crossing with Tri-State Road, about one mile downstream. This observation is consistent with the projected infiltration rate. However, sinkholes, which are known to be present in the area, can substantially increase the infiltration rate. At the observed infiltration rate, a discharge of 1.25 cfs or 0.81 mgd would be necessary to maintain a flowing channel to the flowing origin of the Bad Axe River.

In recognition of the lack of change in hydrologic condition since the original stream classification, the classification for this stream should remain the same; limited aquatic life. Three replicate macroinvertebrate samples were collected from the Bad Axe River in NE, NW, S2, T13N, R5W to serve as a reference for future work in the watershed.

westby.rpt

- c. T. Jablonski - LAX
- J. Boettcher
- J. Ball - WR/2
- K. Barrett - WR/2

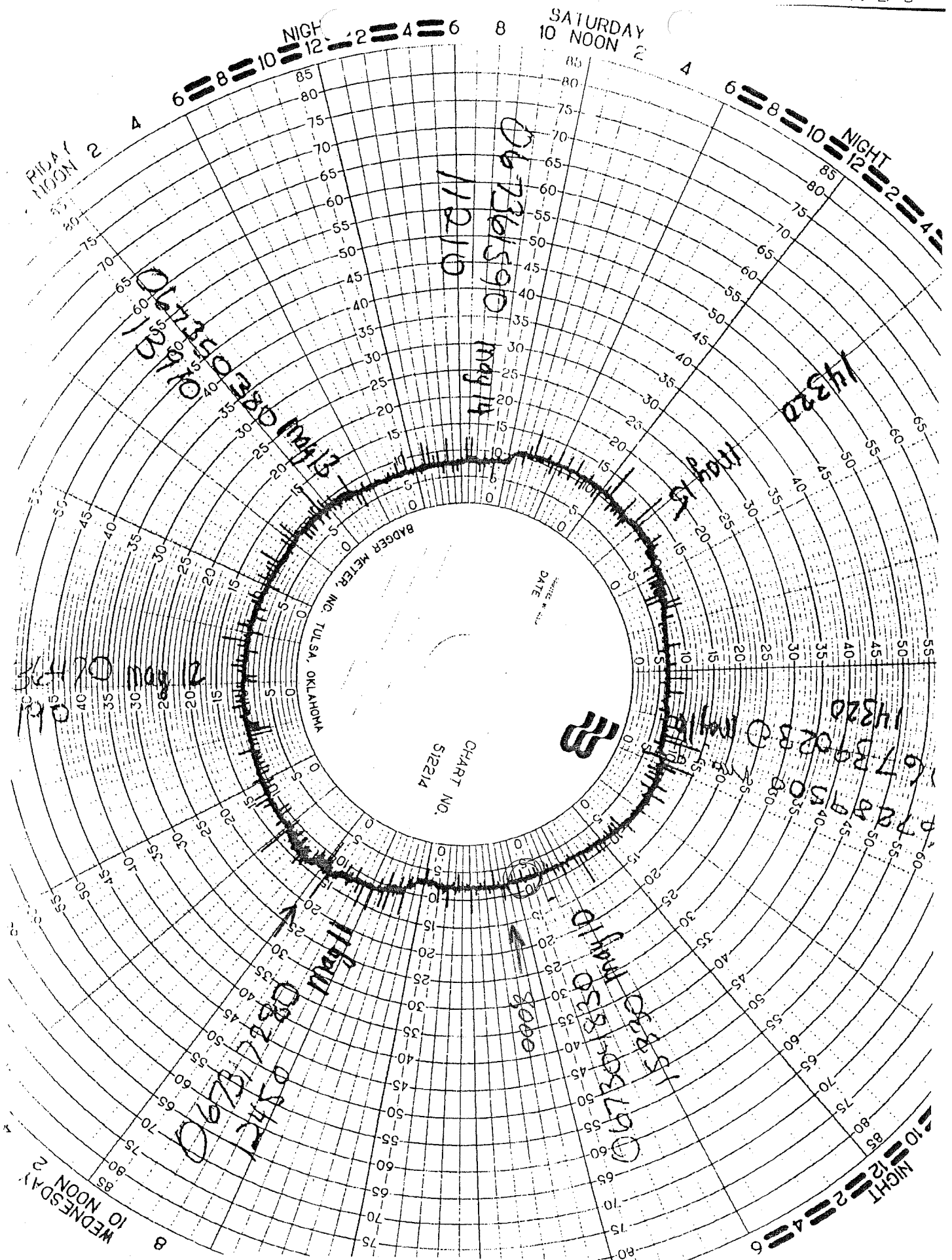
from C. Koeriscki (9/25/00)

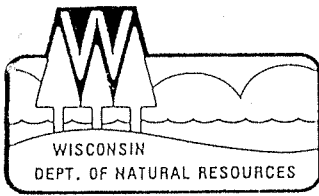
May

	AIR TEMP	TOTAL FLOW	DISSOLVED OXYGEN			PRECIP. AMOUNT	WEATHER	H ₂ O TEMP	OPERATOR & TIME
			POND #1	POND #2	DISCHARGE				
1		38275							
2	56°	38275	—————				Sun	—	Norm 1100
3	64°	39150	8.9	9.8	10.8		Sun	—	Norm 1230
4	48°	23920	—————				Sun	—	Tom 7:00
5	49°	37920	—————				Sun		Norm 3:30
6	54°	16110	8.6	9.8	10.6		Sun	12°	Norm 12:45
7	54°	15870	—————				Sun	—	Norm 1:00
8		14805	—————						
9	60°	14805	—————				Sun		Norm 11:45
10	68°	15330	7.5	10.1	9.3		Sun	14°	Norm 1:30
11	65°	12450	—————			1"	Sun		Norm 11:45
12	74°	19190	—————			2"	Sun		Norm 2:30
13	72°	13910	3.4	8.8	10.0		Sun	16°	Norm 1:30
14	64°	11210	—————				Cloudy	—	Norm 11:00
15		14320	—————						
16	58°	14320	3.5	7.7	10.8		Sun	16°	Norm 1:00
17	65°	12710	—————				Sun	—	Norm 12:30
18			—————						
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31			—————						

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State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

1300 West Clairemont Avenue
P. O. Box 4001
Eau Claire, WI 54702-4001
TELEPHONE 715-839-3700
TELEFAX 715-839-6076

Carroll D. Besadny
Secretary

April 1, 1992

File Ref: 3400

Mr. LaVonne Buckmaster
Westby Electric and Water Utility
104 First Street
Westby, WI 54667

Dear Mr. Buckmaster:

This letter is to follow up our meeting of March 23, 1992 at the City of Westby wastewater treatment facility. Others present were: Don Bay, Westby Co-op Creamery; Tom Jablonski, DNR Engineer, La Crosse; and Bill Phelps, DNR Hydrogeologist, Madison.

The purpose of the meeting was to inspect portions of the waterway that the combined effluent from the Westby Co-op Creamery and the City of Westby is discharged to. Information that was sought during the site visit included the distance that effluent from the facilities travels prior to seeping into the ground and the number of residences on private wells located within one-eighth of a mile of the waterway.

At the time of the site visit, the effluent flow seeped into the ground by the time it reached the NW 1/4 of the NE 1/4 of Section 6, T13N, R04W Town of Viroqua, Vernon County between Tri-State Road and Three Chimney Road.

Permanent spring flow in the waterway appeared to begin in the SE 1/4 of the SW 1/4 of Section 36, T14N R04W, Town of Christiana. The distance from the area that effluent flow ceased to the headwaters of the spring is approximately two and one quarter miles. The distance from the end of the effluent pipe in the SW 1/4 of the SW 1/4 of Section 29, T14N, R04W to the point that the last of the wastewater flow seeps into the ground is approximately one and seven-tenths miles. Total linear distance from the end of the effluent pipe to permanent surface water is close to four miles as measured on the USGS topographic map.

A certain amount of additional monitoring will be required in Westby's next WPDES permit. The monitoring will provide information on effluent quality and water quality in private wells near the waterway that the effluent is discharged to.

PROPOSED COMPLIANCE SCHEDULE

The following compliance schedule will be included in the City of Westby's new WPDES permit and Westby Co-op Creamery's WPDES permit when it comes up for reissuance:

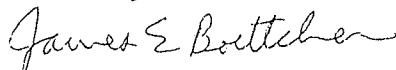
1. A requirement to continue the waterway inspections required in your current permit.
2. Identification of all private wells within one eighth of a mile either side of the waterway from the point that effluent exits the pipe to Three Chimneys Road.
3. Quarterly sampling of private wells identified in 2., above for a one year period. Parameters to be sampled for will be Ammonia Nitrogen, Total Kjeldahl Nitrogen, Nitrite, Nitrate Nitrogen, Chlorides and Total Dissolved Solids.
4. One year of quarterly sampling of effluent in the waterway at the culvert crossing the town road immediately west of the Westby wastewater treatment plant for the same parameters as in 3., above. Annual sampling of effluent at this location may be requested.

The sampling point at the town road culvert west of the wastewater treatment facility contains combined effluent from the City of Westby Wastewater treatment plant and the Westby Co-op Creamery. New permits for both the Creamery and the City will require both entities to submit the above described sample data.

As far as I am concerned, the City and the Co-op can collect one set of samples each date that sampling is required and split the costs between them. Each would have to submit the data individually.

If you have any questions, feel free to contact me at)715)839-3726.

Sincerely,



James E. Boettcher
District Hydrogeologist

c: Jon Kling - WD
Doug Erickson - WD
Tom Jablonski - LAX
Don Bay - Westby Co-op Creamery, 401 South Main, Westby, WI 54667
Bill Phelps - WW/2
→ Paul LaLiberte - WD

m:westby.per



CORRESPONDENCE/MEMORANDUM

STATE OF WISCONSIN

Date: June 8, 1988

File Ref:

To: Westby Facility File

From: Paul LaLiberte *Paul*

Subject: Water Quality Standards Review for Westby POTW

The original stream classification for Westby (10-9-75) was augmented by the collection of chemical, physical, and biological data in February, April, July, and October, 1982. Since that time, the POTW was upgraded. During all four seasons, the effluent seeped to groundwater prior to reaching the continuous flowing portion of the North Fork Bad Axe River. Effluent from the old POTW and the Westby Coop Creamery, which discharges at the same site, were in violation of WPDES permit limits in 1982. Low DO, high BOD₅, high ammonia nitrogen, and sludge beds were documented in the stream channel. Nonpoint source problems were also evident. Postoperative data has not been collected. Available data support the aquatic life use classification made in 1975. The receiving stream was classified as partial body contact recreational use on 10-14-86.

PL:sz

c: D. Schuettpelz - WR/2

T. Stibbe


PLT394


CORRESPONDENCE/MEMORANDUM

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PL:sz

c: D. Schuettpelz - WR/2

T. Stibbe

PLT394

CORRESPONDENCE/MEMORANDUM

Date: November 14, 1986 File Ref: 3200
To: John Paddock
From: Paul LaLiberte *Paul*
Subject: Recreational Use Designation for the Westby POTW Receiving Water

The combined wastewater of the Westby POTW and the Westby Cooperative Creamery create a flowing stream in what would otherwise be a dry drainageway. During the summer, the effluent travels about one mile before seeping into the ground. Water depth is generally less than one foot and stream width less than six feet. Surrounding land use is agriculture. Public access to the drainageway is limited to road crossings. The receiving water has a fish and aquatic life use designation of marginal or no aquatic life. The nearest continuous flowing water body is the north fork Bad Axe River about four miles below the outfall.

Due to its small size, shallow depth, poor accessibility, short length, and lack of significant fishery, little anticipated recreational use is expected. It is recommended that the stream's recreational use be classified as partial body contact.

PL:dd
cc: Terry Moe
Duane Schuettpelz - WR/2

PLT284

WESTBY, VERNON COUNTY

Wastewater Receiving Stream Classification

The city of Westby operates a trickling filter WWTP. Plant effluent is pumped upgrade to a series of ridge and furrow fields. The ridge and furrow fields are hydraulically overloaded to the point of appearing as lagoons. During periods of the year when evaporation and seepage do not completely distribute wastewater, a partial discharge from the wastewater treatment complex occurs.

When discharge from the WWTP does occur, less than three months out of the year, the effluent flows into a dry, roadside, surface water drainage ditch. This ditch is the origin of the Westby tributary to the North Fork of the Bad Axe River. The drainage area of the ditch above the WWTP extends for about one-half mile and into the city of Westby.

Downstream from the WWTP, the noncontinuous stream flows in order through all or portions of sections 32, 29, 31, 6, 1, 36 and into section 35 - a total stream mileage distance of 5.5 miles. Land use along the ~~4.5~~ miles of stream and indeed its entire watershed area is consistently agricultural cropland and pastureland.

Just west of the section 35, 36 north-south section line, the North Fork of the Bad Axe River becomes a continuous flowing stream due to spring flow contributions.

Westby "ridge and furrow lagoons" and treatment plant - overlooking north from hillsouth of WWTP.

Farm field through which Westby tributary and plant effluent first flow - looking north west from same hill as picture at left.

Westby tributary ditch at WWTP
access road and discharge site
looking west.

Westby tributary at section 30, 31
east-west town road crossing 1.3
miles below WWTP - looking north.

Recommendations:

The Westby tributary to the North Fork of the Bad Axe River shall be classified as a noncontinuous, marginal use stream from the Westby WWTP downstream 4.5 stream miles to the section 35/36 section line. From that point downstream the classification shall be continuous flow, fish and aquatic life.

Evaluation Date: September 9, 1975

Personnel:

Lewis A. Seymour - Environmental Engineer - WCD.
Terry A. Moe - Water Pollution Biologist - WCD.
William R. Selbig - Staff Specialist - WCD.



Westby "ridge and furrow lagoons"
and treatment plant - overlooking
north from hill south of WWTP.



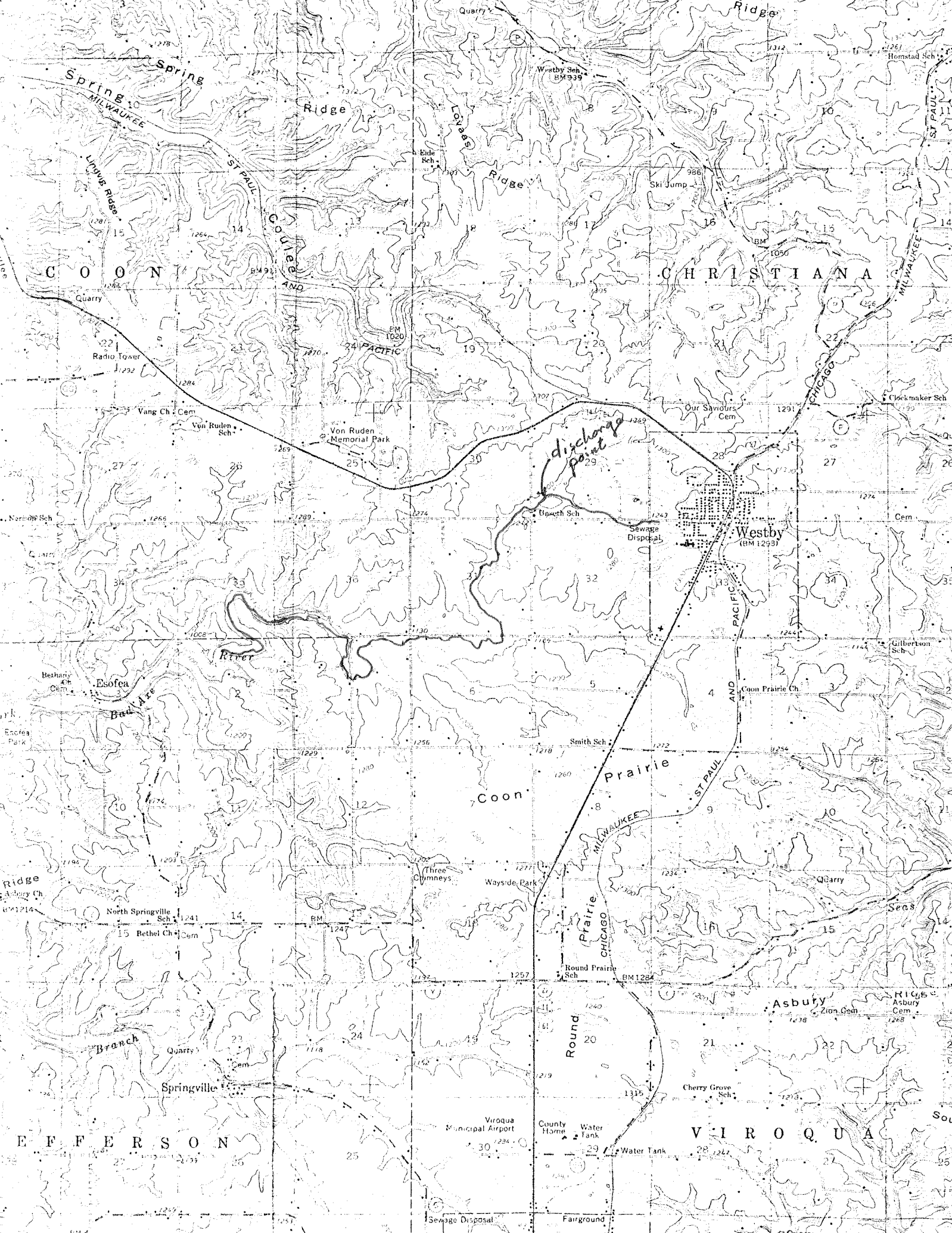
Farm field through which Westby
tributary and plant effluent
first flow - looking north west
from same hill as picture at left.



Westby tributary ditch at WWTP
access road and discharge site
looking west.



Westby tributary at section 30, 31
east-west town road crossing 1.3
miles below WWTP - looking north.



discharge point

Spring Ridge
MILWAUKEE

COON

CHRISTIANA

Coon

Prairie

EFFERSON

VIROQUA

Asbury

County Home

Viroqua Municipal Airport

Springville

Cherry Grove Sch.

Zion Cem.

Water Tank

Wayside Park

Branch

Round Prairie Sch.

Round Prairie Sch.

Wayside Park

North Springville Sch.

Round Prairie Sch.

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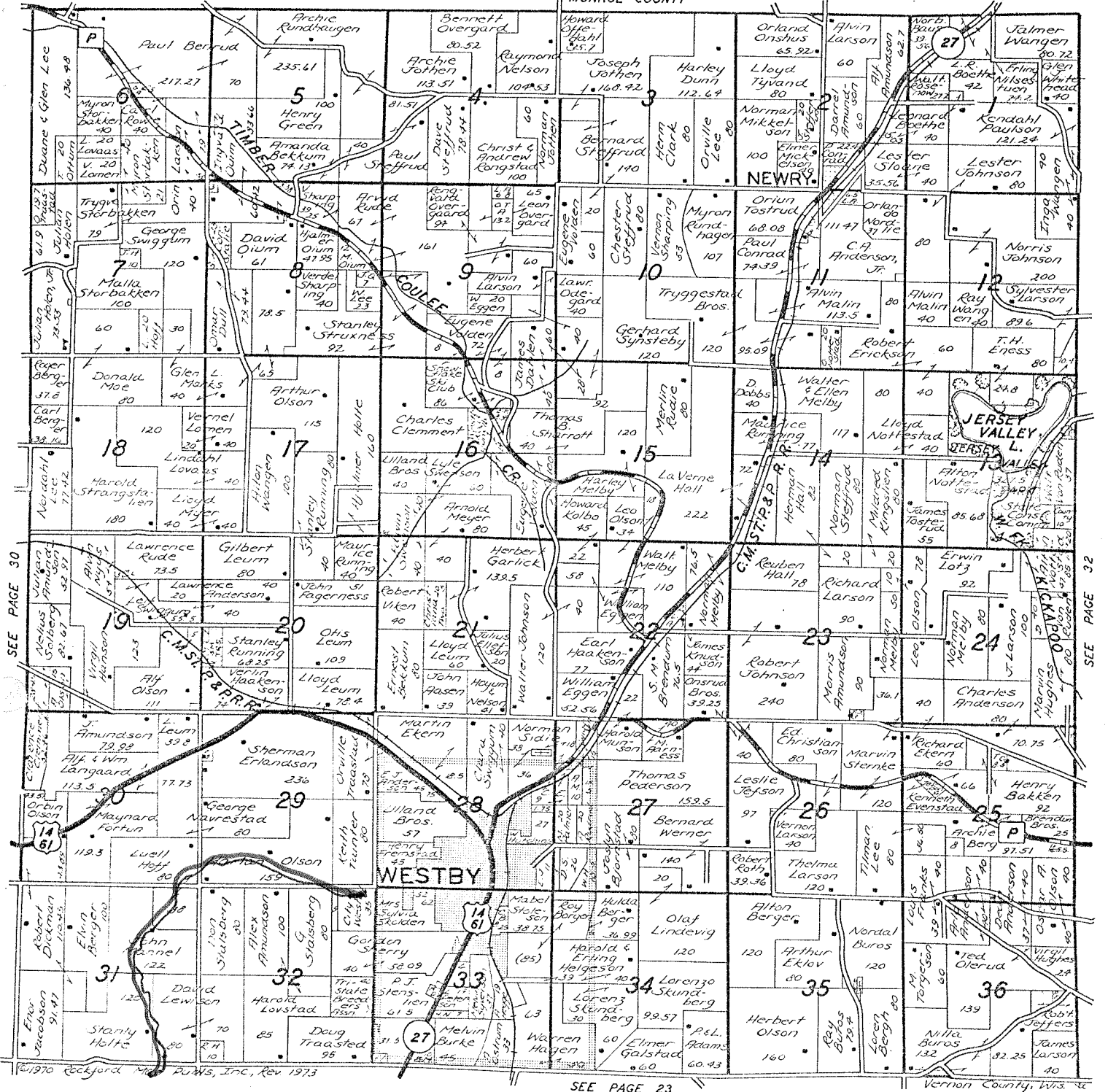
Wayside Park

North Springville Sch.

Round Prairie Sch.

Wayside Park

MONROE COUNTY



SEE PAGE 30

SEE PAGE 32

SEE PAGE 23

Vernon County, Wis.

JOHNSON SOIL SERVICE, INC.

WATER SOLUBLE
FERTILIZERS

PHONE: 637-7675

VIROQUA, WISCONSIN

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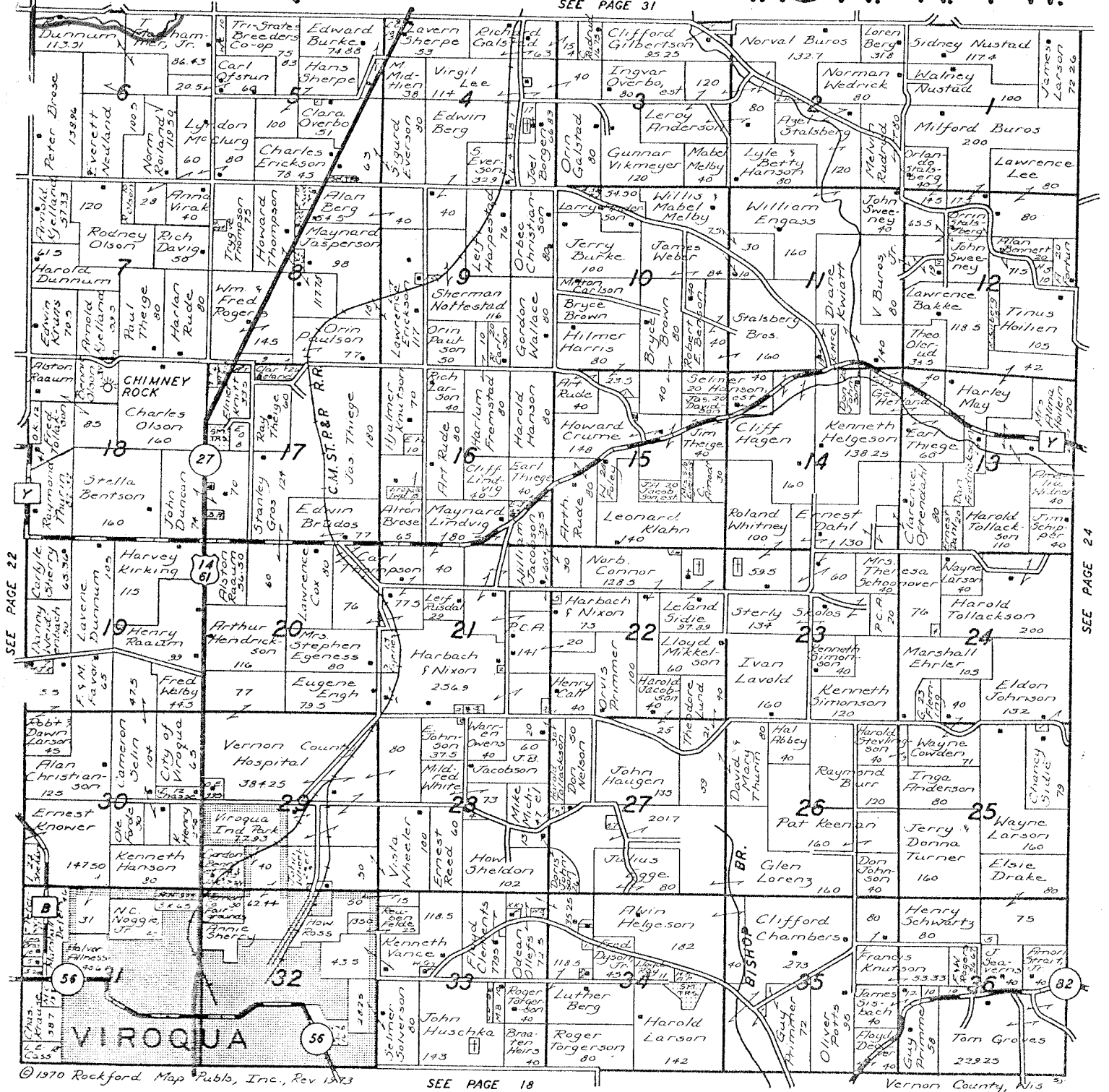
Coon Valley, Wisconsin
Phone: 452-3155

MOEN'S MILL

GRINDING - FEEDS
SEEDS - FERTILIZER

COON VALLEY
WISCONSIN

SEE PAGE 31



SEE PAGE 22

SEE PAGE 24

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Vernon County, Wis

Westby Beauty Salon

EUNICE SHERRY

COMPLETE MEN'S HAIR STYLING

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PHONE: 634-3217

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FUNERAL HOME

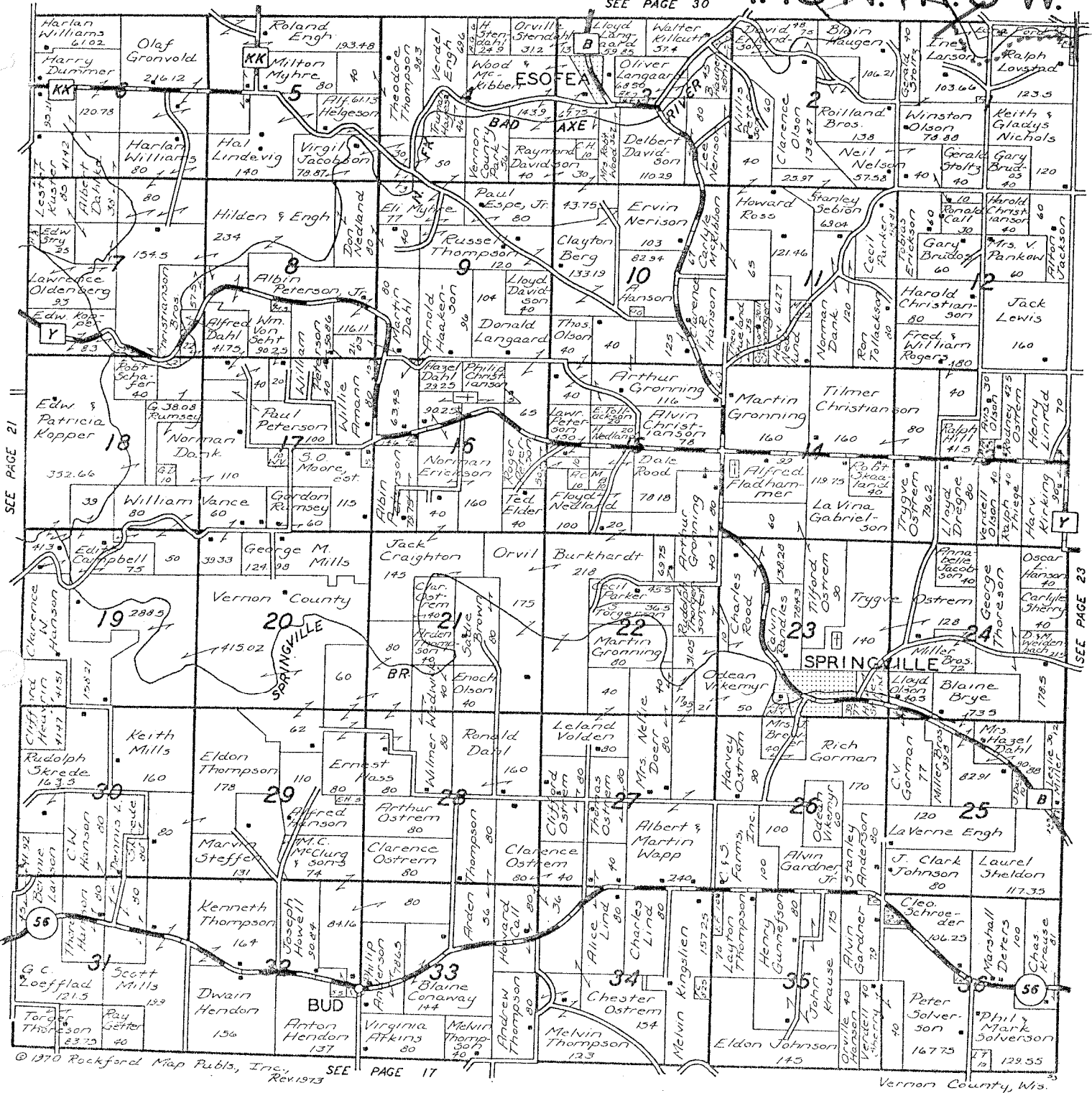
VIROQUA
WISCONSIN

PHONE: 637-7041
or 648-2100

MARTY STENSLIEN

GENERAL TRUCKING
Westby, Wisconsin

PHONE: UNION 76
634-4311
HOME: 634-4363



SEE PAGE 21

SEE PAGE 23

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Vernon County, Wis.

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 Viroqua, Wisconsin

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 VIROQUA, WISCONSIN