Incidental Take Permit Application and Habitat Conservation Plan for the Topeka Shiner

Prepared for

City of Adrian

March 2007

Wenck

Incidental Take Permit Application and Habitat Conservation Plan for the Topeka Shiner

Wenck File #1680-02

Prepared for:

CITY OF ADRIAN
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Adrian, Minnesota 56110

Prepared by:

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March 2007

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APPENDICES

1. Permit Application Form

Department of the Interior
U.S. Fish and Wildlife Service

Federal Fish and Wildlife Permit Application Form

Expires September 30, 2007
OMB No. 1018-0094

Return to: *Click here for addresses*

Type of Activity:

Native Endangered & Threatened Species –
Incidental Take permits Associated With A Habitat Conservation Plan (HCP)

Complete sections A. OR B. and C. on this page, plus the attached pages of this application. Application will not be considered complete without all sections. See additional instructions on attached pages.

A.	**Complete if applying as an individual**		
1.a. Last name	1.b. First name	1.c. Middle name or initial	1.d. Suffix

2.a. Street address (line 1)	2.b. Street address (line 2)	2.c. Street address (line 3)

3.a. City	3.b. Province	3.c. State	3.d. Zip code/Postal code:	3.e. Country

4. Date of birth (mm/dd/yyyy)	5. Social Security No.	6. Occupation	7.a. Home telephone number

7.b Work telephone number	7.c. Fax number	8. E-mail address	9. County

10. List any business, agency, organizational, or institutional affiliation associated with the wildlife or plants to be covered by this permit (see C.1.)	11. Doing business as (dba)

B.	**Complete if applying as a business, corporation, public agency or institution**			
1.a. Name of business, agency, or institution City of Adrian/Public Utilities	1.b. Doing business as (dba)			
2.a. Street address (line 1) 20 Maine Avenue	2.b. Street address (line 2)	2.c. Street address (line 3)		
3.a. City Adrian	3.b. Province	3.c. State MN	3.d. Zip code 56110	3.e. Country USA
4. Tax identification no. 41-6004915	5. Describe the type of business, agency, or institution and provide state of incorporation Municipal Water Supply - Minnesota			
6.a. Principal officer (President, director, etc) Last name Miller	6.b. First name Terry	6.c. Middle name or initial L.	6.d. Suffix Mr.	
7. Principal officer title: Utilities Superintendent	8. Home telephone number (507) 827-2479			
9. Work telephone number (507) 483-2680	10. Fax number (507) 483-2687	11. E-mail address tmiller2@iw.net	12. County Nobles	

C.	**All applicants complete**	
1.	Do you currently have or have you had any Federal Fish and Wildlife permits? (For simplification, all licenses, permits, registrations, and certificates will be referred to as a permit.) Yes If yes, list the number of the most current permit you have held: _____ No X	
2.	Have you obtained all required State, Federal, or foreign government approval(s) to conduct the activity you propose? Yes If yes, provide a copy of the approval(s). Have applied X Not required DNR Groundwater Appr. Permit 75-4223	
3.	Enclose check or money order payable to the U.S. FISH AND WILDLIFE SERVICE in the amount of $100 for a new permit/to renew an existing permit, or $50 to make substantive amendments to an existing permit [50 CFR13.11(d)(2)]. The attached pages provide information on who is exempt from paying the fee.	
4.	Certification: I hereby certify that I have read and am familiar with the regulations contained in Title 50, Part 13, of the Code of Federal Regulations and the other applicable parts in subchapter B of Chapter I of Title 50, and I certify that the information submitted in this application for a permit is complete and accurate to the best of my knowledge and belief. I understand that any false statement herein may subject me to the criminal penalties of 18 U.S.C. 1001.	
5.	Signature ~~(in blue ink)~~ of applicant/person responsible for permit in Section A. or B. (no photocopied/stamped signatures.) Terrance R. Miller	6. Date (mm/dd/yyyy): 3/20/07

Please continue to next page

PERMIT APPLICATION FORM INSTRUCTIONS

The following instructions pertain to the standard permit form 3-200 that must be completed as an application for a U.S. Fish and Wildlife Service (FWS) or CITES permit. The General Permit Procedures in 50 CFR 13 address the permitting process. For simplification, all licenses, permits, registrations, and certificates will be referred to as a permit.

- Complete all appropriate blocks/lines/questions in Sections A. OR B. and C on page 1, plus the attached pages of this application. **Print clearly or type in the information**. Applications will not be considered complete without these pages. An incomplete application may cause delays in processing or may be returned to the applicant.

- Sign the application **in blue ink** and send the original to the address at the top of the application. Faxes or copies of the original signature will not be accepted.

- Please plan ahead. Allow at least 90 days for your application to be processed (50 CFR 13.11). However, due to variations in the size, complexity and impacts of Habitat Conservation Plans, some applications for an Incidental Take permit may take up to 12 months to process. Applications are processed in the order they are received.

- Additional forms and instructions, plus copies of the FWS permit regulations, are available from the FWS permit web site at http://permits.fws.gov/ .

Most of the application form is self-explanatory, but the following provides some assistance for completing the form.

COMPLETE EITHER SECTION A. OR SECTION B. :

Section A. "**Complete if applying as an individual**" - Enter the complete name of the responsible individual who will be the permittee if a permit is issued. Enter personal information that identifies the applicant. All blocks must be completed. **If you are applying on behalf of a client, the personal information must pertain to the client; and a notarized document evidencing power of attorney must be included with the application.**

Section B. "**Complete if applying as a business, corporation, public agency, or institution**" - Enter the complete name and address of the business, corporation, public agency or institution that will be the permittee if a permit is issued. Give a brief description of the type of business the applicant is engaged in, the name and phone number of the person in charge (i.e., principal officer), and if the company is incorporated, the State in which it is incorporated.

ALL APPLICANTS COMPLETE SECTION C. :

Section C.1 **"Do you currently have or have you had any Federal Fish and Wildlife permits?** List the number(s) of your most current FWS or CITES permit or the number of the most recent permit if none are currently valid.

Section C.2 "**Have you obtained all required State, Federal or foreign government approval(s) to conduct the activity you propose?**" (Please be aware that there may be other requirements necessary to conduct this activity such as a hunting license, import permit, or collection permit.) If "yes," list the State, Federal or foreign countries involved and type of document required. Include a copy of these documents with the application. If you have applied for the documents, check the "have applied" box and list the State, Federal or foreign countries involved and type of documents required. If the proposed activity is not regulated, check "not required."

Section C.3 **"Enclose check or money order (if applicable)"** You must enclose an application processing fee unless you are fee exempt. Consult the Application Processing Fee section on the next page for details. If you are fee exempt, write "EXEMPT" in this space . Make your check or money order payable to the "U.S. Fish and Wildlife Service" and attach it to the application form.

Section C.4-6 **"CERTIFICATION" The individual identified in Section A., the principal officer named in Section B., or person with a valid power of attorney (notarized documentation must be included in the application) must sign and date the application in blue ink.** This signature binds the applicant to the statement of certification. This means that you certify that you have read and understand the regulations that apply to the permit. You also certify that everything included in the application is true to the best of your knowledge. Be sure to read the statement and re-read the application and your answers before signing.

APPLICATION FOR A FEDERAL FISH AND WILDLIFE PERMIT

Paperwork Reduction Act and the Privacy Act – Notices

In accordance with the Paperwork Reduction Act of 1995 (44 U.S.C. 3501, *et seq*.) and the Privacy Act of 1974 (5 U.S.C. 552a), please be advised that:

1. The gathering of information on wildlife and plants is authorized by:
   a. Bald and Golden Eagle Protection Act (16 U.S.C. 668), Title 50 Part 22 of the Code of Federal Regulations (CFR);
   b. Endangered Species Act of 1973 (16 U.S.C. 1531-1544), Title 50 CFR Part 17;
   c. Migratory Bird Treaty Act (16 U.S.C. 703-712), Title 50 CFR Part 21;
   d. Marine Mammal Protection Act of 1972 (16 U.S.C. 1361, *et. seq*.), Title 50 CFR Part 18;
   e. Wild Bird Conservation Act (16 U.S.C. 4901-4916), Title 50 CFR Part 15;
   f. Lacey Act (18 U.S.C. 42); Injurious Wildlife, Title 50 CFR Part 16;
   g. Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (TIAS 8249); Title 50 CFR Part 23.
   h. General Provisions, Title 50 CFR Part 10;
   i. General Permit Procedures, Title 50 CFR Part 13; and
   j. Wildlife (Import/export/transport), Title 50 CFR Part 14·

2. Information requested in this form is purely voluntary. However, submission of requested information is required in order to process applications for permits authorized under the above laws. Failure to provide all requested information may be sufficient cause for the U.S. Fish and Wildlife Service to deny the request. Response is not required unless a currently valid Office of Management and Budget (OMB) control number is displayed.

3. Certain applications for permits authorized under the Endangered Species Act of 1973 (16 U.S.C. 1539) and the Marine Mammal Protection Act of 1972 (16 U.S.C. 1374) will be published for public comment in the **Federal Register** (FR) as required by the two laws.

4. Routine use disclosures outside the Department of the Interior (DOI) may be made without the consent of an individual if the disclosure is compatible with the purposes for which the record was collected. (Ref. 68 FR 52611, September 4, 2003) Disclosures outside the DOI may be made under the routine uses listed below without the consent of the individual if the disclosure is compatible with the purposes for which the record was collected.
   a. To subject matter experts, and State, Federal, local, and foreign agencies, for the purpose of obtaining advice relevant to making a decision on an application for a permit or when necessary to accomplish a FWS function related to this system of records.
   b. To the public as a result of publishing Federal Register notices announcing the receipt of permit applications for public comment or notice of the decision on a permit application.
   c. To Federal, State, local, or foreign wildlife and plant agencies for the exchange of information on permits granted or denied to assure compliance with all applicable permitting requirements.
   d. To Captive-bred Wildlife registrants under the Endangered Species Act for the exchange of authorized species, and to share information on the captive breeding of these species.
   e. To Federal, State, and local authorities who need to know who is permitted to receive and rehabilitate sick, orphaned, and injured birds under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act; federally permitted rehabilitators; individuals seeking a permitted rehabilitator with whom to place a sick, injured, or orphaned bird in need of care; and licensed veterinarians who receive, treat, or diagnose sick, orphaned, and injured birds.
   f. To the Department of Justice (DOJ), or a court, adjudicative, or other administrative body or to a party in litigation before a court or adjudicative or administrative body, under certain circumstances;
   g. To the appropriate Federal, State, tribal, local, or foreign governmental agency responsible for investigating, prosecuting, enforcing, or implementing statutes, rules, or licenses, when we become aware of a violation or potential violation of such statutes, rules, or licenses, or when we need to monitor activities associated with a permit or regulated use.
   h. To a congressional office in response to an inquiry to the office by the individual to whom the record pertains.
   i. To the General Accounting Office or Congress when the information is required for the evaluation of the permit programs.
   j. To provide addresses obtained from the Internal Revenue Service to debt collection agencies for purposes of locating a debtor to collect or compromise a Federal claim against the debtor, or to consumer reporting agencies to prepare a commercial credit report for use by the FWS.

5. For individuals, personal information such as home address and telephone number, financial data, and personal identifiers (social security number, birth date, etc.) will be removed prior to any release of the application.

6. The public reporting burden on the applicant for this information collection varies depending on the activity for which a permit is requested. The relevant burden for completing an application for an Incidental Take permit **is 3 hours.** This burden estimate includes time for reviewing instructions, gathering and maintaining data and completing and reviewing the form. You may direct comments regarding the burden estimate or any other aspect of the form to the Service Information Clearance Officer, U.S. Fish and Wildlife Service, Mail Stop 222, Arlington Square, U.S. Department of the Interior, 1849 C Street, NW, Washington D.C. 20240.

Freedom of Information Act (FOIA) – Notice

For organizations, businesses, or individuals operating as a business (i.e., permittees not covered by the Privacy Act), we request that you identify any information that should be considered privileged and confidential business information to allow the Service to meet its responsibilities under FOIA. Confidential business information must be clearly marked "Business Confidential" at the top of the letter or page and each succeeding page and must be accompanied by a non-confidential summary of the confidential information. The non-confidential summary and remaining documents may be made available to the public under FOIA [43 CFR 2.13(c)(4), 43 CFR 2.15(d)(1)(i)].

Application Processing Fee

The fee to process this application for an Incidental Take permit is $100. This fee applies to new permit applications and to renewals of existing valid permits. The fee to process a significant amendment to an existing valid Incidental Take permit is $50. Significant amendments are those that pertain to the purpose and conditions of the permit, and that are not purely administrative. Checks should be made payable to "U.S. Fish and Wildlife Service." The application processing fee is assessed to partialy cover the cost of processing a request for a permit, and does not guarantee the issuance of a permit. The fee will not be refunded under any circumstances. However, we may return your check to you if you withdraw your application before we have significantly processed it (refer to 50 CFR 13.11(d)).

There is no fee for minor amendments to an existing valid permit (such as updating your name and address information). These minor administrative changes are required under 50 CFR 13.23(c).

The fee requirement does not apply to any federal, tribal, state, or local government agency or to any individual or institution acting on behalf of such agency for the proposed activity. State, tribal and local public colleges/universities do not have to pay a fee because they are affiliated with a government body. Proof of fee exempt status must be included in the application.

APPLICATION FOR A PERMIT UNDER THE ENDANGERED SPECIES ACT

NATIVE ENDANGERED & THREATENED SPECIES

INCIDENTAL TAKE PERMITS ASSOCIATED WITH A HABITAT CONSERVATION PLAN (HCP)

INSTRUCTIONS TO APPLICANTS

To expedite a final decision on your application, you are urged to coordinate with us as soon as possible for guidance in assembling a complete application package. If you are renewing or amending a valid permit, your complete application package must be received at least 30 days prior to the expiration of the valid permit. This time period begins when we receive a complete permit application package and does not include any time required for requesting clarification or additional information about your application.

The time required to process an application for an Incidental Take permit will vary depending on the size, complexity, and impacts of the HCP involved. Procedurally, the most variable factor in application processing is the level of analysis required for the proposed HCP under the National Environmental Policy Act (e.g., whether an application requires preparation of an Environmental Impact Statement, Environmental Assessment, or whether a categorical exclusion applies), although other factors such as public controversy can also affect application processing times. The target processing timeline from when we receive a complete application package to our final decision on a permit application is: up to 3 months for low-effect HCPs, 4 to 6 months for HCPs with an Environmental Assessment, and up to 12 months for HCPs with a 90-day comment period and/or an Environmental Impact Statement. Although not mandated by law or regulation, these targets are adopted as U.S. Fish & Wildlife Service and National Marine Fisheries Service (NMFS/NOAA Fisheries) policy and all offices are expected to streamline their Incidental Take permit programs, and to meet these targets to the maximum extent practicable.

The information provided in your permit application will be used to evaluate your application for compliance with the Endangered Species Act, its implementing regulations (which may require a 30 to 90 day public comment period), and U.S. Fish & Wildlife Service policy. Receipt and possession of a permit under the Endangered Species Act should be regarded as a privilege, as we must balance permit issuance with our duties to protect and recover listed species.

Up-to-date annual reports and any other required reports under your valid permit(s) must be on file before a permit will be considered for renewal or amendment.

If your activities may affect species under the authority of NMFS/NOAA Fisheries, then you may need to obtain a separate permit from that agency. In addition, we share jurisdiction with

NMFS/NOAA Fisheries for sea turtles (e.g., we evaluate applications for permits to conduct activities impacting sea turtles on land, and NMFS/NOAA Fisheries evaluates applications for permits to conduct activities impacting sea turtles in the marine environment). To apply for a permit to conduct activities with sea turtles in the marine environment or other species under NMFS/NOAA Fisheries jurisdiction, please contact them via their permit web page at http://www.nmfs.noaa.gov/pr/permits/

****

We cannot issue an Incidental Take permit under Section 10(a)(2)(A)(i) of the Endangered Species Act unless you submit a conservation plan that specifies the impacts that are likely to result from the incidental take associated with your activity.

Our general permit regulations at 50 CFR 13.12(a)(9) allow us to collect such other information as we determine that is relevant to the processing of a permit application. Before you submit an application for an Incidental Take permit, we may require that you conduct biological surveys to determine which species and/or habitat would be impacted by the activities sought to be covered under the permit. Biological surveys provide information necessary to develop an adequate HCP, and to assess the biological impacts of the proposed activities. In addition, the information provided in a biological survey can reduce the applicant's risk of take under Section 9 of the Endangered Species Act by ensuring that affected species and/or habitat are identified and appropriately covered under the permit.

You are required to obtain a Scientific Purposes, Enhancement of Propagation or Survival permit (commonly referred to as a Recovery permit) from us before engaging in any biological survey activities that would take listed species. Contact our Ecological Services Field Office closest to the location of your activity to obtain technical assistance in determining the need for both a biological survey and a Recovery permit for your survey activity. The contact information for our Ecological Services Field Offices can be found on the U.S. Fish & Wildlife Service's office directory web page at http://offices.fws.gov/directory/listofficemap.html

If a biological survey is required, you will need to send us your complete Recovery permit application package <u>at least 3 months</u> prior to commencement of survey activities to facilitate processing of your Recovery permit application. The Recovery permit application is designated as U.S. Fish & Wildlife Service form # 3-200-55.

We maintain a list of Recovery permittees (such as biological consultants) who have authorized the release of their contact information to third parties for conducting biological surveys on a contract basis. This list is provided to the public at the discretion of each of U.S. Fish and Wildlife Service Regional Office as time and workload allow. Please be aware that this list does not represent an endorsement by us of any particular permittee.

If you are not applying as an individual, but as a business, corporation, institution, or non-Federal public agency (block B. on page 1of the application), the person to whom the permit will

be issued (e.g., the landowner, president, director, executive director, or executive officer) is legally responsible for implementing the permit. Although other people under the direct control of the permittee (e.g., employees, contractors, consultants) receive third party take authorization in their capacity as designees of the permittee, the individual named as the permittee ultimately is legally responsible for the permit and any activities carried out under the permit except as otherwise limited in the case of permits issued to State or local government entities under 50 CFR 13.25(d).

If you wish to coordinate the processing of this permit application through an authorized agent, and to have that agent represent you as the primary contact with us, check the box below. Sign (in blue ink) and date the authorization statement, and provide contact information for your authorized agent.

☐ I hereby authorize the following person to act as an authorized agent on my behalf in the processing of this permit application and to furnish, upon request, supplemental information in support of this permit application.

_____ _____
signature (in blue ink) date

_____
please print name legibly

Your Authorized Agent's Contact Information
Name: _____
Address: _____
_____
City: _____ State: _____ Zip Code: _____
Telephone: _____
Fax: _____
E-Mail: _____

****

Please check one:

□ Renewal of a valid Incidental Take permit associated with a HCP using my current application package on file. The renewal fee is $100.

□ Amendment (with *major changes*) of a valid Incidental Take permit associated with a HCP. If the information in your current application package has changed in a manner that triggers a major amendment or a change not otherwise specified in the Incidental Take permit or HCP or Implementing Agreement, then you must apply for an amendment

to your valid permit. Such major changes may include changes in location, activity, amount or type of take, or species to be covered by the permit. Please contact our Ecological Services Field Office located closest to your proposed activity for technical assistance in making this determination. The contact information for our Ecological Services Field Offices can be found on the U.S. Fish & Wildlife Service's office directory web page at http://offices.fws.gov/directory/listofficemap.html. The amendment fee is $50.

☒ New application for an Incidental Take permit associated with a HCP. The application fee is $100.

If this application includes transfer or succession of a valid Incidental Take permit, please check the box below:

□ Transfer or succession of a valid Incidental Take permit associated with a HCP using the current application package on file. No application fee is required.

You have 4 options for providing the specific information for items A. - E. below. Choose only one option.

Option I. Renewal of a Valid Incidental Take Permit.
Sign (in blue ink) the following statement if you are applying to renew a valid Incidental Take permit. If you are proposing major changes to your Incidental Take permit, you must use Option II.

The individual signing box C. on page 1of the application must also sign the following statement. This certification language is required under 50 CFR 13.22(a).

I certify that the statements and information submitted in support of my original application for a U.S. Fish & Wildlife Service Incidental Take permit # _____ are still current and correct and hereby request renewal of that permit.

_____ _____
signature (in blue ink) date

_____
please print name legibly

* Please note: If you have signed above statement, then your renewal request is complete. Please submit this renewal request to the return address on page 1 of the application. Requests for renewals must be received no later than 30 days prior to permit expiration to

ensure that your current permit remains in effect while we process your renewal request.

Option II. Amended Incidental Take Permit (with *major changes*)
Sign (in blue ink) the following statement if you are proposing to amend a valid Incidental Take permit by making major changes. Such major changes may include changes in location, activity, amount or type of take, or species to be covered by the permit.

The individual signing box C. on page 1 of the application must also sign the following statement. This certification language is required under 50 CFR 13.22(a).

> I certify that the statements and information submitted in support of my original application for a U.S. Fish and Wildlife Service Incidental Take permit # _____ are still current and correct, except for the changes listed below, and hereby request amendment of that permit.
>
> _____ _____
> signature (in blue ink) date
>
> _____
> please print name legibly

Provide a brief description of the changes to your valid permit (answer the appropriate questions for these changes under Option III. below).

Option III. New Incidental Take Permit & Supplementary Information for Amendment of a Valid Permit (with *major changes*).
General permit regulations for the U.S. Fish & Wildlife Service can be found at 50 CFR 13. Regulations for an Incidental Take permit under the Endangered Species Act can be found at 50 CFR 17.22(b)(1) for endangered wildlife species and 50 CFR 17.32(b)(1) for threatened wildlife species.

Each landowner who wishes to be covered under a new or amended the Incidental Take permit associated with an HCP must sign (in blue ink) and date the Incidental Take Permit Application Certification Notice at the end of this application, unless the landowner will be covered under this U.S. Fish & Wildlife Service Incidental Take permit via another vehicle, such as a certificate of inclusion (50 CFR 13.25(d)). Any change in the language of the Certification Notice must be reviewed by the Department of Interior, Office of the Solicitor and approved by the U.S. Fish & Wildlife Service. The same person who signs in box C. on page 1 of the application should sign the certification.

If the information in items A. - E. below is already provided in your final HCP (or Implementing Agreement, if applicable), then you do not have to provide it here. Instead, check the box below and use the spaces provided in items A. - E. to indicate the page numbers in your HCP or Implementing Agreement that provide the requested information. Please specify whether the page numbers are from the HCP or the Implementing Agreement.

☒ I am not providing the information for items A. - E. as part of my Incidental Take permit application because it is already provided in my final HCP or Implementing Agreement (copy attached or already submitted).

If the requested information in items A. - E. is not provided in your final HCP or final Implementing Agreement, or you are using Option II. to amend your valid Incidental Take permit, then attach separate pages for the missing information. In order to assist us in processing your request, please provide the item number (A. 1.a., etc.) of the required information before each of your responses. Thank you.

Please ensure that your final HCP and Implementing Agreement (if applicable) are attached if it has not been previously submitted.

If you have previously submitted a final draft HCP or Implementing Agreement, please indicate the document's date.

Date of final draft HCP _____

Date of final draft Implementing Agreement _____

Applications for an Incidental Take permit associated with a HCP must provide the following specific information (relevant to the activity) under items A. - E. below in addition to the general information on page 1 of the application.

A. Identify species and activity:

1. For a new Incidental Take permit:

   a. Provide the common and scientific names of the species being requested for coverage in the permit and their status (endangered (E), threatened (T), proposed endangered (PE), proposed threatened (PT), candidate for listing (C), or species likely to become a candidate (LC)).

   b. Provide the number, age, and sex of such species to the extent known

   c. Quantify the anticipated effects to their habitat.

d. Describe the land use or water management activity sought to be authorized for each species.

2. For an amended Incidental Take permit:

a. Identify the species to be added to your valid permit (provide both the scientific, to the most specific taxonomic level, and common names), as well as the species status (see 1.a.. above).

b. Provide the number, age and sex of such species to the extent known.

c. If any activities requested in this application differ from those authorized in your valid permit, then for each species state the currently authorized activity, the requested new activity, and how the new activity will impact each species.

d. Identify each activity associated with your project that would result in the incidental take of each species.

e. Quantify any anticipated effects to the habitat of each added species.

f. Identify species to be deleted from your valid permit and the reason(s) for the deletion.

Page(s) & source document : _____

B. Identify location of the proposed activity:

1. Provide the name of the State, county, and specific location of the proposed activity site(s). Include a formal legal description, section/township/range information, county tax parcel number, local address, or any other identifying property designation that will precisely place the location of the proposed activity site(s). Attach a location map and plat of the project site clearly depicting the project boundaries and the footprint and location of all portions of the property that would be affected by your proposed activities.

2. Provide the total number of acres covered by the HCP _____

Is this the total acreage of the parcel? (circle one) yes no

3. Provide the approximate number of acres to be impacted _____

4. Provide the approximate number of acres to be protected _____

5. Provide a complete description, including timeframes, for implementation of proposed voluntary management activities to enhance, restore, or maintain habitat benefiting federally listed, proposed or candidate species, or other species likely to become candidates. Include schedules for implementing these activities.

Page(s) & source document:_____

C. Describe the proposed activities in the conservation plan:

You must submit a Habitat Conservation Plan. We strongly encourage you to ensure that your HCP is consistent with the Habitat Conservation Planning Handbook, subsequent Handbook addendums, and current policies to minimize delays in evaluating your application. The Handbook and other HCP information is available on the U.S. Fish & Wildlife Service's Endangered Species web page at http://endangered.fws.gov/hcp/index.html.

Provide a complete description of activity(ies) to be authorized or reference the applicable HCP or Implementing Agreement page numbers identifying the subject information.

The HCP must specify:

1. The impact that will likely result from the incidental taking. A discussion of the impact that will likely result from the incidental take should include quantification of any anticipated effects to the habitat of the species sought to be covered by the permit.

2. The steps that will be taken to minimize and mitigate such impacts, the funding that will be available to implement such steps, and the procedures to deal with unforeseen circumstances.

3. The steps that will be taken to monitor and report on such impacts, including a copy of the monitoring plan. We are authorized to require reports of activities conducted under a permit per the U.S. Fish & Wildlife Service's general permit regulations at 50 CFR 13.45.

4. Alternative actions to such incidental taking that have been considered and the reasons why these alternatives are not proposed for use.

5. The biological goals(s) and objectives for the HCP.

6. The duration requested for the proposed permit.

Page(s) & source document : _____

D. Implementing Agreement

An Implementing Agreement

is ***is not*** (FWS Regional Office to circle one)

required as part of the permit application for a Habitat Conservation Plan.

This Implementing Agreement must be signed at finalization of the HCP. Are you willing to commit to an Implementing Agreement at finalization of the HCP?

□ Yes, I am willing to commit to an Implementing Agreement. Please submit any unsigned, draft Implementing Agreement that you have prepared with our Field Office.

□ No, I am not willing to commit to an Implementing Agreement.

E. Identify other permits required:

1. List any additional valid permits currently held or other permits needed for the proposed activities (i.e. Corps of Engineers permits, Environmental Protection Agency NPDES permits, State, county or city permits, etc).
   Minnesota DNR Groundwater Appropriation Permit 75-4223 (Appendix 1)
2. Attach a copy of permit or provide agency name, permit number (if any), effective date, and duration.

3. Provide information on any pending applications for the above permits and the reasons why the permits have not been issued.

Page(s) & source document:_____

Option IV. Permit Transfer or Succession of a Permit

Complete the following if you are applying for transfer of a valid Incidental Take permit to you or obtaining rights of succession of a valid Incidental Take permit. In addition, you and the current permit holder may also need to sign an assumption agreement. Please contact our

Ecological Services Field Office nearest your activity to determine whether you and the current permit holder need to execute an assumption agreement. The contact information for our Ecological Services Field Offices can be found on the U.S. Fish & Wildlife Service web page at http://offices.fws.gov/directory/listofficemap.html.

Please indicate the name of the HCP to be transferred or succeeded and indicate the document's date.

Name of HCP _____

Date of HCP _____

An Assumption Agreement

is ***is not*** (FWS Ecological Services Field Office to circle one)

required as part of the transfer or succession permit application for the HCP.

****

Incidental Take Permit Application

Certification Notice

The same person who signs in box C. on page 1 of the application should sign (in blue ink) the following certification.

By submitting this application and receiving an Incidental Take permit pursuant to Section 10(a)(1)(B) of the Endangered Species Act, I

Terrance (Terry) Miller (print name(s))

attest that I/we own the lands indicated in this application, or have sufficient authority or rights over these lands to implement the measures of the Habitat Conservation Plan (and Implementing Agreement if applicable) covered by the Incidental Take permit. Further, upon receipt of the Incidental Take permit, I/we agree to conduct the activities as specified in the Habitat Conservation Plan (and Implementing Agreement if applicable) according to the terms and conditions of the Incidental Take permit and its supporting documents.

Terrance L. Miller — signature (in blue ink)

3/20/07 — date

_____
please print name legibly

_____ — signature (in blue ink)

_____ — date

_____
please print name legibly

****

The public reporting burden for completing this application is estimated to be 3 hours, including time for reviewing instructions, gathering and maintaining application data, and completing and reviewing the forms. Comments regarding the burden estimate or any other aspect of the reporting requirement(s) should be directed to the U.S. Fish & Wildlife Service Information Collection Clearance Officer, MS 222 ARLSQ, U.S. Fish and Wildlife Service, Washington, DC 20240.

An agency may not conduct and a person is not required to respond to a collection of information unless a currently valid OMB control number is displayed.

2. Habitat Plan

Habitat Conservation Plan

for the

Topeka shiner (Notropis Topeka)

at the

Adrian Wellfield
City of Adrian, Nobles County, Minnesota

February 2007

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Executive Summary

The City of Adrian has prepared this Habitat Conservation Plan (HCP) to accompany their Incidental Take Permit Application to address potential impacts to the federally endangered species the Topeka shiner. The City of Adrian operates a municipal wellfield located on the north end of the city. The City is proposing to increase the annual consumption of groundwater at the wellfield from 50 million to 60.5 million gallons per year. An additional production well was installed at the wellfield to help produce the additional water. The additional water will be sold to the Lincoln Pipestone Rural Water Authority who will distribute the water to its customers in the Adrian area though existing conveyance system. The increase in the annual consumption of groundwater at the Adrian wellfield has the potential to impact water levels and stream flow in a tributary to Kanaranzi Creek that borders the wellfield to the south. The federally endangered Topeka shiner (*Notropis topeka*) is know to inhabit the tributary stream and proposed operations at the Adrian wellfield have the potential to cause take of the Topeka shiners in the stream.

A review of the available operational data for the Adrian wellfield, in conjunction with topographic and hydrological data for the project site, revealed that the increase in the annual consumption of water has the potential to remove some base flow from the tributary stream. However, due to the maximum pumping rate for the wellfield remaining unchanged, the overall impacts to stream flow and water levels in the tributary are expected to be minor.

Based on the relatively small anticipated impacts to the tributary stream, an impact area for the project site was determined to be a ¼ mile buffer around the wellfield, which includes approximately 3000 linear feet of channel. Take for the project was determined to be the loss of access to available habitat by all Topeka shiners within the impact area channel. The standing population of Topeka shiners in the stream is estimated to be relatively small, with less than 20 individuals collected within the reach during previous biological surveys.

2.1.6 Existing Land Use

The land use at the Adrian wellfield site can be classified as Municipal Utility. The land use has been unchanged at the site since the operation of the wellfield began in approximately 1960. The land use at the project site will not change as a result of the proposed project. The wellfield site is bordered by US I-90 and agricultural fields to the north, agricultural fields to the east and south, some commercial development to the south and west and a city owned grass field to the west.

2.2 SPECIES OF CONCERN IN THE PLAN AREA

The species to be covered under this HCP is the federally endangered Topeka shiner (*Notropis Topeka*). The Topeka shiner is a small, silvery minnow that grows to approximately 3 inches in length. In Minnesota, food sources of the Topeka shiner include several kinds of zooplankton, a variety of immature aquatic insects, larval fish, algal and vascular plant matter, including seed capsules (Hatch and Besaw 1998). The typical life span of a Topeka shiner is approximately 3 years. Topeka shiners spawn over the nests of green and/or orange spotted sunfishes, with the males defending a small territory around the periphery of the sunfish nests (Pflieger 1997). Topeka shiners are known to be a pool species that prefers pools with depths less than two meters and current velocities less than 0.5 m/s (Tabor 2004). In the prairie streams of southwest Minnesota, Topeka shiners have been found to occupy main-channel, as well as side-channel or off-channel pool habitats. The extent of this preference for pool and off-channel pool habitats has caused recent sampling efforts for the presence of Topeka shiners in southwest Minnesota streams to focus only on these habitat types (Ceas and Anderson, 2004; Ceas and Monstad, 2005). Field investigations have further shown that sampling outside of pool habitats in stream runs or riffles rarely results in the capture of Topeka shiners (Ceas, personal communication).

2.2.1 Wildlife Species of Concern

The area covered by this HCP is located entirely within Nobles County. There are no other federally listed wildlife species of concern located in Nobles County, Minnesota.

The main habitat component required by Topeka shiners is low flow, shallow main channel and off channel pools. Due to the low occurrence of pool habitat in the impacted reach, the proposed mitigation strategy for the project is the creation of new pool habitats in stream reaches where Topeka shiners are known to occur. The City of Adrian proposes to construct new pool habitat, following the general design of pools constructed by the FWS in Iowa streams, at one of two mitigation sites and monitor the constructed habitat for physical and biological success. The creation of new pool habitat, along with the proposed monitoring program will accomplish the biological goals of the HCP including 1) Ensuring that the current range of Topeka shiners in Minnesota is not diminished and 2) Facilitating the ability of the existing Topeka shiners to increase their population stability and/or abundance within its current range.

1.0 Introduction

1.1 OVERVIEW/BACKGROUND

The City of Adrian (Applicant) has prepared this Habitat Conservation Plan (HCP) to fulfill the requirements of section 10(a)(1)(B) of the Endangered Species Act. The Applicant is proposing to increase the annual consumption of water at a currently operating wellfield by the installation of a new production pumping well. An unnamed tributary of Kanaranzi Creek flows adjacent to the wellfield. The federally endangered Topeka shiner (*Notropis topeka*) is known to inhabit this creek although the total population size is not known. The consumption of ground water from the shallow aquifer through the operation of the production wells has the potential to impact the flow of the tributary to Kanaranzi Creek that could result in the loss of in-stream habitat and the take of Topeka shiners.

The Minnesota Department of Natural Resources (DNR) has been consulted for an addendum to the groundwater appropriation permit under which the wellfield is currently operating. The DNR instructed the Applicant that due to the presence of the federally endangered Topeka shiner in the creek adjacent to the wellfield, consultations with the U.S. Fish and Wildlife Service (FWS) should be initiated. The FWS has instructed the Applicant that an incidental take permit will be necessary prior to consuming/pumping the additional water due to the potential for take of the Topeka shiner.

1.2 PERMIT DURATION

The Applicant is requesting the permit duration be for 30 years from 2007 until 2037. During that time the Applicant will perform the mitigation and monitoring described in the proceeding sections of this HCP. If during the above stated 30 year permit period any changes to the Adrian Wellfield are made, including on-site construction, changes in daily operations or changes in water consumption, the Applicant will complete the necessary amendment procedures (minor or major revisions) as listed under the Incidental Take Permit form.

1.3 PLAN AREA

The Adrian Wellfield is located in Township 102N, Range 42W, Section 18 in the City of Adrian, Nobles County, Minnesota. A site location map is provided on a USGS Topo Quad map as Figure 1. The impact area covered under the HCP is described in Section 4.1.2 “Area to be Covered”

1.4 SPECIES TO BE COVERED BY PERMIT

The target species to be covered by this Incidental Take Permit and HCP is the Topeka shiner (*Notropis topeka*).

The federally endangered fish the Topeka shiner is found within portions of the Big Sioux and Rock River Watersheds in Lincoln, Murray, Nobles, Pipestone and Rock Counties in Minnesota. The Topeka shiner is listed as a species of special concern in the State of Minnesota. In addition to Minnesota, the current range of the Topeka shiner also includes portions of South Dakota, Nebraska, Iowa, Kansas and Missouri.

2.0 Environmental Setting/Biological Resources

2.1 ENVIRONMENTAL SETTING

The project site is the City of Adrian Wellfield located on the north end of the Adrian City Limits (Figure 1). The City of Adrian is a small Minnesota farming community with a population of approximately 1,200. The surrounding landscape is dominated by actively cultivated agricultural fields of row crops and pastures. Live stock, including hogs and cattle, are also common in the area. The specific environmental setting of the project site is described in the proceeding sections.

2.1.1 Climate

The Adrian Wellfield site is located in Nobles County, which lies in the southwest corner of Minnesota. Climate in Nobles County includes average monthly temperatures ranging from 12^{o}F in January to 72^{o}F in July. Daily temperatures vary widely across the year in Nobles County, with a record high temperature of 106^{o}F and a record low temperature -37^{o}F. Yearly precipitation averages 27.7 inches, with the majority of this precipitation falling as rain during the months of May to August.

2.1.2 Topography/Geology

The Adrian Wellfield site gently slopes from east to west with an approximately elevation change from 1530 feet above sea level to 1520 feet above sea level, based on interpretation of U.S. Geological Survey Ortho Quads for the project area. According to the Minnesota Hydrological Atlas for the Rock River Watershed the approximate groundwater elevation is 1500 ft. All glacial and sedimentary rocks are saturated below the water table, which lies within approximately 50 feet of the land surface everywhere in the watershed.

2.1.3 Hydrology/Streams, Rivers, Drainages

The Adrian wellfield field is bordered to the south by an unnamed tributary to Kanaranzi Creek. Kanaranzi Creek lies approximately 0.5 miles to the north and west of the Adrian wellfield project site. The Kanaranzi Creek minor watershed drains approximately 22.1 sq-mi with a total of 101.5 sq-mi of upstream watersheds draining into the Kanaranzi Creek watershed. Upon leaving the project area Kanaranzi Creek flows to the south and west for approximately 20 miles, where it leaves the State of Minnesota and enters the State of Iowa. At the point where Kanaranzi Creek leaves Minnesota, the watershed drains a total of 193.7 sp-mi. Kanaranzi Creek continues to flow south and east in Iowa for an additional five miles until out letting into the Rock River.

2.1.4 Vegetation

The vegetation at the wellfield site can be generally described as mowed grass field with some shrubs scattered along the west, north and east boarders of the parcel. The vegetation will not change as a result of the proposed project.

2.1.5 Wildlife

The Adrian wellfield site provides little in the form of wildlife habitat. The grass fields and shrubs along the perimeter of the site likely provide habitat some birds and small mammals. These animals will not be disturbed by the daily operations of the proposed project.

The unnamed tributary to Kanaranzi Creek that borders the wellfield to the south was surveyed for Topeka shiners in the Spring of 2005. In addition to Topeka shiners, the fish survey collected fish species that are commonly found in southwest Minnesota including: creek chub, bluntnose minnow, white sucker, common shiner, central stoneroller, tadpole madtom, redbelly dace, Johnny darter, and brook stickleback. These species will be impacted in the same manner as the Topeka shiner as the result of the propose project which may include loss of stream flow or loss of access to stream habitat. The tributary is connected to the main-stem of Kanaranzi Creek, which allows fish in the tributary to seek refuge in the main-stem during periods of low or zero flow.

2.1.6 Existing Land Use

The land use at the Adrian wellfield site can be classified as Municipal Utility. The land use has been unchanged at the site since the operation of the wellfield began in approximately 1960. The land use at the project site will not change as a result of the proposed project. The wellfield site is bordered by US I-90 and agricultural fields to the north, agricultural fields to the east and south, some commercial development to the south and west and a city owned grass field to the west.

2.2 SPECIES OF CONCERN IN THE PLAN AREA

The species to be covered under this HCP is the federally endangered Topeka shiner (*Notropis Topeka*). The Topeka shiner is a small, silvery minnow that grows to approximately 3 inches in length. In Minnesota, food sources of the Topeka shiner include several kinds of zooplankton, a variety of immature aquatic insects, larval fish, algal and vascular plant matter, including seed capsules (Hatch and Besaw 1998). The typical life span of a Topeka shiner is approximately 3 years. Topeka shiners spawn over the nests of green and/or orange spotted sunfishes, with the males defending a small territory around the periphery of the sunfish nests (Pflieger 1997). Topeka shiners are known to be a pool species that prefers pools with depths less than two meters and current velocities less than 0.5 m/s (Tabor 2004). In the prairie streams of southwest Minnesota, Topeka shiners have been found to occupy main-channel, as well as side-channel or off-channel pool habitats. The extent of this preference for pool and off-channel pool habitats has caused recent sampling efforts for the presence of Topeka shiners in southwest Minnesota streams to focus only on these habitat types (Ceas and Anderson, 2004; Ceas and Monstad, 2005). Field investigations have further shown that sampling outside of pool habitats in stream runs or riffles rarely results in the capture of Topeka shiners (Ceas, personal communication).

2.2.1 Wildlife Species of Concern

The area covered by this HCP is located entirely within Nobles County. There are no other federally listed wildlife species of concern located in Nobles County, Minnesota.

2.2.2 Plant Species of Concern

The area covered by this HCP is located entirely within Nobles County. The western prairie fringed orchid is federally listed as threatened and known to occur in Nobles County. The preferred habitat of the western prairie fringed orchid is remnant native prairies and wet meadows. The Adrian wellfield site consists of municipal utility land use, is regularly mowed and has existed in the same condition since the operation of the wellfield began in approximately 1960. The land use in the area surrounding the wellfield site consists of actively cultivated crop lands, light commercial and city park land. There are no known records of the western prairie fringe orchid at the project site and it is unlikely that the western prairie fringed orchid occurs in the plan area covered by the HCP. Daily activities at the project site will not change as a result of the proposed increase in pumping volume and are not anticipated to impact vegetative communities.

3.0 Project Description/Activities Covered by Permit

3.1 PROJECT DESCRIPTION

The Adrian Wellfield is owned and operated by the Applicant and has been in operation since at least 1960. The Applicant was approached by Lincoln Pipestone Rural Water Authority (LPRW) with a request to purchase approximately 10.5 million gallons per year of water from the existing wellfield to distribute to its customers in the area through its existing conveyance system. It was determined that an additional well could be added to the wellfield that would serve two purposes: 1) pump the additional water requested by the LPRW and 2) serve as a back up production well for the Applicant in the event that problems with one of the existing production wells arise. The current DNR groundwater appropriation permit (PN 75-4223) for the Adrian Wellfield authorizes an annual use of 50 million gallons of water at a maximum pumping rate of 550 gallons per minute (gpm). The revised groundwater appropriation permit (Appendix 1) was applied for on February 16th, 2007 and requested an annual increase of up to 10.5 million gallons of water for a total maximum annual consumption of up to 60.5 million gallons per year (mgy) at a maximum pumping rate of 550 gpm. Based on consultations with the DNR the permit amendment request is currently under review pending the successful negotiation of an acceptable mitigation strategy to offset potential Topeka shiner impacts with the FWS. There are three production wells at the Adrian Wellfield, numbered No. 5, No. 6 and No. 7, which was installed during the fall of 2006 as part of the increased water appropriation request but production pumping from Well No. 7 has not yet commenced.

3.2 ACTIVITIES COVERED BY PERMIT

The activity proposed by the Applicant that has the potential to impact the endangered Topeka shiner is the pumping of ground water from shallow aquifer from the three productions wells at the Adrian wellfield. The Adrian Wellfield pumping of groundwater from the shallow aquifer has the potential to cause a loss of base flow from the unnamed tributary of Kanaranzi Creek.

The loss of base flow from the tributary could potentially degrade the quality or limit the access to the existing pool habitat utilized by the local population of Topeka shiners in the tributary stream.

4.0 Potential Biological Impacts/Take Assessment

4.1 DIRECT AND INDIRECT IMPACTS

The determination of the project impact area as well as the potential project related impacts are described in the proceeding sections.

4.1.1 Determination of Impact Area

A small amount of operational data (pumping records, observation well readings, etc.) is available for the Adrian Wellfield. Additionally, through the installation of new production Well 7 at the Adrian Wellfield, some data describing the characteristics of the local aquifer and geology was gathered. However, discussions between DNR Hydrologists, USFWS Biologists and the Applicant determined that the amount of data available would not be sufficient to allow for detailed modeling of the relationship between the pumping activities at the wellfield and the potential impacts to flow in the adjacent stream channel. It was also determined that the collection of an adequate data set and the subsequent modeling of relationship between the ground water pumping and stream flow would be a large undertaking in terms of time and cost and that at the end of this large effort there were no assurances that a definitive conclusion on impacts to the stream, or ultimately the Topeka shiners living there, could be reached. It was then agreed by all parties involved that foregoing detailed modeling, assuming a reasonable impact area based on the data currently available, and concentrating funds on mitigation efforts would be a better overall benefit to the species.

The available data from the installation of new Well 7 at the Adrian Wellfield (Appendix 2) was reviewed in conjunction with the USGS Topographic Quads and the Minnesota Hydrologic Atlas for the project site. The estimated average stream flow for the tributary stream is 1 cfs, based on analysis of the USGS Quad map and an estimated watershed size of approximately four square miles. The amendment to the consumptive use permit for the wellfield is requesting an increase from 50 mgy to 60.5 mgy. The increased water consumption will come from pumping the

production wells for a slightly longer period of time on either a daily or seasonal basis but the wellfield does not currently operate 24 hours a day and this will not change under the new permit.

However, a key component of the requested increase in groundwater consumption is that the maximum pumping rate is remaining the same compared to the existing permit at 550 gpm. The rate at which the ground water is pumped from the wellfield is the factor that is most likely to impact the stream water levels, with the total water removed on an annual basis being less of an impact. With the maximum pumping rate remaining unchanged compared to the current operation condition of the wellfield, the potential impacts to the stream water levels should be similar to the current operating conditions, during which Topeka shiners have been found using the stream. Additionally, the maximum pumping rate of 550 gpm is the wellfield maximum pumping rate, not a pumping rate for individual wells. During a condition where the wellfield was operating at the maximum allowable pumping rate, the total of 550 gpm would be distributed between the three production Wells, number 5, 6 and 7. The newly installed Well 7 is located to the north of Wells 5 and 6 (Figure 2). An analysis of the maximum pumping condition comparing a two well scenario (5 and 6) and a three well scenario (5, 6 and 7) revealed that the potential impacts to stream water levels would be lessened under the three well scenario. This is due to the fact that the third production well (Well 7) is further away from the tributary stream adjacent to the wellfield and drawing from a portion of the groundwater aquifer that has less influence on the stream water levels. Overall, the impacts to stream water levels as a result of the proposed increase in wellfield groundwater consumption from 50 to 60 mgy are not anticipated to change significantly from the current operational condition.

Under the current operations of the Adrian Wellfield Topeka shiners were found to be utilizing the stream reach adjacent to the wellfield during the spring 2005 field survey (As described below in the ‘Area to be Covered’). It appears that any impacts to the species from the current operations of the wellfield are minor. As described above, the additional ground water appropriations from the pumping of the new Well #7 would have a minimal impact on stream flow in the impacted tributary. Due to relatively small increase in ground water consumption and

the fact that the existing impacts from wellfield operations on the stream appear to be minor, a 1/4 mile impact zone from the center of the wellfield was determined to be an appropriate area of impact for the Adrian Wellfield.

4.1.2 Area to be Covered

Based on the above determination of the impact area for the proposed activity, there is a total of 125 acres in the 1/4 mile buffer zone around the Adrian Wellfield. The potentially impacted area within this 1/4 mile buffer area is approximately 3000 linear feet of stream channel of the unnamed tributary to Kanaranzie Creek. This potentially impacted stream reach was included in a field survey for Topeka shiners that was conducted in the Spring of 2005 (Appendix 3). The field survey was conducted by a fisheries biologist with a valid Recovery Permit. During this survey three (3) pool habitat areas that contained Topeka shiners were located within the 3000 feet of potentially impacted channel (Figure 3). There is also one additional pool just outside of the 1/4 mile impact area to the south where Topeka shiners were collected during the field survey. These shallow pool habitats within the highlight stream reach are the only significant habitat features that could potentially be affected by daily operations at the wellfield. Overall the potential impacts to these pools (i.e., loss of pool depth or limited access to pool from stream channel) are anticipated to be minor.

4.1.3 Anticipated Take: Wildlife Species

The anticipated take that is expected to occur in the above described impact area as a result of the proposed operational condition at the project site is the denial of access to habitat through a decrease in flow and/or water levels in the stream adjacent to the Adrian wellfield. The total amount of stream channel where take would occur is approximately 3000 linear feet of stream channel (Figure 3). In the event that a condition of take occurs it will be assumed that all of the Topeka shiners using the stream reach will be impacted and will be unable to access any of the habitat in the stream reach while take is occurring. The determination of take occurring as all individuals in the reach, is result of the limited amount of available hydrological data available not being adequate to make a precise calculation of take for the impacted reach. It was therefore determined that it would be appropriate to consider a worse case scenario when defining take for

the impacted reach. The total number of Topeka shiners using the reach is not known, however based on the biological survey conducted in Spring of 2005 (Appendix 3) the standing population of Topeka shiners in the impact area is small, with less than 20 total individuals collected during the Spring 2005 survey (Ceas, personal communication).

4.1.4 Anticipated Impacts: Plant Species

There are no known records of environmentally sensitive plant communities located at the project site. The vegetation at the Adrian wellfield site, as well as in the surrounding HCP impact area, is not expected to change or be impacted as a result of the proposed operational condition at the project site.

4.2 CUMULATIVE IMPACTS

The proposed condition is very similar to the current operational conditional at the Adrian wellfield site and as such, cumulative impacts to the Topeka shiner or other environmentally sensitive species or communities are not anticipated to occur as a result of the proposed operational condition at the Adrian wellfield.

5.0 Conservation Program Measures to Minimize and Mitigate for Impacts

5.1 BIOLOGICAL GOALS

Based on DNR and FWS directed surveys for Topeka shiners in southwest Minnesota, the Topeka shiner appears to occupy the majority of its historic range in Minnesota. Topeka shiners have been found in a variety of pool habitats in southwest Minnesota, including live stock ponds connected to streams, which indicate the species is tolerant to some decreases in water quality as long as the proper habitat is available (Ceas, personal communication). The main factor limiting Topeka shiner populations is the lack of suitable shallow, low flow main-channel or off-channel pools (Ceas and Anderson, 2004; Ceas and Monstad, 2005). Considering what is known about the Topeka shiner is Minnesota, the biological goals of this HCP are: 1) To ensure that the current range occupied by Topeka shiners in southwest Minnesota is not diminished and 2) Facilitate the ability of the existing Topeka shiners to increase their population stability and/or abundance within its current range.

5.1.1 Biological Objectives

The first biological goal of the HCP is "To ensure that the current range occupied by Topeka shiners in southwest Minnesota is not diminished". The anticipated impacts to stream flow and water levels in the tributary stream are expected to be minor as a result of the proposed project. The defined impact area for the proposed project is small and in the event that take occurs, would not diminish the current range of Topeka shiners. Should take of Topeka shiners occur, it is anticipated to occur as a seasonal loss of stream habitat and not long term extirpation of Topeka shiners from the tributary stream. However, the permanent loss of access to the tributary stream as a result of wellfield operations would be contradictory to the first biological goal. Therefore, the first biological objective is to monitor wellfield operations and monitoring well water levels for potential long term impacts on the groundwater supply. Observation wells are currently monitored at the Adrian wellfield site and abnormal changes in observation well water levels will

be noted and examined in an attempt to determine if the aquifer and/or stream water levels are being unduly affected by wellfield operations.

The second biological goal of the HCP is “Facilitate the ability of the existing Topeka shiners to increase their population stability and/or abundance within its current range”. Topeka shiners require pool habitat to thrive and the loss of pool habitat, through channelization, filling of ox-bows, or disconnection from wetlands, is one of the main factors limiting Topeka shiner populations. Therefore the second biological objective will be to create new pool habitat for Topeka shiners in streams where they are known to exist. The creation of new pool habitat in stream reaches where pools are lacking, will accomplish the goal of stabilize current Topeka shiner populations in a given stream reach as well as provide suitable spawning habitat for Topeka shiners, which will lead to increased abundance of Topeka shiners in a stream. The target stream reaches for the creation of new pool habitat under this biological objective will be those reaches that where Topeka shiners are known to exist.

5.1.2 Adaptive Management Strategy

The adaptive management strategy for this HCP is the creation of new pool habitat in Minnesota streams designated as critical habitat by the FWS. The creation of pool habitat in streams where Topeka shiners are known to occur has been successfully undertaken by the Rock Island Office of the FWS on several streams in Iowa. The uncertainty involved in the creation of new pool habitat is that it is not known if Topeka shiners will use the habitat once it is created. However, based on the past success of FWS offices creating pool habitats for Topeka shiners in Iowa streams and on discussions with FWS Biologists, the creation of pool habitat in streams reaches where pools are scarce or absent, should lead to an increase in population stability and/or abundance of Topeka shiners in that reach as targeted under biological goal 2. Therefore the creation of new pool habitat is reasonable approach that is likely to be successful in accomplishing the biological goals and objectives described in this HCP. The implementation of a monitoring program, as described in Section 5.4, will ensure that the biological goals and objectives of the species are in fact met and further will identify were additional actions are required to accomplish the biological goals and objectives of this HCP.

5.2 MEASURES TO MINIMIZE IMPACTS

The proposed project described in this HCP is the increase of groundwater production from an existing municipal wellfield for regional consumption. As described in Section 4.1 (Determination of the Impact Area), the three well pumping scenario (pumping from Wells 5, 6 and 7) would lessen the impacts to the tributary due to the newly constructed Well 7 being further from the stream than Wells 5 and 6. As a minimization measure, the three well pumping scenario will be employed whenever feasible during wellfield operations to lessen the wellfield impacts on stream flow in the tributary adjacent to the wellfield

The only avoidance measure that could potentially be taken to minimize impacts to Topeka shiners in the project area would be the location of an alternate regional water source. This option was explored and is described in further detail under the Alternatives Section 7.0. An alternative water source which would either eliminate or lessen impacts to Topeka shiners below the levels anticipated under the proposed operating condition was not identified.

5.3 MEASURES TO MITIGATE UNAVOIDABLE IMPACTS

Based on recent field surveys for Topeka shiners in southwest Minnesota, the major habitat factor limiting Topeka shiner populations is the lack of suitable shallow, low flow main-channel or off-channel pools (Ceas and Anderson, 2004; Ceas and Monstad, 2005). The impacts to the tributary stream caused by the Applicants actions at the Adrian Wellfield will not eliminate any pool habitat from the stream. However, the addition of suitable pool habitat to the stream will provide a benefit to the Topeka shiners using the stream reach and would offset any impacts the Applicant may be having on the species. The creation of new pool habitat within streams occupied by Topeka shiners will achieve HCP Biological Goal 2, “Facilitate the ability of the existing Topeka shiner to increase their population stability and/or abundance within its current range”.

The Applicant proposes to construct a new off-channel pool as mitigation for impacts to the tributary stream caused by the operations at the Adrian Wellfield. The Rock Island Office of the

FWS has undertaken several off-channel pool construction projects that have been successful in creating Topeka shiner habitat. The Rock Island Office was consulted to gather information in regards to constructing similar off-channel pool habitat. Before and after photos of an ox-bow pool restoration project constructed on Cedar Creek in Green County, Iowa by the Rock Island FWS Office are presented in Figure 4. Based on the construction information obtained from the Rock Island FWS Office the bottom of the constructed pool is excavated down to a depth equal to or slightly deeper than the depth of the existing stream channel. This allows for some standing water to be present in the pool during normal flow conditions. The sides of the pool are sloped back gently (as displayed in Figure 4) and the constructed pool is connected to the existing channel between the normal flow stage and bankfull flow stage elevations.

A conceptual design of the proposed constructed pool is presented in Figure 5. The approximate dimensions of the pool will be eight feet in depth, 25 feet in width and 50 feet in length. The actual constructed dimensions will depend on the conditions at the site, such as height from stream bed to top of bank; the excavated depth of the historic stream bed if an oxbow area is used,; and the soil characteristics that could affect the side slopes. The design will also incorporate necessary stream channel improvements, such as constructed riffles, to ensure that the stream flow remains in the existing channel and does not create scouring or sedimentation that would compromise the integrity of the constructed habitat. After completion of construction, disturbed banks and side slopes will be seeded with an approved native seed mix and live stakes will be planted where necessary to added further bank protection. Erosion control measures, such as silt curtains, will be employed during in-stream work as necessary.

The constructed pool habitat and associated stream improvements (i.e. constructed riffles) will be located and constructed in a manner that will avoid any adverse effects to the quality of Topeka shiner habitat components of existing in-stream or off-channel pools. Effects to be avoided include, but are not limited to, deepening or increasing the flow through shallow existing pools, degrading existing in-stream cover, or increased deposition of fine sediments in existing pools. The final design of the pool will be submitted to the FWS for review (To be completed after review and approval of the HCP and the mitigation plan). Once the final design is complete and

approved, the Applicant would acquire any necessary permits from the County or DNR to conduct work within a water of the State of Minnesota.

The Applicant proposes to construct the new off-channel pool habitat at one of two mitigation sites. The preferred site would be to construct the pool along a section of Pipestone Creek in Pipestone County, Minnesota (Figure 6). LPRW is proposing to construct similar pool habitat along this section of Pipestone Creek, which runs adjacent to their Holland Wellfield, under a separate mitigation effort and HCP. Topeka shiners were found in this section of Pipestone Creek in the summer of 2006 but the lack of pool habitat in this stream reach appears to be a major factor limiting the overall population of Topeka shiners within the reach. If the preferred site is selected the Applicant would be able to combine their efforts with LPRW to maximize benefits to species in a stream segment that has been designated as FWS Critical Habitat for Topeka shiners, as well as minimize design and construction costs.

The alternate site for constructing the new off-channel pool habitat is along the unnamed tributary to Kanaranzie Creek that flows adjacent to the Adrian Wellfield. The Applicant would construct the pool outside of the 1/4 mile impact zone, downstream of the wellfield but upstream of where the stream flows under US I-90 (see Figure 3). During the field survey conducted on this stream reach in spring of 2005 this area of the stream was found to be lacking suitable pool habitat for Topeka shiners and as a result Topeka shiners were not collected there. Construction of new off-channel pool habitat along this section of the unnamed tributary to Kanaranzie Creek would provide a benefit to the Topeka shiners in likely both the tributary and the main-stem of Kanaranzie Creek.

5.4 MONITORING AND REPORTS

The Applicant proposes the following monitoring activities in conjunction with the proposed mitigations measures described in this HCP.

- As stated in Section 5.3, prior to commencing pool construction or any in-stream work, the final design of the pool will be submitted to the FWS for review (To be completed approval of the HCP and the mitigation plan). Once the final design is complete and

approved, the Applicant would acquire any necessary permits from the County or DNR to conduct work within a water of the State of Minnesota.

- The Applicant will continue to monitor the water levels in the observation wells at the Adrian Wellfield. Abnormal changes in observation well water levels will be noted and examined in an attempt to determine if the aquifer and/or stream water levels are being unduly affected by wellfield operations.

- The Applicant will conduct a visual/physical inspection of the newly created pool habitat on an annual basis. The inspection will take place in early summer (target will be June) after high spring time flows have subsided. The intent of the inspections will be to determine if the created pool habitat has been altered from the designed and/or constructed condition. The inspection will include such measures as: measuring depth of the pool to determine if sedimentation is occurring; ensuring that the planted vegetation is stabilizing the banks and protecting the pool from erosion; and checking for scouring or erosion at the mouth of the pool.

- At the time of the summer visual inspection, flow will be measured in the creek as well within the created pool habitat. The target flow for the created pool habitat will be 0.5 m/s or less. The design of the constructed pools will incorporate this target and attempt to keep the majority of the flow within the stream channel and ensure that the created pool only receives sufficient flow to allow connectivity to the stream.

- If the annual inspections reveal that the quality of the pool habitat has been significantly altered or degraded from the constructed condition, maintenance activities will be preformed to restore the quality and function of the pool habitat for use by Topeka shiners.

- Upon completion of the construction of the new off-channel pool habitat the Applicant will employ the services of Dr. Pat Ceas (working under Recovery Permit Number TE-

129763) to conduct biological monitoring of the pools to determine if Topeka shiners are utilizing the newly created habitat. Assuming that the construction of the new pool habitat is completed by the Fall of 2007, a baseline field survey for habitat quality and Topeka shiners will be conducted in the Spring of 2008. Subsequent field surveys to examine the quality of available habitat and presence of Topeka shiners will be conducted three years (2011) and eight years (2016) after the baseline survey. Data recorded during all field surveys will include the number and sex of any Topeka shiners surveyed, presence of other important fish species important to Topeka shiners (i.e. orange spotted sunfish), visual inspection of pool substrate for habitat quality, and evidence of breeding activity in the pool.

- Based on the results of the above described biological monitoring events it will be determined if additional biological monitoring or alterations to the constructed habitat are required.

- Results of the annual field inspections, as well as the biological monitoring surveys, will be summarized in a technical memorandum by the Applicant and submitted to the FWS for review.

6.0 Funding

6.1 FUNDING FOR MINIMIZATION AND MITIGATION MEASURES

Funding to cover the mitigation and monitoring activities described in this HCP will be provided by LPRW, as agreed to in negotiations with the Applicant during the request to purchase the 10.5 million gallons per year of increased groundwater production.

7.0 Alternatives

7.1 ALTERNATIVE 1

The consideration of alternatives to the actions proposed by the Applicant was limited to the consideration of identifying a new wellfield site where additional water could be obtained. However, this alternative was considered inferior to the proposed action of increased production at the existing Adrian Wellfield for the following reasons:

- In the event that a new well was not built for increased production at the existing Adrian Wellfield site, both the Applicant and LPRW would have unsatisfied water production needs that would have to be addressed by an alternate, likely new, wellfield site.

- Due to the distribution of Topeka shiners in streams in Nobles County, it is unlikely that avoidance of impacts to Topeka shiners could be achieved through the location of a new wellfield at an alternate site in Nobles County that could meet the water production needs of the Applicant and LPRW.

- By installing an additional production well at the existing Adrian Wellfield, both the Applicant and LPRW will be able to utilize their existing water conveyance system and additional construction impacts (i.e. stream crossings) on the Topeka shiner would be avoided.

- In event that a new wellfield site was constructed, additional water conveyance system would likely also have to be constructed. The construction of this new conveyance system in Nobles County would likely cross streams inhabited by Topeka shiners and further impacts to Topeka shiners could occur.

- The estimated impacts of the proposed increase in ground water production at the Adrian Wellfield on the endangered Topeka shiner were determined to be minor and can be reasonably offset with proper mitigation. As such it was determined that an alternate wellfield site would not be required in order to minimize impacts to the Topeka shiner.

8.0 Plan Implementation, Changed and Unforeseen Circumstances

8.1 CHANGED CIRCUMSTANCES

The Applicant is requesting the permit duration be for 30 years from 2007 until 2037. During that time the Applicant will perform the mitigation and monitoring described in this HCP. If during the above stated 30 year permit period any changes to the Adrian Wellfield are made, including on-site construction, changes in daily operations or changes in water consumption, the Applicant will consult the FWS as necessary and complete the required amendment procedures (minor or major revisions) as listed under the Incidental Take Permit form.

9.0 Literature Cited

Anderson, H.W., W.L. Broussard, D.F. Farrell, and P.E. Felsheim. 1976. Water Resources of the Rock River Watershed, Southwestern Minnesota. (Hydrologic Atlas HA-555, U.S. Geological Survey).

Ceas, P.A and Y.A. Anderson. 2004. *Results of a Pilot Monitoring Project for Topeka Shiners in Southwest Minnesota*. Report submitted to MDNR Natural Heritage and Nongame Research Program.

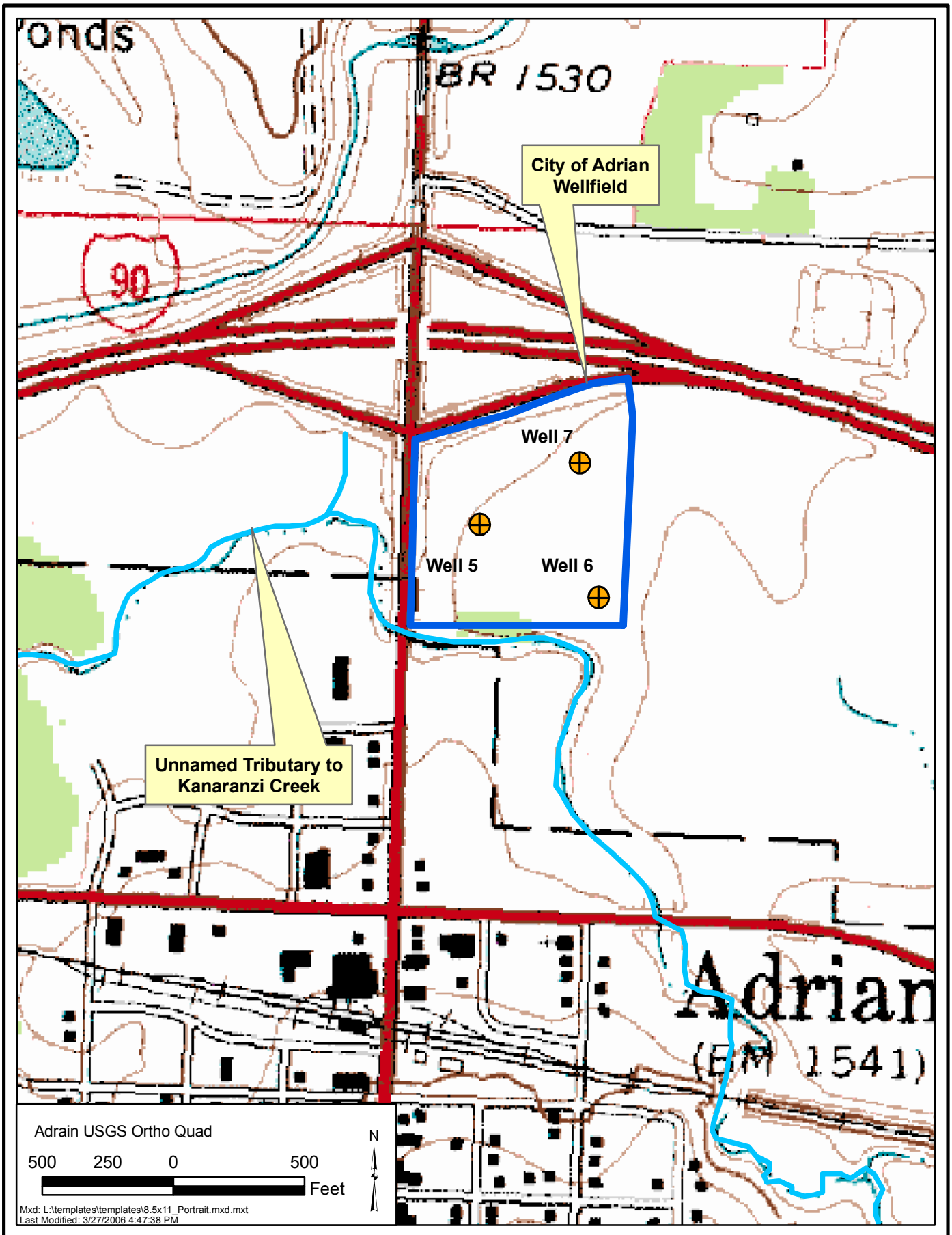
Ceas, P.A and Y.A. Monstad. 2005. *Results of a Pilot Monitoring Project for Topeka Shiners in Southwest Minnesota: Year Two*. Report submitted to MDNR Natural Heritage and Nongame Research Program.

Hatch, J. T. and S. Besaw. 1998. Diverse food use in Minnesota populations of the Topeka shiner (*Notropis topeka*). unpublished manuscript, James Ford Bell Museum of Natural History, University of Minnesota, Minneapolis. 12 pp.

Pflieger, W. P. 1997. *The Fishes of Missouri.* The Missouri Department of Conservation. Revised edition. pp 154-155.

Tabor, V. 2004. Final Designation of Critical Habitat for the Topeka Shiner, Final Rule. Federal Register.69:44736-44770.

Figures



City of Adrian - Incidental Take Permit Application

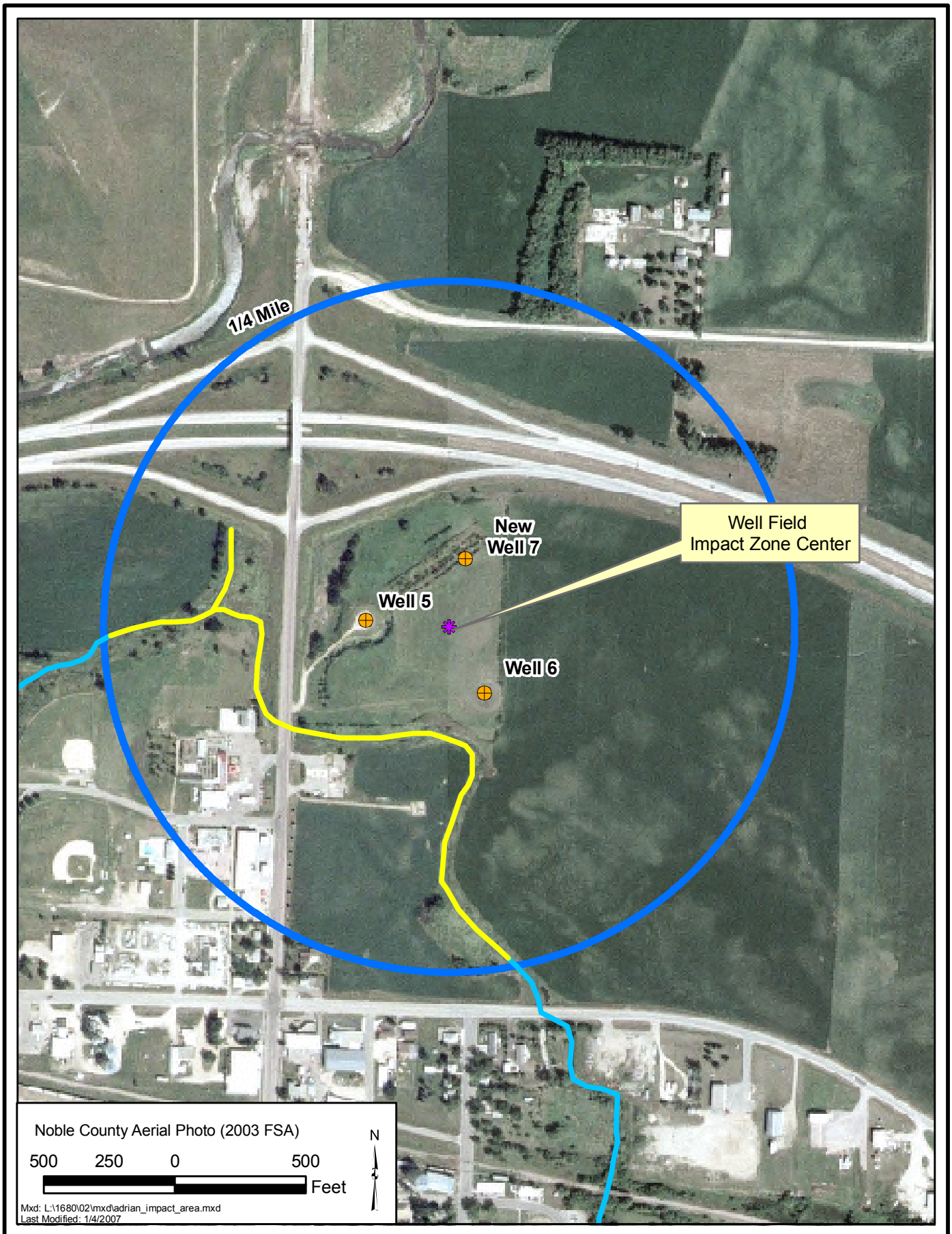
Adrian Wellfield - Project Location

Wenck

Wenck Associates, Inc. 1800 Pioneer Creek Center
Environmental Engineers Maple Plain, MN 55359-0429

FEB 2007

Figure 1



City of Adrian - Incidental Take Permit Application

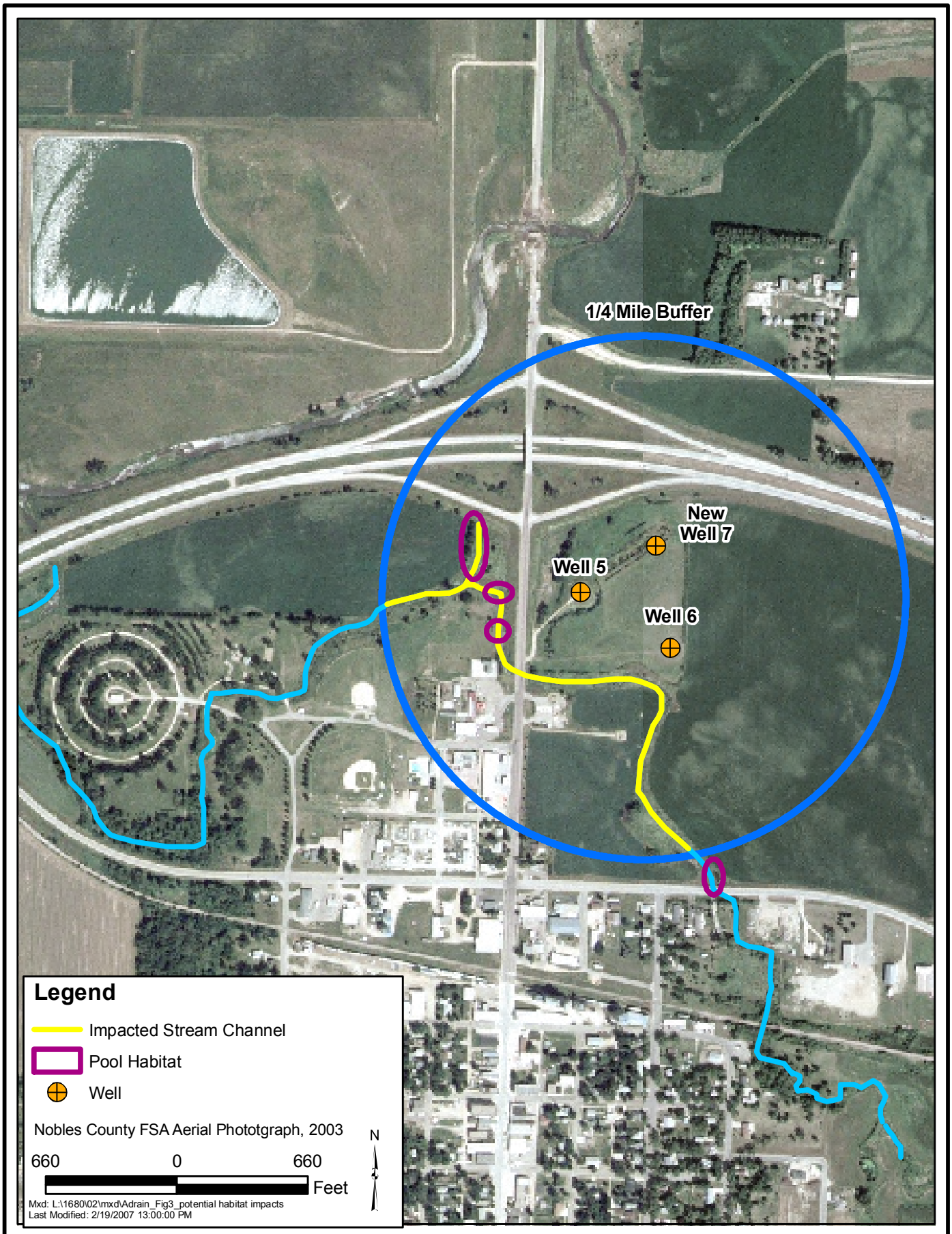
Adrian Wellfield - Stream Impact Zone

Wenck

Wenck Associates, Inc. 1800 Pioneer Creek Center
Environmental Engineers Maple Plain, MN 55359-0429

FEB 2007

Figure 2



City of Adrian - Incidental Take Permit Application

Adrian Wellfield - Potentially Impacted Habitat

Wenck

Wenck Associates, Inc. 1800 Pioneer Creek Center
Environmental Engineers Maple Plain, MN 55359-0429

FEB 2007

Figure 3

Photograph taken prior to start of oxbow restoration construction on Cedar Creek in Greene County, Iowa.

Photograph taken after completion of oxbow restoration on Cedar Creek in Greene County, Iowa. Note the gently sloping sides and relatively shallow nature of the constructed pool.

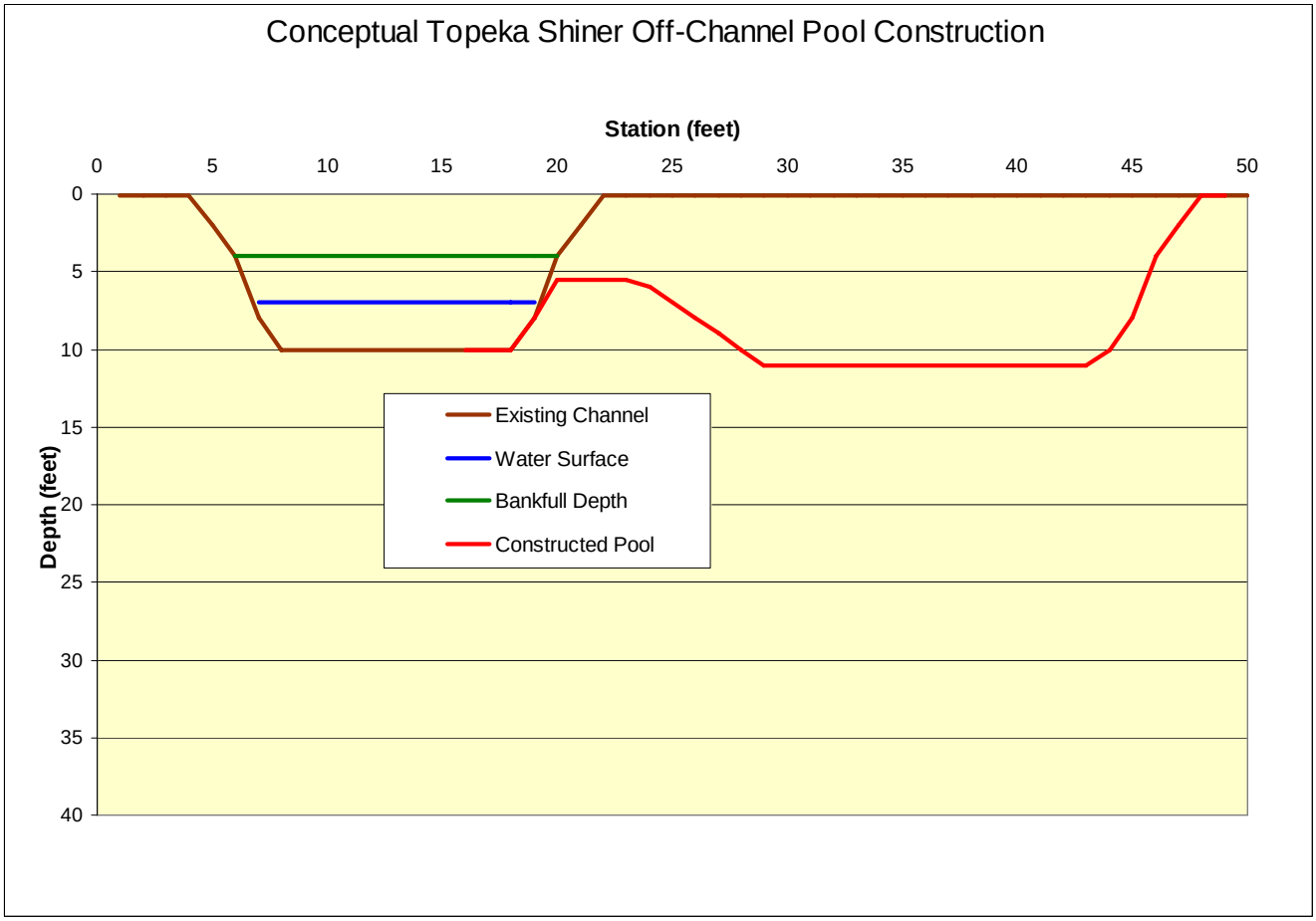
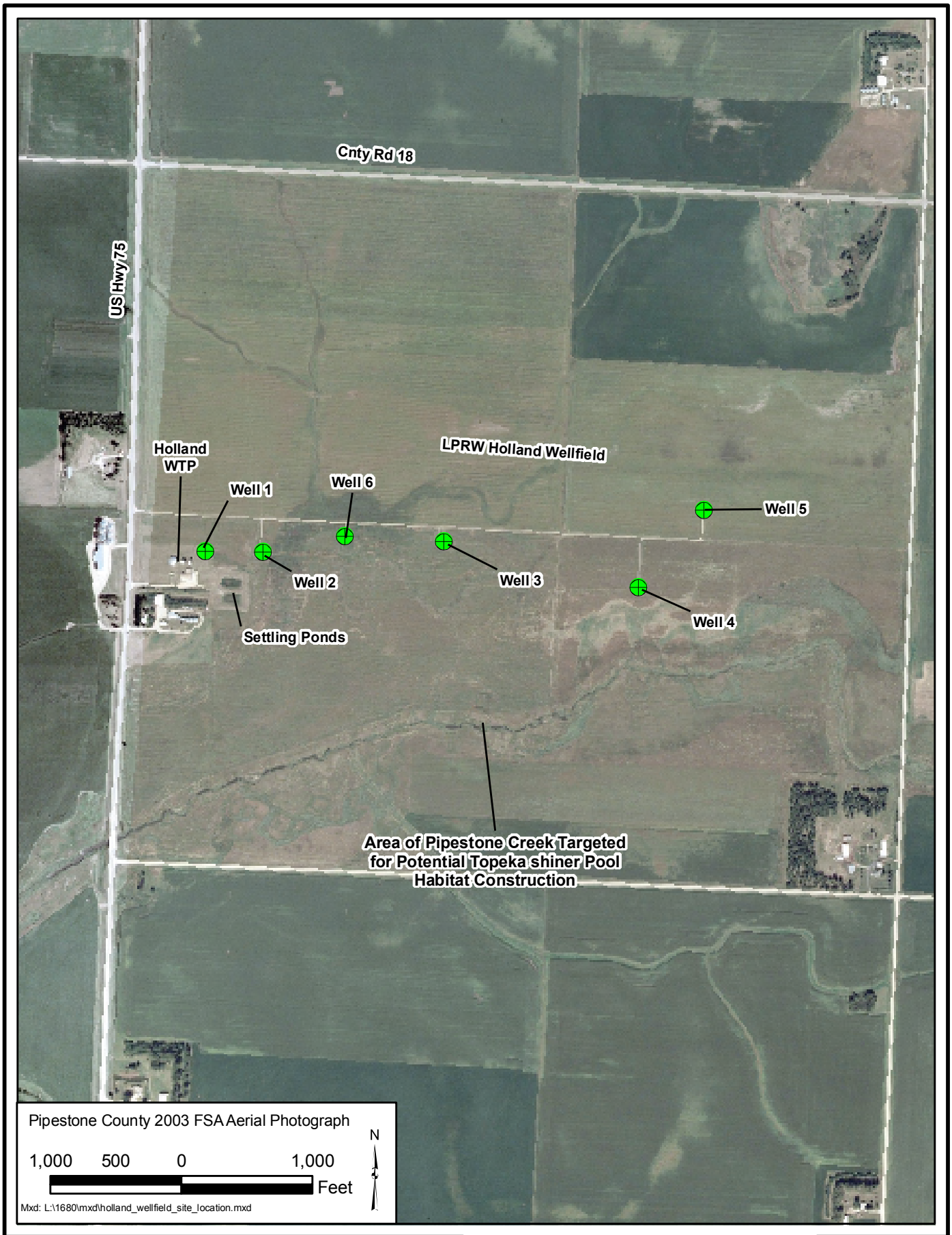


Figure 5: Conceptual design of off-channel habitat creation as mitigation for Topeka shiner impacts. The constructed pool will be seasonally connected to main channel during high flow events. The bottom depth of the new pool will be excavated to a depth equal to or slightly deeper than the existing channel to ensure a standing pool during normal flow conditions.



City of Adrain - Incidental Take Permit Application

Preferred Mitigation Site Along Pipestone Creek

Wenck

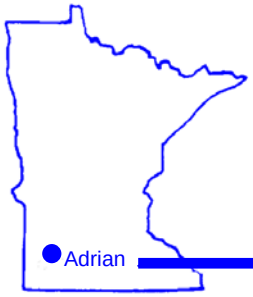
Wenck Associates, Inc. 1800 Pioneer Creek Center
Environmental Engineers Maple Plain, MN 55359-0429

FEB 2007

Figure 6

Appendix 1

Groundwater Permit Amendment Letter



THE CITY OF ADRIAN
ADRIAN PUBLIC UTILITIES
20 Maine Avenue - P.O. Box 357
Adrian, Minnesota 56110
PH 507-483-2680 FX 507-483-2687
E-Mail: tmiller2@iw.net
Public Works & Utilities - Terrance L. Miller, Superintendent

2/16/2007

Minnesota DNR-OMB
500 Lafayette Rd.
Box 10
St. Paul, MN 55155

Dear Sir or Madam,

Enclosed are our 2006 Annual Report of Water Use documents. We are requesting an increase in our permitted volume from 50 million gallons annually to 60.5 millions gallons. This increase is being requested because we have contracted to supply Lincoln-Pipestone Rural System (LPRW) with approximately 10 million gallons annually, starting spring 2007.

A new well (Adrian Well #7, MN Unique Well #721689) has been installed in the City of Adrian/Public Utilities aquifer to supply additional capacity to our system. In addition, this well will replace a well (Adrian Well #2, MN Unique Well #241355) that was sealed in 2006.

We have been working closely with Lincoln-Pipestone Rural Water System installing this well. There have also been some issues with the "Topeka Shiner", an endangered species, which may or may not be affected by the water drawn by this new well. Wenck Associates Inc., Windom, MN, has been retained by LPRW to work with the US Fish and Wildlife Service to monitor and if needed, design and install a remediation area to protect this species.

In order to educate the public about water conservation, we have put articles in the local newspaper, The Nobles County Review, about water saving tips during the summer months. Watering restrictions are also enacted when drought conditions or low water levels exist.

We have included, to the best of our knowledge, all applicable documentation and fees required.

If you have any questions or comments, please feel free to call me at 507-483-2680.

Sincerely,

Terrance L. Miller

Enc

"City of Adrian Letterhead"

December 13, 2005

Mr. Tom Kresko
Minnesota DNR
175 County Road 26
Windom, MN 56101

RE: Adrian, Minnesota – Amendment Request for Permit 75-4223

Dear Mr. Kresko:

The City of Adrian is requesting the Minnesota Department of Natural Resources (DNR) to add a new well designated as Well 7 to groundwater appropriation permit 75-4223. The location of Well 7 is indicated on the quadrangle location map found in Attachment A. The Minnesota Well Record for Well 7 (721689) is located in Attachment B. Well 7 is located at the City Well Field with Wells 5 and 6.

The City of Adrian is also requesting a permit amendment to increase the annual volume from 50 million gallons per year (mgy) to 60.5 mgy total from the three wells. The increase in the annual volume is based on Lincoln Pipestone Rural Water request for the City of Adrian to provide an estimated at 80 gpm for a 90 day period during the spring and early summer. This amount would require an increase in the current permitted volume from 50 mgy to 60.5 mgy but would not require an increase in maximum pumping rate from the current 550 gpm.

In support of this amendment request, we are submitting the enclosed Well 7 construction and testing report from Liesch Associates Inc. Also, please find enclosed a check for $150.00 for the fee for this permit amendment request.

Please contact us at 800-338-7914 with any questions or comments you may have, or if you require any additional information.

Sincerely,

City of Adrian

Encl.

Application for
Water Appropriation Permit Ammendment
for
Adrian, Minnesota

Permit: 75-4223

Applicant: City of Adrian - Adrian, Minnesota

Address: 310 Maine Ave.
P.O. Box 187
Adrian, MN 56110-0187

Authorized Agent: Mr. Terrance Miller

Phone: (507) 483-2849

Purpose: Municipal Water Supply

Source of Water: Three wells drawing water from a water table aquifer. Two existing wells designated as Well 5 (149184) & Well 6 (149187) and one new well Well 7 (721689) (Well 7 log attached).

Point of Taking:

Well Name	Well Unique Number	Township Range Section	Well Depth (feet)	Well Casing Size
Well 5	607153	T102N R42W Sec. 18 BBCC	25.5	12-Inch
Well 6	590447	T102N R42W Sec. 18 BBDC	41.75	12-Inch
Well 7	721689	T102N R42W Sec. 18 BBDB	42	18-Inch

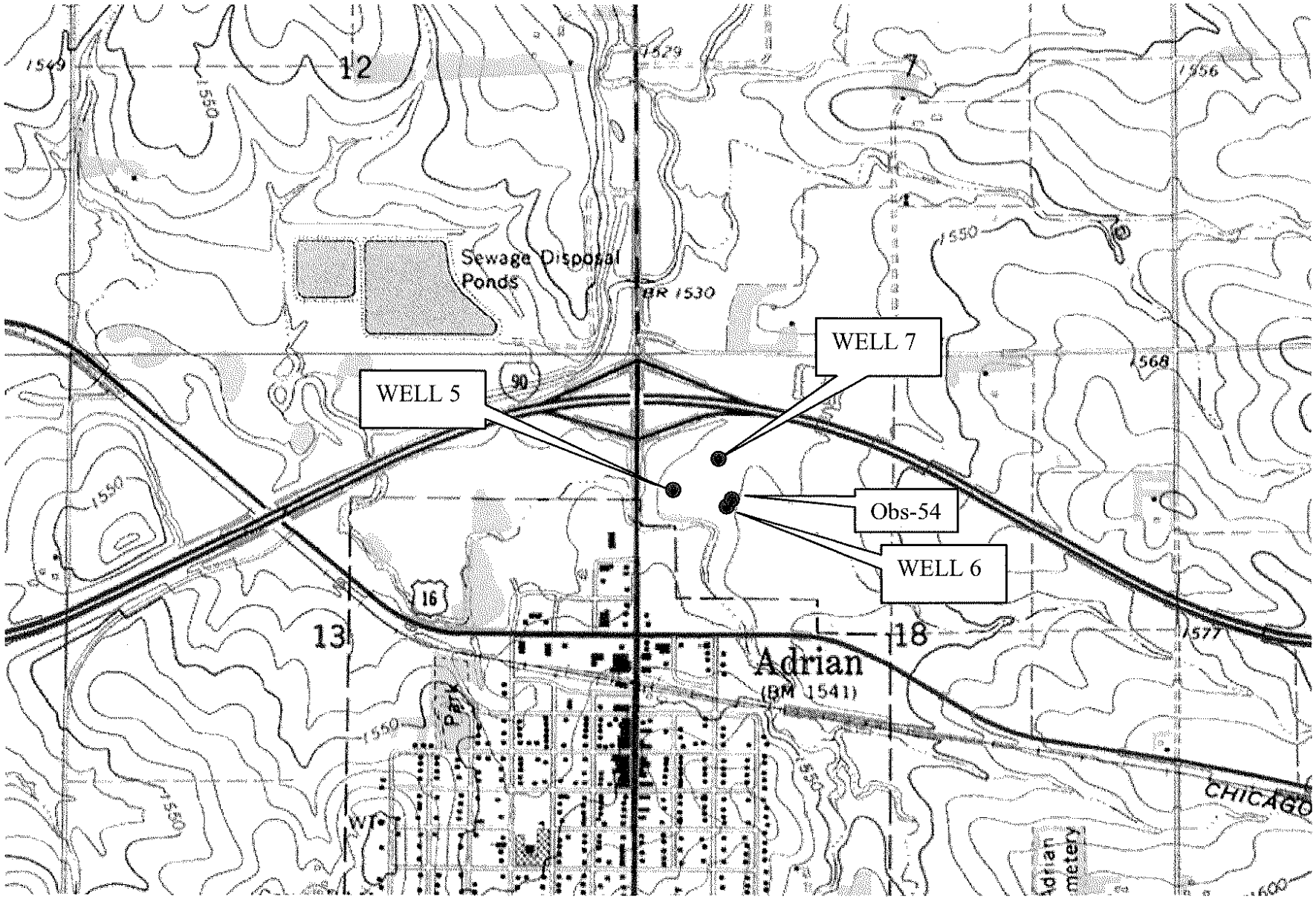
Three wells, the location of each well is shown on attached Figure 1 the USGS Topographic Map and Figure 2 Aerial Photo.

Means of Taking/Rate: Permanent, stationary pumps with a maximum combined maximum pumping rate of 550 gallons per minute (gpm).

Well Name	Well Unique Number	Maximum Individual Well Rates
Well 5	607153	200
Well 6	590447	200
Well 7	721689	200

Method of Measurement	Flow meters with totalizers
Means of Distribution	Pumped water is conducted from the wells to the City treatment plant by means of a 8-inch diameter buried pipe.
Legal Description:	A portion of and T102N R42W SEC. 18, Nobles County.
Schedule of Appropriation:	The appropriation will be continuous.
Total Annual Use:	Total annual use is not expected to exceed 60.5 million gallons per year (mgy).
Discharge:	Discharge point is located at the City Waste Water Ponds located T102N R43W Sec. 12 in Nobles County Minnesota.
Statement of Justification:	The appropriation of water from this source is used as a public drinking water supply.

Appendix A



Scale: 1" = 1430 '

Source: Terrain Navigator/MAP TECH

LIESCH Hydrogeologists ? Engineers ? Environmental Scientists

6000 Gisholt Dr, Suite 203
Madison, WI 53713
(608) 223-1532

13400 15th Avenue N
Minneapolis, MN 55441
(763) 489-3100

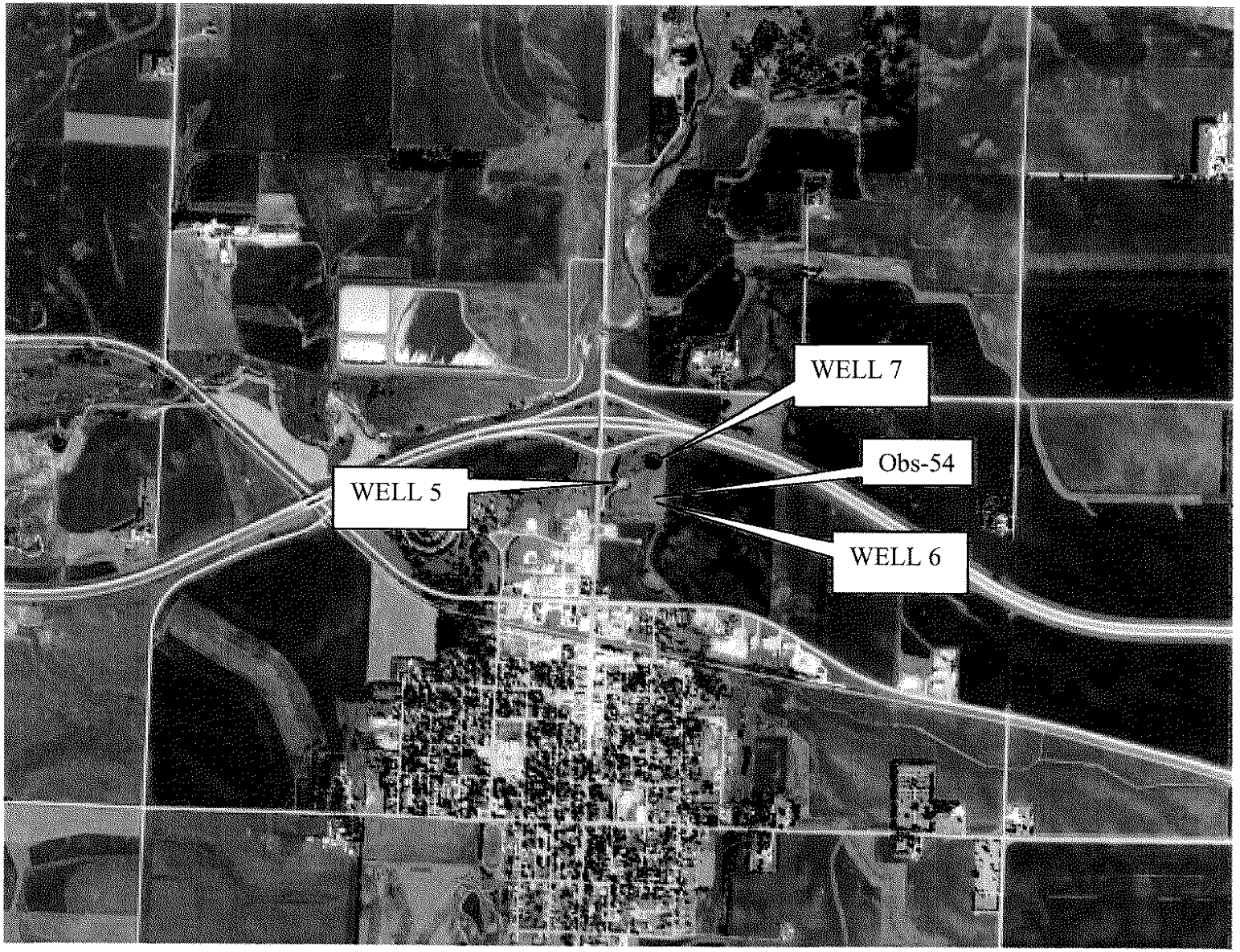
4300 N Miller Rd, Suite 200
Scottsdale, AZ 85251
(480) 421-0853

Lincoln Pipestone Rural Water

Dec 06

Adrian Well 7
Site Location Map

Figure #1



Source: 2004 Orthophoto Nobles County

LIESCH Hydrogeologists ? Engineers ? Environmental Scientists

6000 Gisholt Dr, Suite 203
Madison, WI 53713
(608) 223-1532

13400 15th Avenue N
Minneapolis, MN 55441
(763) 489-3100

4300 N Miller Rd, Suite 200
Scottsdale, AZ 85251
(480) 421-0853

Lincoln Pipestone Rural Water

Dec 06

Adrian Well 7
Air Photo Location Map

Figure #2

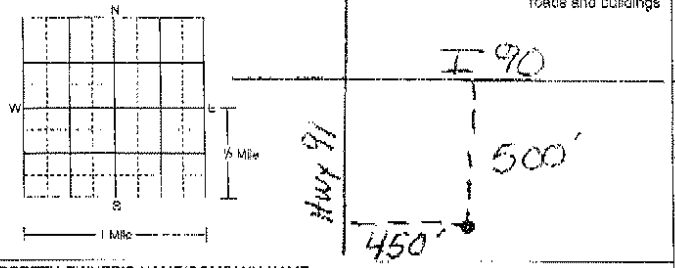
Appendix B

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
Minnesota Statutes, Chapter 103I

MINNESOTA UNIQUE WELL NO. 721689

WELL LOCATION
County Name: Nobles
Township Name: Adrian | Township No.: 102N | Range No.: 42W | Section No.: 18 | Fraction: ¼ NW ¼ ¼
GPS LOCATION: Latitude N degrees 43 minutes 38 seconds 555 | Longitude W degrees 95 minutes 55 seconds 824
House Number, Street Name, City, and Zip Code of Well Location: Well #7 Adrian 56110
or Fire Number:

Show exact location of well in section grid with "X". Sketch map of well location. Showing property lines, roads and buildings.



PROPERTY OWNER'S NAME/COMPANY NAME
City of Adrian
Property owner's mailing address if different than well location address indicated above.
C/O Donna Kay
City Hall
310 Main Ave.
PO Box 187
Adrian, MN 56110

WELL OWNER'S NAME/COMPANY NAME
Same as above
owner's mailing address if different than property owners address indicated above.
Same as above

GEOLOGICAL MATERIALS	COLOR	HARDNESS OF MATERIAL	FROM	TO
Top Soil	Brown	M	0	3
Sand & Gravel	Brown	S	3	8
Clay	Brown	M	8	8½
Sand & Gravel	Brown	S	8½	33
Clay	Gray	M	33	43

Use a second sheet, if needed

REMARKS, ELEVATION, SOURCE OF DATA, etc.

MINN. DEPT OF HEALTH COPY 721689

IF 140-P020

WELL DEPTH (completed) 42 ft. | **Date Work Completed** 8-2-06

DRILLING METHOD
☐ Cable Tool ☐ Driven ☐ Dug
☐ Auger ☒ Rotary ☐ Jetted
☐

DRILLING FLUID Bentonite | **WELL HYDROFRACTURED?** ☐ Yes ☒ No FROM ft. TO ft.

USE
☐ Domestic ☐ Monitoring ☐ Heating/Cooling
☐ Noncommunity PWS ☐ Environ. Bore Hole ☐ Industry/Commercial
☒ Community PWS ☐ Irrigation ☐ Remedial
☐ Dewatering ☐

CASING Drive Shoe? ☐ Yes ☒ No
☒ Steel ☐ Threaded ☐ Welded
☐ Plastic ☐

CASING DIAMETER		WEIGHT		HOLE DIAM.	
18 in. to	23 ft.	104.67 lbs./ft.		23 1/2 in. to 23 ft.	
16 in. to	33-42 ft.	Sump lbs./ft.		18 in. to 43 ft.	
in. to	ft.	lbs./ft.		in. to	ft.

SCREEN Make: Johnson
Type: Stainless Steel Diam. 16" PS
Slot/Gauze 60 Length 10' with 5' Leader
Set between 23 ft. and 33 ft. FITTINGS: Figure K Packer

OPEN HOLE FROM ft. TO ft.

STATIC WATER LEVEL 10 ft. ☒ below ☐ above land surface Date measured 8-2-06

PUMPING LEVEL (below land surface) 27 ft. after 72 hrs. pumping 300 g.p.m.

WELL HEAD COMPLETION
☐ Pitless adapter manufacturer Model
☐ Casing Protection ☐ 12 in. above grade
☐ At grade (Environmental Wells and Boring ONLY)

GROUTING INFORMATION
Well grouted ☒ Yes ☐ No
Grout material ☒ Neat cement ☐ Bentonite ☐ Concrete ☐ High Solids Bentonite
from 0 to 23 ft. 1 ☒ yds. ☐ bags
from to ft. ☐ yds. ☐ bags
from to ft. ☐ yds. ☐ bags

NEAREST KNOWN SOURCE OF CONTAMINATION feet direction type
Well disinfected upon completion ☒ Yes ☐ No

PUMP
☒ Not installed Date installed
Manufacturer's name
Model number HP Volts
Length of drop pipe ft. Capacity g.p.m
Type: ☐ Submersible ☐ L.S. Turbine ☐ Reciprocating ☐ Jet ☐

ABANDONED WELLS
Does property have any not in use and not sealed well(s) ☐ Yes ☒ No

VARIANCE
Was a variance granted from the MDH for this well? ☐ Yes ☒ No TN#

WELL CONTRACTOR CERTIFICATION
This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

Mark J. Traut Wells, Inc. 1404
Licensed Business Name *Lic. or Reg. No.*

David Traut 10 25 06
Authorized Representative Signature *Date*

Robbie Terres & Nate Stebbins
Name of Driller

HL-01805 08 (Rev. 8/03)

Appendix 2

Well 7 Installation Report

ADRIAN, MINNESOTA
WELL 7 CONSTRUCTION
AND TESTING PROCEDURES

Prepared for:

LINCOLN PIPESTONE RURAL WATER
LAKE BENTON, MINNESOTA

Prepared by:

LIESCH ASSOCIATES, INC.
13400 15TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55441
(763) 489-3100

DECEMBER 2006
PROJECT NUMBER: 13068.00

TABLE OF CONTENTS

APPENDICES

1.0 INTRODUCTION

Liesch Associates, Inc. (Liesch) has been retained by Lincoln Pipestone Rural Water (LPRW) to provide assistance with the construction and testing of Well 7, located in Adrian, Minnesota. This report presents a summary and discussion of the Well 7 construction and aquifer testing procedures.

2.0 BACKGROUND

Well 7 was constructed in the City well field located on the north side of Adrian and just south of Interstate Highway 90, as indicated on the Site Location Map located in **Appendix A**, as **Figure 1.** Adrian City Well 5 and Well 6 were installed in this well field during 1984 and 1985. The location for Well 7 was based on the results of test holes that were advanced in 1984. The Minnesota Department of Health (MDH) reviewed the plans, specifications and site location. A copy of the MDH review, dated December 6, 2004 is included as **Appendix B.**

2.1 SITE HYDROGEOLOGY AND PRODUCTION WELL SUMMARY

The aquifer being utilized by Wells 5, 6 and 7 is an unconfined aquifer. The size and extent of the aquifer has not been fully identified. Well and test hole logs indicate that the aquifer formation at the site consists of gravelly sand. The top of the aquifer is located at ground level and may extend to depths up to approximately 42 feet below land surface depending upon the specific location. This aquifer is generally considered to consist of glacial outwash deposits that occur within the Kanaranzi Creek Watershed. The sediments tend to be poorly sorted and exhibit a wide range in grain size. The saturated portion of the aquifer generally consists of fine to coarse sand with trace amounts of gravel. The basic information regarding the production wells at the City well field are included below as **Table 1.**

Table 1 Production Well Summary

	Well 5	Well 6	Well 7
Minnesota Unique Well No.	149184	149187	721689
Well Casing Diameter (inch)	12	12	18
Well Depth	*25.5	41.75	42
Static Level (feet)	**19.43	**17.62	**11.65
Pumping Rate (gpm)	136	176	200 (tested rate)

* From MN Well Record, original ground level prior to construction of flood prevention mound.
** Measured before the start of testing procedures at Well 7.

2.2 WELL CONSTRUCTION AND DEVELOPMENT

Well 7 was installed and developed by Mark J. Traut Well Company, Inc. (Traut Wells) Waite Park, Minnesota. Development of the well was accomplished through the alternating use of high pressure water jetting and air lifting. The well is constructed with an 18-inch low carbon steel

casing which extends from about 2 feet above ground level to a depth of 42 feet below grade. A 10 foot length of continuous wound, 16-inch pipesize 304 stainless steel screen is set at a depth of 23 to 33 feet below ground level. A flush tube extension is included from 33 to 42 feet. The screen is sealed within the well casing by means of a neoprene K packer. The top five feet of screen from 18 to 23 feet consists of tightwind (zero slot) construction. The open portion of the well screen is constructed with 60 slot (0.060 inch) from 23 to 33 feet. A well construction diagram is included as **Figure 3** in **Appendix A**. The selection of the screen slot size was based upon a sieve analysis conducted by Traut Wells using cutting samples from the Well 7 pilot hole. A copy of the sieve analysis is provided in **Appendix C**.

3.0 PUMPING TEST SUMMARY

A 72 hour pumping test was conducted at Well 7 to verify aquifer parameters, well yield and to meet the Minnesota Department of Health's guidelines for testing an unconfined aquifer. Water levels were measured before, during and after pumping at Wells 5, 6, 7 and a two inch observation well located 54 feet north of Well 6, designated as Obs-54. Electronic water level indicators and pressure transducer/data loggers were used to collect water level information.

3.1 PUMPING TEST AT WELL 7

Well 7 was pumped for a period of 72 hours, commencing at 1:15 pm on October 9, 2006 and ending at 1:15 pm on October 12, 2006. Well 7 pumped at an average rate of 200 gpm. During the pumping test, both Wells 15 and 16 were allowed to operate in order to meet the City's water requirements. A tabulation of pumping rates, water level measurements and calculated drawdown is provided on **Table 3**. The field data sheets of the electronic hand measurements are included as **Appendix E**. Selected graphical plots of the drawdown and recovery data are included in **Appendix F**.

Table 3 Water Level Summary

Well Designation	Well 7	Well 5	Well 6	Obs-54
Distance from Well 7	0	568	490	436
Static Level	11.65	19.43	17.62	14.85
Water level at 1hour	24.40	20.16	17.65	14.84
Water level at 1 day	26.18	19.76	18.11	15.32
Water level at 2 days	26.86	20.20	17.88	15.17
Water level at 3 days	27.37	19.96	17.96	15.26
Water level decline at 3 days	15.72	0.53	0.34	0.41
Specific Capacity at 72 hours	12.7			
Recovery Level at 1 hour	14.48	19.92	17.97	15.27

Note: all measurement are in feet.

The data loggers installed during the testing procedures included In-situ's Mini Troll™ and On-Site's Hobo™. The access at Well 5 would not accommodate safe installation and retrieval of a temporary pressure transducer/data logger, therefore an electronic hand held water level indicator was used to collect Well 5 water levels. The data logging equipment utilized for this test consisted of non-vented absolute equipment. Detailed barometric information for the period of the test was obtained from a weather reporting station designated as KMNLUVER3 located in Luverne, MN. A chart of the barometric information is included as the last chart located in **Appendix F**. The water levels reviewed for this report have not been corrected for the observed barometric changes. Copies of the electronic data are available as Microsoft Excel files upon request.

3.2 AQUIFER CHARACTERISTICS

Two commonly sought aquifer characteristics are transmissivity and storativity of the aquifer formation. Transmissivity is a measure of an aquifers ability to transmit water and is defined as the rate of flow through a vertical section of aquifer of unit width (extending the full saturated height of the aquifer), under a hydraulic gradient of one. The higher the transmissivity, the more easily water can move through the aquifer. Storativity is a measure of the amount of water stored in an aquifer and is defined as the volume of water released or taken into storage per unit surface area of aquifer per unit change in head. The larger the storativity value, the higher the volume of water available per unit volume of aquifer. These two coefficients are physical properties of the aquifer material. Values of transmissivity and storativity for the water table aquifer have been calculated from the pumping test data. These values are presented in **Table 4**.

Table 4 – Calculated Aquifer Coefficients

Source:	Transmissivity (g/d/ft.)	Storativity
Jacob's Plots		
Well 7 Residual Recovery	5617	5.27x10-3
Theis Curve Match		
Well 7 Residual Recovery	4775	5.01x10-3

Notes: Transmissivity, gallons per day per foot (g/d/ft) of aquifer width.

The aquifer transmissivities are computed from the recovery data at Well 7 are thought to be the most representative of the aquifer's response under water table conditions.

3.3 WELL INTERFERENCE

The results of the monitoring conducted during the test at Well 7, indicates that the short term effects of pumping at the existing production wells appears to be minor. Direct calculation of the amount of interference drawdown from Well 7 at the other monitored wells is hindered by the

effects from routine operation of Wells 5 and 6 during the test. The total water level over the period of pumping at Well 7 (Table 3) indicates approximately 0.5 foot of water level change. Based upon these observations, well interference effects do not appear to be detrimental at current pumping rates under existing conditions. Should the City consider significant changes in appropriation in the future, we would recommend longer term water level monitoring to be conducted to asses potential increases in well interference. Likewise, care should be taken to monitor water levels during periods of draught which could affect the available water in the aquifer.

3.4 SPECIFIC CAPACITY

The specific capacity of a well is expressed as gallons per minute per foot of drawdown observed in the well. After 3 days of pumping at 200 gpm, the specific capacity at Well 7 of 12.7 gpm/ft of drawdown was observed.

3.5 SELECTION OF PUMP SETTING

The pumping level at the end of 3 days of pumping at a constant rate of 200 gpm was 27.37 feet below the top of casing and approximately 4.37 feet inside the open portion of the well screen. The top of the open portion of the well screen starts at 23 feet below land surface and ends at 33 feet. This well is designed with a 9 foot section of well casing from 33 to 42 feet. This area is intended to serve as a sump to allow the pump's intake to be placed beneath the open portion of the well screen to maximize the amount of available water at Well 7.

To avoid increased velocities, which can cause higher incrustation and corrosion rates, the submersible pump intake should not be installed within the open well screen area. The hydraulic characteristics of Well 7 do not allow sufficient available drawdown to safely support pumping at a rate higher than 200 gpm. A pumping rate of 150 gpm is recommended to allow the pumping water level to remain above the open portion of the well screen. The actual pump and pump setting selection should allow for variations in seasonal water levels within the aquifer and meet the manufacturer's water level specifications for the unit to be installed. Prior to installation of the pump, the pump contractor should conduct field verification measurements of the top of screen location to prevent potential damages during installation procedures.

4.0 WATER QUALITY DATA

Water samples were collected at Well 7 near the end of the 3rd day of pumping. The samples were packed in ice and kept cold until received by Pace Laboratories, Inc. A Summary of the results is provided as **Table 5**. Pace's water quality report is included in **Appendix G**. Traut Wells Inc. also collected a water sample for coliform bacteria and nitrates, the results are included on Table 5 and the report is located in **Appendix H**. Review of the water quality report indicates an acceptable quality of water. The Pace bacteria sample indicated a positive result

where as, the sample taken at the same time by Traut indicated a negative result. Since the well was treated with a disinfectant following removal of the test pump, additional bacteria sampling is not required until the well and connecting distribution system are tested.

Table 5 Water Quality Summary

	PACE Lab Well 7 10/12/2006	Traut Wells Well 7 10/12/2006		MCL	
Parameter			**Units**		**Units**
Wet Chemistry					
pH	7.8		pH units	6.5-8.5	pH units
Akalinity, Total	244		mg/l		
Solids, Total dissolved	632		mg/l		
Colliform	Present	Absent			
Inorganic Chemistry					
Nitrate	8.6	7.01	mg/l	10	mg/l
Sulfate	48.5		mg/l	(500 Secondary)	mg/l
Chloride	150		mg/l		
Fluoride	0.23		mg/l	4	mg/l
Metals					
Arsenic	<10		ug/l	10	ug/l
Barium	0.0642		mg/l	2	mg/l
Cadmium	<1		ug/l	5	ug/l
Chromium	<10		ug/l	100	ug/l
Iron	<50		ug/l	(300 Secondary)	ug/l
Lead	<3		ug/l	15	ug/l
Magnesium	29.7		mg/l		
Manganese	8.4		ug/l	(50 Secondary)	ug/l
Mercury	<0.2		ug/l	20	ug/l
Selenium	20.9		ug/l	50	ug/l
Silver	<10		mg/l	50	ug/l
Organic Chemistry					
8260 VOC's	ND		ug/l	various compounds	ug/l
PCB	ND		ug/l	various compounds	ug/l
Pesticides	ND		ug/l	various compounds	ug/l
Radiological Chemistry					
Gross Beta	3.25		pCi/l	4*	mrem
Gross Alpha	6.68		pCi/l	15	pCi/l
Radon 222	541		pCi/l	300**	pCi/l

Notes: ND = no detection for various compounds, < (less than) indicates the result is below the detection limit. * mrem is not directly convertible to pCi/l, generally levels above 15 pCi/l should be further reviewed. **300 pCi/l is currently a proposed MCL for Radon 222 in water.

5.0 CONCLUSIONS AND RECOMMENDATIONS

- Based upon the pumping test, Well 7 appears to have sufficient available drawdown to support a recommended routine operating rate of 150 gpm. While higher a rate of 200 gpm can be achieved for short durations, such as the 72 hour test, the amount of available water above the pump intake is limited and should be monitored periodically to prevent potential damage to the pump and to maintain pumping water levels above the open portion of the well screen. Long term pumping rates may be adversely affected by barrier boundary conditions encountered during longer pumping periods and at higher rates and by declines in well efficiency caused by mineral encrustation or bio–fouling of the well screen. The ultimate selection of the pump setting and pumping rate should take full advantage of the conditions and include allowances for seasonal fluctuations in water levels and the manufacturer's requirements for pump submergence. Routine measurements of specific capacity should be conducted and well maintenance procedures conducted if significant decline in specific capacity is observed.

- The routine operation of Well 7 is expected to produce minimal interference effects. Further review of potential well interference impacts may be required if pumping at the well field is significantly increased from the requested amended annual appropriation of 60.5 million gallons per year.

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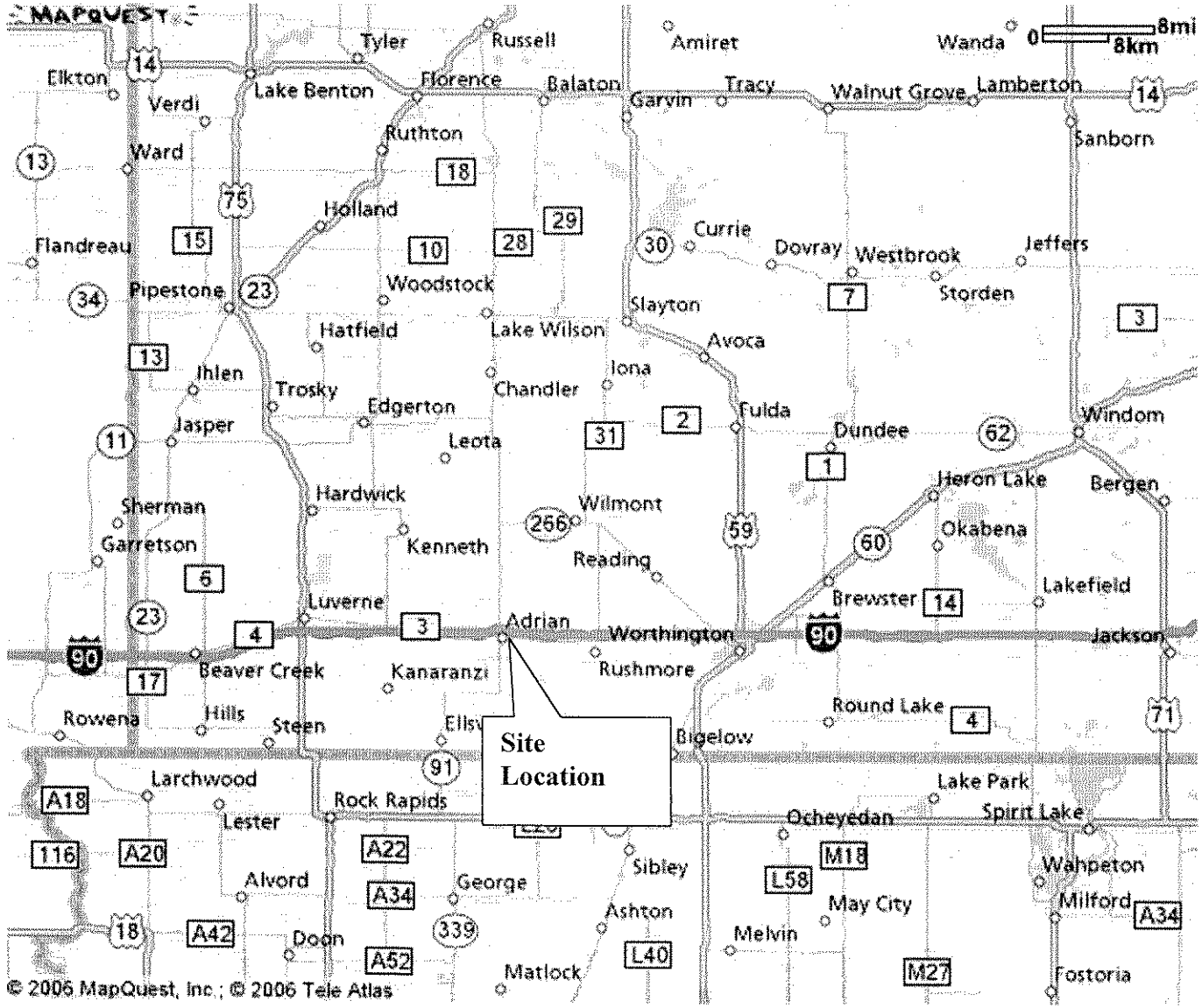
Appendix A



Scale: not to scale

Source: Map Quest.com

LIESCH Hydrogeologists • Engineers • Environmental Scientists

6000 Gisholt Dr, Suite 203
Madison, WI 53713
(608) 223-1532

13400 15th Avenue N
Minneapolis, MN 55441
(763) 489-3100

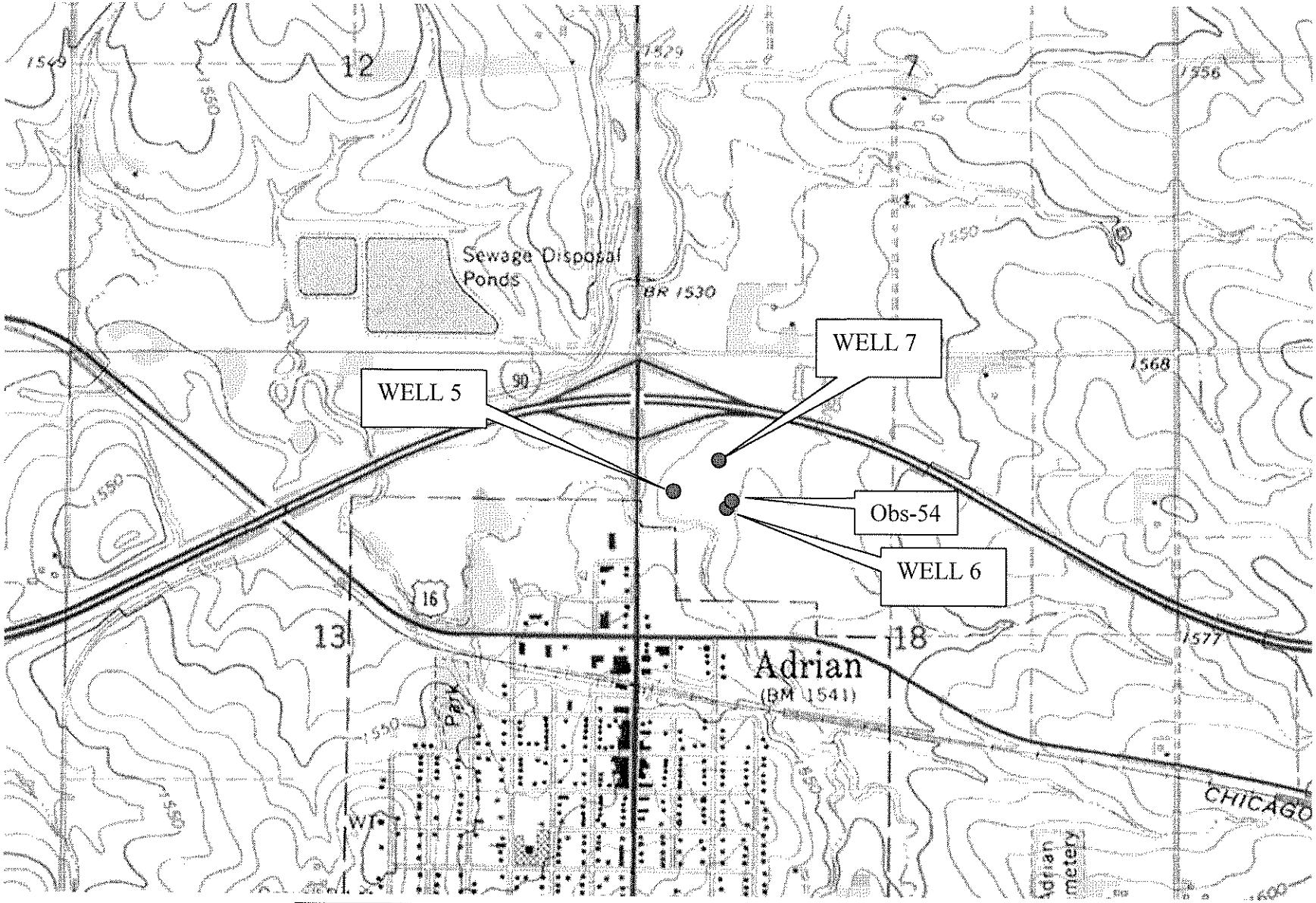
4300 N Miller Rd, Suite 200
Scottsdale, AZ 85251
(480) 421-0853

Lincoln Pipestone Rural Water

Nov 06

Adrian Well 7
Site Location Map

Figure #1



Scale: 1" = 1430 '

Source: Terrain Navigator/MAP TECH

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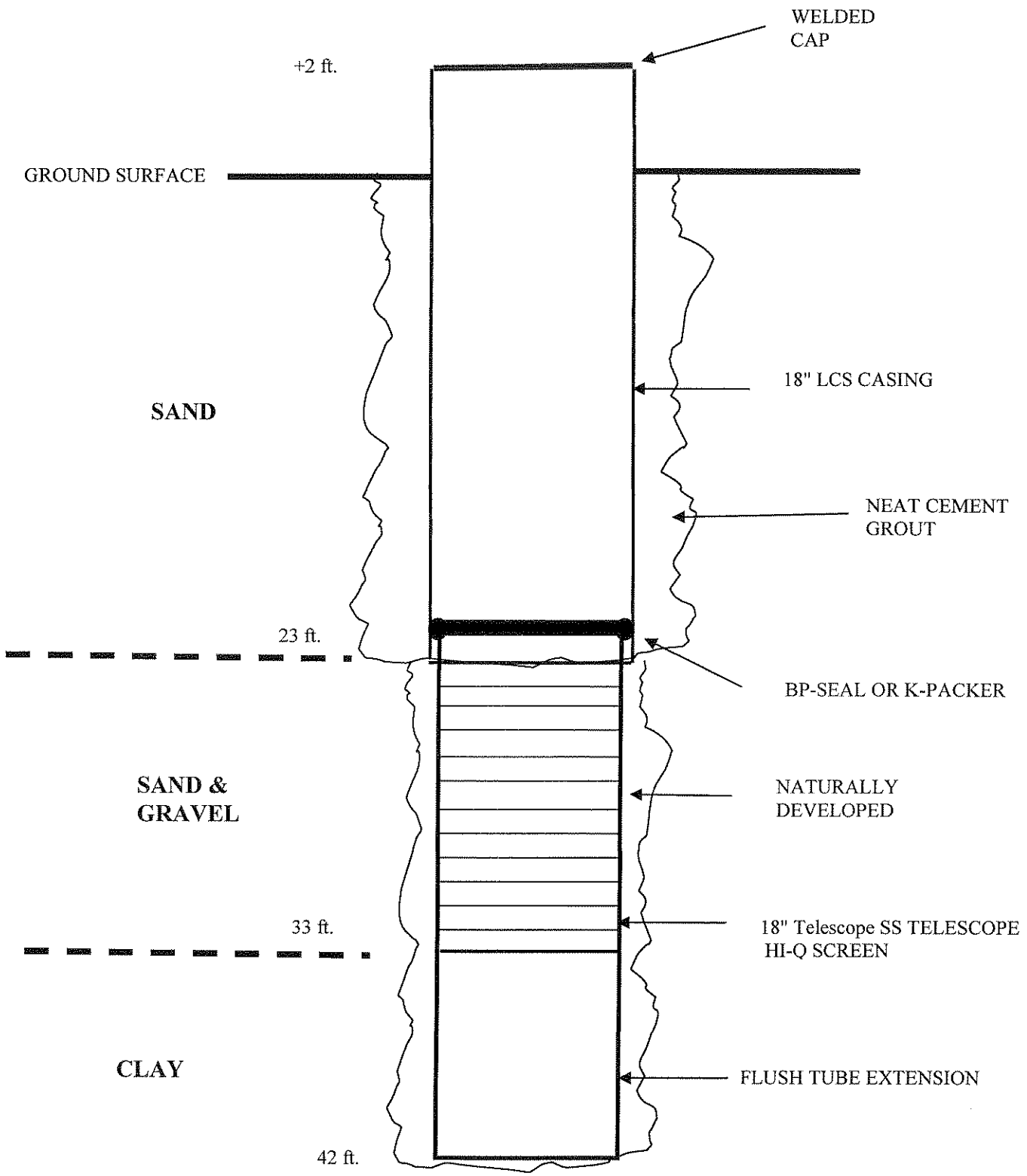
Lincoln Pipestone Rural Water

Nov 06

Adrian Well 7
Site Map

Figure #2



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11/15/2006

LIESCH Hydrogeologists • Engineers • Environmental Scientists

6000 Gisholt Dr, Suite 203
Madison, WI 53713
(608) 223-1532

13400 15th Avenue N
Minneapolis, MN 55441
(612) 559-1423

2700 N Central Ave, Suite 890
Phoenix, AZ 85004
(602) 650-2815

ADRIAN, MINNESOTA	Nov. 06
Test Production Well 7 Construction Diagram	**Figure 3**

Appendix C

U.S. FILTER JOHNSON SCREENS
651-636-3900
1-800-833-9473
FAX 651-638-3171 or 1-800 328-9891
P.O. Box 64118
St. Paul, MN 55164

SAND ANALYSIS

BY:

SEND SAMPLES TO: 1950 OLD HWY 8, NEW BRIGHTON, MN 55112

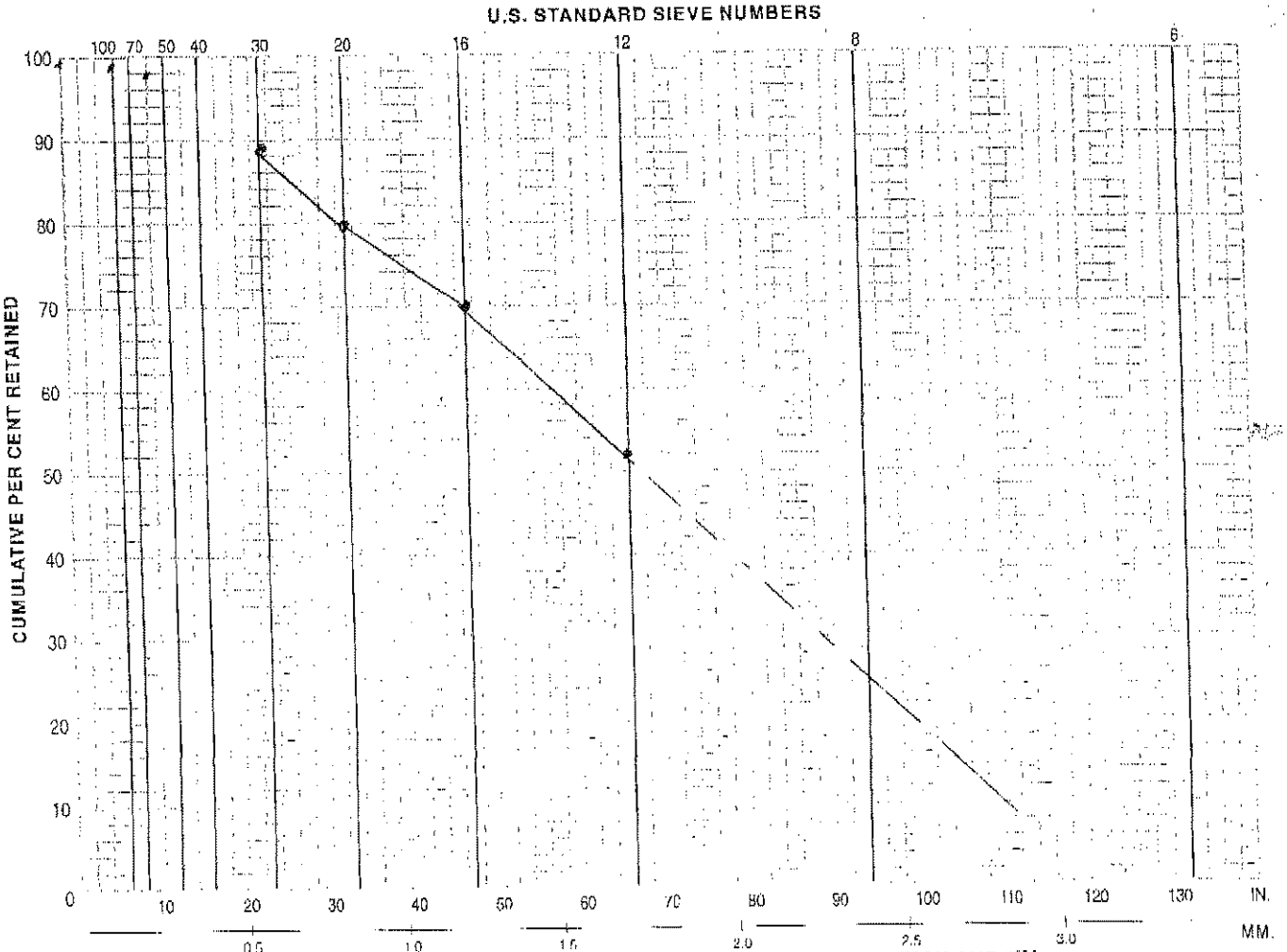
Job Name _____ Date 7-26-06

City Adrian State _____ Zip _____

Driller _____ Phone _____

Engineer _____ Phone _____

Remarks _____



U.S. SIEVE NO.	SLOT OPENING IN.	SLOT OPENING MM	SAMPLE DEPTHS	
6	.132	3.36		
8	.094	2.38		
12	.066	1.68	260	52%
16	.047	1.19	350	70%
20	.033	0.84	404	80%
30	.023	0.60	449	89%
40	.016	0.42		
50	.012	0.30	494	98%
70	.008	0.21		
100	.006	0.15	499	99%
			500	100%

Comments 30-33

SCREEN RECOMMENDATIONS: DIAM. _____

SLOT	SETTING	LENGTH

SO MANY CONSIDERATIONS ENTER INTO THE MAKING OF A GOOD WELL THAT, WHILE WE BELIEVE SLOT SIZES FURNISHED OR RECOMMENDED FROM SAND SAMPLES ARE CORRECT WE ASSUME NO RESPONSIBILITY FOR THE SUCCESSFUL OPERATION OF ANY WELL

U.S. FILTER JOHNSON SCREENS
651-636-3900
1-800-833-9473
FAX 651-638-3171 or 1-800-328-9891
P.O. Box 64118
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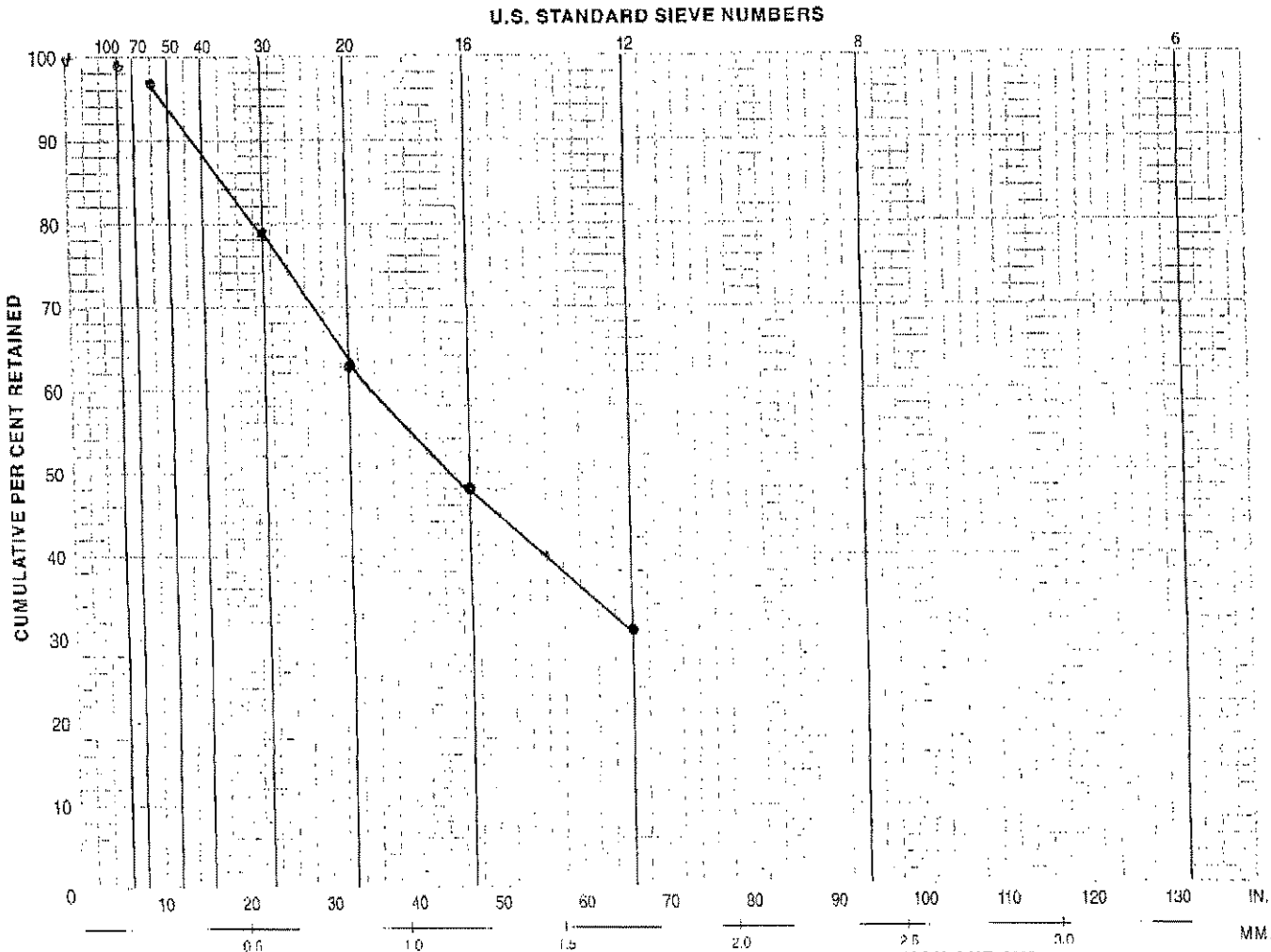
Remarks _____



U.S. SIEVE NO.	SLOT OPENING IN.	SLOT OPENING MM	SAMPLE DEPTHS	
6	.132	3.36		
8	.094	2.38		
12	.066	1.68	157	31%
16	.047	1.19	244	48%
20	.033	0.84	319	63%
30	.023	0.60	397	79%
40	.016	0.42		
50	.012	0.30	484	97%
70	.008	0.21		
100	.006	0.15	498	99%
			500	100%

Comments 25-42 - 30-42

SCREEN RECOMMENDATIONS: DIAM. _____ _____

SLOT	SETTING	LENGTH

SO MANY CONSIDERATIONS ENTER INTO THE MAKING OF A GOOD WELL THAT, WHILE WE BELIEVE SLOT SIZES FURNISHED OR RECOMMENDED FROM SAND SAMPLES ARE CORRECT, WE ASSUME NO RESPONSIBILITY FOR THE SUCCESSFUL OPERATION OF ANY WELL

F 46 R7 97

U.S. FILTER JOHNSON SCREENS
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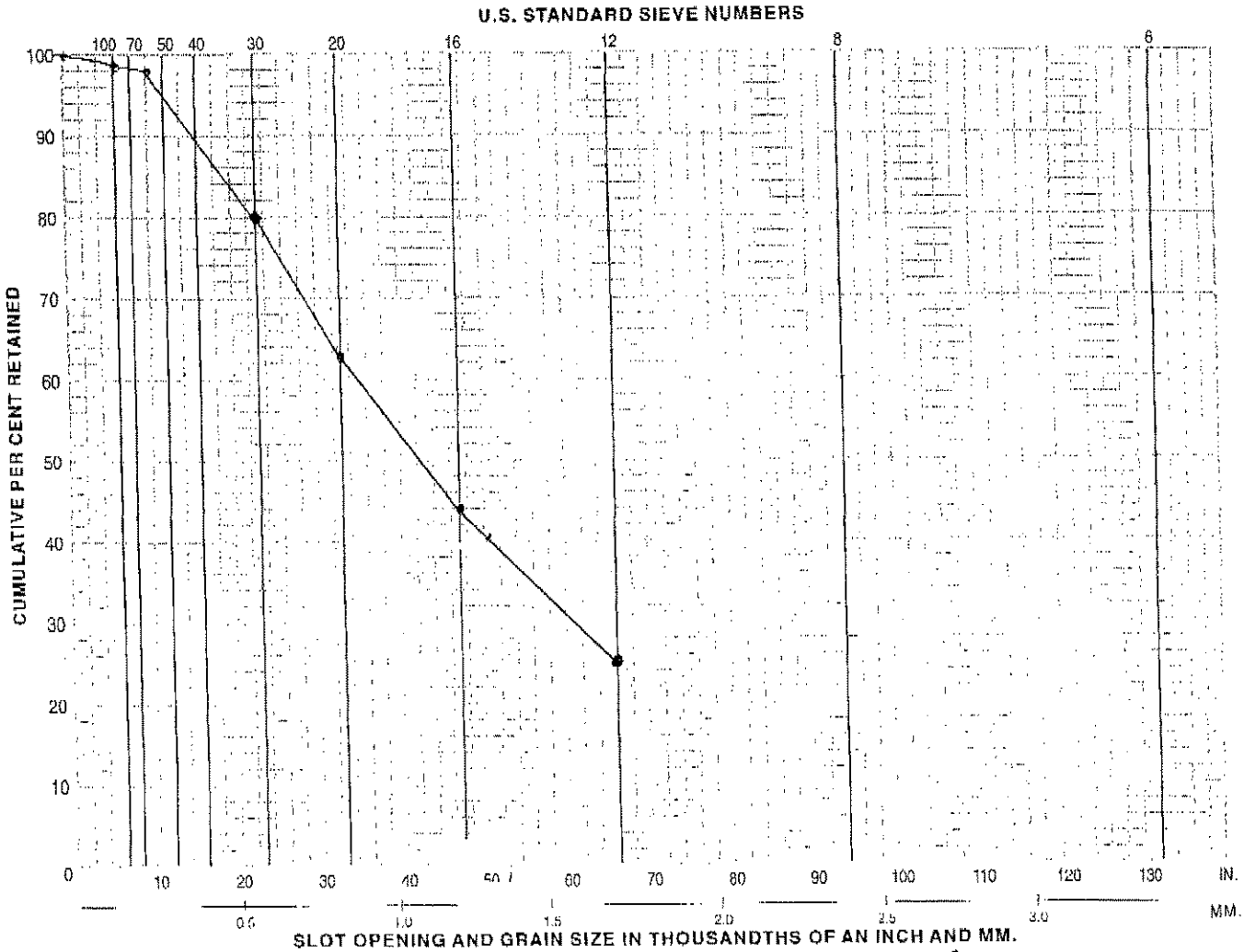
Remarks _____



U.S. SIEVE NO	SLOT OPENING IN.	SLOT OPENING MM.	SAMPLE DEPTHS			
6	.132	3.36				
8	.094	2.38				
12	.066	1.68	126	25%		
16	.047	1.19	224	44%		
20	.033	0.84	316	63%		
30	.023	0.60	403	80%		
40	.016	0.42				
50	.012	0.30	491	98%		
70	.008	0.21				
100	.006	0.15	498	99%		
			500	100%		

Comments 20th - 25th

SCREEN RECOMMENDATIONS: DIAM. _____

SLOT	SETTING	LENGTH

Appendix D

MINNESOTA DEPARTMENT OF HEALTH
WELL AND BORING RECORD
Minnesota Statutes, Chapter 1031

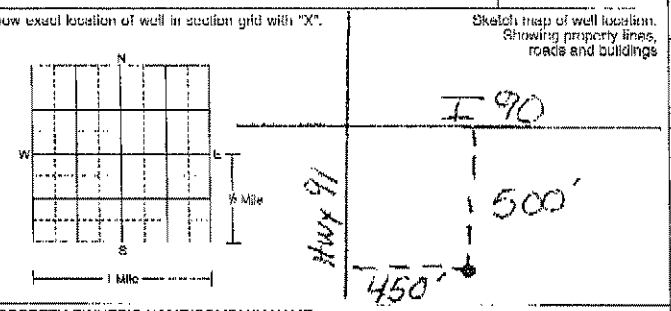
MINNESOTA UNIQUE WELL NO. 721689

WELL LOCATION
County Name: Nobles
Twp Name: Adrian | Township No.: 102N | Range No.: 42W | Section No.: 18 | Fraction: ¼ NW ¼ ¼

GPS LOCATION: Latitude N degrees 43 minutes 38 seconds 555 | Longitude W degrees 95 minutes 55 seconds 824

House Number, Street Name, City, and Zip Code of Well Location: Well #7 Adrian 56110 | or Fire Number:

Show exact location of well in section grid with "X". Sketch map of well location. Showing property lines, roads and buildings



PROPERTY OWNER'S NAME/COMPANY NAME
City of Adrian
Property owner's mailing address if different than well location address indicated above.
C/O Donna Kay
City Hall
310 Main Ave.
PO Box 187
Adrian, MN 56110

WELL OWNER'S NAME/COMPANY NAME
Same as above
owner's mailing address if different than property owners address indicated above.
Same as above

GEOLOGICAL MATERIALS	COLOR	HARDNESS OF MATERIAL	FROM	TO
Top Soil	Brown	M	0	3
Sand & Gravel	Brown	S	3	8
Clay	Brown	M	8	8½
Sand & Gravel	Brown	S	8½	33
Clay	Gray	M	33	43

Use a second sheet, if needed

REMARKS, ELEVATION, SOURCE OF DATA, etc.

MINN. DEPT OF HEALTH COPY 721689

IC 140-0020

WELL DEPTH (completed) 42 ft. | **Date Work Completed** 8-2-06

DRILLING METHOD ☐ Cable Tool ☐ Driven ☐ Dug ☐ Auger ☒ Rotary ☐ Jetted ☐

DRILLING FLUID Bentonite | **WELL HYDROFRACTURED?** ☐ Yes ☒ No FROM ft. TO ft.

USE ☐ Domestic ☐ Monitoring ☐ Heating/Cooling ☐ Noncommunity PWS ☐ Environ. Bore Hole ☐ Industry/Commercial ☒ Community PWS ☐ Irrigation ☐ Remedial ☐ Dewatering ☐

CASING ☒ Steel ☐ Plastic | Drive Shoe? ☐ Yes ☒ No ☐ Threaded ☐ Welded

HOLE DIAM.

CASING DIAMETER	WEIGHT	HOLE DIAM.
18 in. to 23 ft.	104.67 lbs./ft.	23 1/2 in. to 23 ft.
16 in. to 33-42 ft. Sump	lbs./ft.	18 in. to 43 ft.
in. to ft.	lbs./ft.	in. to ft.

SCREEN Make: Johnson | Type: Stainless Steel | Diam. 16" PS | Slot/Gauze: 60 | Length: 10' with 5' Leader | Set between 23 ft. and 33 ft. | FITTINGS: Figure K Packer

OPEN HOLE FROM ft. TO ft.

STATIC WATER LEVEL 10 ft. ☒ below ☐ above land surface Date measured 8-2-06

PUMPING LEVEL (below land surface) 27 ft. after 72 hrs. pumping 300 g.p.m.

WELL HEAD COMPLETION
☐ Pitless adapter manufacturer Model
☐ Casing Protection ☐ 12 in. above grade
☐ At grade (Environmental Wells and Boring ONLY)

GROUTING INFORMATION
Well grouted ☒ Yes ☐ No
Grout material ☒ Neat cement ☐ Bentonite ☐ Concrete ☐ High Solids Bentonite
from 0 to 23 ft. 1 ☒ yds. ☐ bags
from to ft. ☐ yds. ☐ bags
from to ft. ☐ yds. ☐ bags

NEAREST KNOWN SOURCE OF CONTAMINATION feet direction type
Well disinfected upon completion ☒ Yes ☐ No

PUMP ☒ Not installed Date installed
Manufacturer's name
Model number HP Volts
Length of drop pipe ft. Capacity g.p.m
Type: ☐ Submersible ☐ L.S. Turbine ☐ Reciprocating ☐ Jet ☐

ABANDONED WELLS
Does property have any not in use and not sealed well(s) ☐ Yes ☒ No

VARIANCE
Was a variance granted from the MDH for this well? ☐ Yes ☒ No TN#

WELL CONTRACTOR CERTIFICATION
This well was drilled under my supervision and in accordance with Minnesota Rules, Chapter 4725. The information contained in this report is true to the best of my knowledge.

Mark J. Traut Wells, Inc. 1404
Licensed Business Name Lic. or Reg. No.

David Traut 10 25 06
Authorized Representative Signature Date

Robbie Terres & Nate Stebbins
Name of Driller

HIL-01206 08 (Rev. 5/02)

Appendix 3

Biological Survey Report Letter

Memo

TO: Scott Pearson, Liesch Associates, Inc.
13400 15th Ave North, Minneapolis, MN 55441
FROM: Dr. Patrick Ceas, 702 3rd Street West, Northfield, MN 55057
SUBJECT: Survey for Topeka shiners
DATE: 18 April 2005

Mr. Pearson,

On Friday April 15 Mr. Phil Delphey (U.S. Fish & Wildlife Service) and I surveyed the unnamed tributary of Kanaranzi Creek in Adrian, Minnesota. In an email from Phil (dated 3 March 2005) to you & Jay Frischman, Phil attached a map that delineated a 400m buffer around the location of the proposed Adrian Well #7, and he recommended that the entire length of the unnamed tributary within the buffer zone be surveyed to assess the suitability of habitat for Topeka shiners, and to try to find Topeka shiners.

Phil and I walked the entire length of this section of the unnamed tributary, from a small overflow dam located just upstream of the East Pearl Street bridge to downstream of the baseball fields that are located west of Hwy 91. We made observations on the stream condition (substrate type & condition; water quality; stream width, depth, flow; in-stream cover such as logs/vegetation; stream bank condition; and surrounding land use), and we sampled for fishes using a small mesh minnow seine (4' x 10', 1/8 inch mesh).

In determining whether suitable habitat existed for Topeka shiners we considered all nine of the "primary constituent elements" listed on pp. 44744-44745 of the Federal Register (Vol. 69, No. 143, Tuesday July 27, 2004) for the "Final Designation of Critical Habitat for the Topeka Shiner; Final Rule" (online at http://mountain-prairie.fws.gov/species/fish/shiner/FRtshinerfinalCH.pdf). These nine elements include: (1) streams most often with permanent flow but can become intermittent during dry periods; (2) side-channel pools and oxbows either seasonally connected to a stream or maintained by groundwater inputs; (3) streams and side channel pools with water quality necessary for unimpaired behavior, growth, and viability of all life stages; (4) living and spawning areas for adult Topeka shiners with pools or runs with water velocities less than 0.5 meters/second (approx. 20 inches/second) and depths ranging from 0.1 to 2.0 meters (approximately 4 to 80 inches); (5) living areas for juvenile Topeka shiners with water velocities less than 0.5 meters/second with depths less than 0.25 meters (approx. 10 inches) and moderate amounts of in-stream aquatic cover, such as woody debris, overhanging terrestrial vegetation, and aquatic plants; (6) sand, gravel, cobble, and silt substrates with amounts of fine sediment and substrate embeddedness that allows for nest building and maintenance of nests and eggs by native *Lepomis* sunfishes (green sunfish, orangespotted sunfish, longear sunfish) and Topeka shiners as necessary for reproduction, unimpaired behavior, growth, and viability of all life stages; (7) an adequate terrestrial, semi-aquatic, and aquatic invertebrate food base that allows for unimpaired growth, reproduction, and survival of all life stages; (8) a hydrologic regime capable of forming, maintaining, or restoring the flow periodicity, channel morphology, fish community composition, off-channel habitats, and habitat components described in the other

primary constituent elements; and (9) few or no nonnative predatory or nonnative competitive species present.

Most of the length of the tributary can be characterized as narrow flowing raceways with occasional riffles, and is not considered to offer suitable habitat for Topeka shiners. The downstream portion of the surveyed segment (as it flows by the baseballs fields) appears to be intermittent in nature, and the main channel contains substantial amounts of vegetation that are generally associated with an area that is only seasonally wet (this portion of the stream segment may be reduced to a trickle in the late summer months). There were no off-channel habitats of the type that are often associated with Topeka shiners. There were, however, two main-channel pools and two backwater pools that did appear to contain suitable habitat (as defined in the federal Register) for Topeka shiners.

Upon sampling these four pools we discovered Topeka shiners in every pool, including some rather large males who appear to be "gearing up" for the coming spawning season (i.e., they appeared to be in an overall healthy condition and were developing the small breeding tubercles that are found on breeding Topeka males). We also seined large numbers of brook stickleback and southern redbelly dace, two species that are generally associated with waters that have substantial groundwater recharge. The presence of these two species suggests that the pools may maintain relatively cool temperatures throughout the summer, and that these pools likely offer refuge to fishes (including Topeka shiners) during periods of low flow.

The four pools are circled in green on the accompanying map. One main-channel pool is located immediately downstream (north) of the East Pearl Street bridge, and the second is located along Hwy 91, slightly downstream of the "Adrian" sign. The two backwater pools are located just southwest of the I-90/Hwy 91 interchange.

If you have any questions concerning the discovery of Topekas shiners within this unnamed tributary of Kanaranzi Creek please contact me at you convenience.

Sincerely,

Patrick A. Ceas

Dr. Patrick Ceas
702 3rd Street West
Northfield, MN 55057
507-321-0379

Aerial map of the I-90/Hwy 91 intersection in Adrian, Minnesota.
The red circle indicates the approximate 400m buffer around the proposed Well #7, and the segments of the unnamed tributary that are circled in green indicate the pools that contained Topeka shiners.