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February 9, 2007

FILED²

FEB 09 2007

**Missouri Public
Service Commission**

Colleen M. Dale
Chief RLJ & Secretary of the Commission
Government Office Building
200 Madison Street
P.O. Box 360
Jefferson City, MO 65102

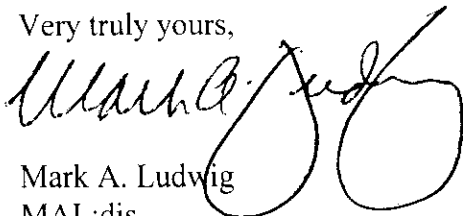
RE: Greater Jefferson City Construction Company, Inc., and Edward P. Storey v. Aqua Missouri, Inc.

Dear Ms. Dale:

Enclosed please find an original and eight copies of a Complaint I am filing on behalf of Greater Jefferson City Construction Company, Inc., and Edward P. Storey against Aqua Missouri, Inc.

Thank you for your attention to this. If you have any questions, please feel free to call.

Very truly yours,



Mark A. Ludwig

MAL:djs

Enclosure

cc: Aqua Missouri, Inc.
Marc Ellinger

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

**GREATER JEFFERSON CITY CONSTRUCTION
COMPANY, INC., and EDWARD P. STOREY,**

Complainants,

v.

AQUA MISSOURI, INC.

Respondent.

Case No. _____

COMPLAINT

1. Complainant Greater Jefferson City Construction Company, Inc., is a Missouri corporation with its principal place of business at 2916 Foxdale Drive, Jefferson City, Missouri 65109.

2. Complainant Edward P. Storey is an individual and a principal owner of Greater Jefferson City Construction Company, Inc., and resides at 2916 Foxdale Drive, Jefferson City, Missouri 65109.

3. Respondent, Aqua Missouri, Inc., 5402 Business Highway, Suite 3, Jefferson City, Missouri, 65102, is a public utility providing service to the service area where Greater Jefferson City Construction Company owns property, said property specifically known as Quail Valley Lake Subdivision.

4. As the basis of this Complaint, Complainants state as the following facts:

- a. Complainants corporately and individually are the developers of Quail Valley Lake Subdivision.
- b. Complainants began development of such subdivision in the early 1980s.
- c. The original construction of said subdivision utilized septic tanks to handle the waste generated from the homes. When 40 homes had been built and were occupied, the Complainant installed sewer lines and a waste water treatment plant. Said lines were extended so that they can provide service for all 102 platted lots within Quail Valley Lake Subdivision. In late 1993, the waste water facility plant and the collection system was handed over to Capital Utilities, Inc., the predecessor to respondent herein.

- d. In 2003, Complainant executed a Warranty Deed by Corporation deeding ownership of the sewer system of Quail Valley Lake Subdivision to Respondent. A copy of that deed is attached hereto as Exhibit 1.
- e. The wastewater treatment facility and collection system was designed to accommodate the wastewater loading generated by the complete development of Quail Valley Lake Subdivision. (See letter from Capital Utilities, Inc., marked Exhibit 2 and attached hereto.)
- f. 80 lots have been sold within Quail Valley Lake Subdivision, with homes being built and occupied upon 78 of those lots. All of the homes are connected to the sewer system.
- g. That since 2002 Complainants herein have sought approval from Respondent to attach more homes to the sewer system. Respondent has refused said request. Said refusal has cost Complainant numerous sales of lots as well as significant sums of money.
- h. The permit under which Aqua Missouri, Inc., operates the Quail Valley Lake Subdivision waste water treatment plant has no restrictions as to the number of homes that can be attached, but rather has restrictions for flow, sludge, biochemical oxygen demand, and total suspended solids, among other things. (A copy of said permit is attached hereto as Exhibit 3.)
- i. Complainant herein has met with the Department of Natural Resources, and the Department of Natural Resources has expressed no objection to the hookup of additional homes to the Quail Valley waste water treatment facility. (A copy of a letter reflecting a meeting at the Department of Natural Resources is attached hereto as Exhibit 4.)
- j. Based upon recommendations set forth in the letter from DNR, Complainant effected a bylaw change at Quail Valley Lake Subdivision wherein the Homeowners Association would take responsibility to pump septic tanks to remove solids every three years. (A copy of the Addendum to the Declaration of Covenants and Restrictions is attached hereto as Exhibit 5.)
- k. At the request of Complainants, numerous tests have been performed by engineers at ReSource Institute which show that the waste water treatment facility is operating well below the capacity set forth in the permit. Complainant has presented these studies to Respondent and has requested permission to attach additional homes, and the Respondent has refused to grant such request. (A report from the ReSource Institute is attached hereto as Exhibit 6.)

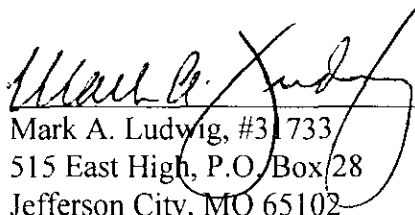
- l. Complainant herein no longer desires to be in the building business but, rather, wants to sell lots to other builders to build within Quail Valley Lake Subdivision. Complainant is unable to sell any lots because of Respondent's refusal to grant permission to hook up to the existing sewer system.
- m. Complainant has met with representatives of Aqua Missouri on several occasions and has attempted to reach an agreement but Respondent has refused.

5. The refusal of Respondent to grant the request of Complainant for additional hookups is arbitrary, capricious, and totally unsupported by any objective data.

6. Furthermore, Aqua Missouri, Inc., has refused to expand the existing waste water treatment facility if, in fact, it believes that the existing facility does not have the capacity to handle the additional proposed hookups when it is the Respondent's responsibility to do so.

WHEREFORE, Complainant now requests the following relief: An order from the Missouri Public Service Commission ordering Aqua Missouri, Inc., to allow hookups for an additional 22 lots so that Quail Valley Lake Subdivision can be completely developed or, in the alternative, to expand the waste water treatment facility to handle the additional 22 lots that are platted in the subdivision.

2-9-07
Date


Mark A. Ludwig, #31733
515 East High, P.O. Box 28
Jefferson City, MO 65102
Mark.l@carsoncoil.com
573-636-2177
573-636-7119 (fax)
ATTORNEYS FOR COMPLAINANTS

No. 200314705
Bk 487 Pg 109
State of Missouri
Cole County
RECORDED
Jul 24, 2003
8:04:51 AM
Larry D. Rademan,
Recorder of Deeds
Fees \$29.00

df
Deputy
Babst, Callaway
Clement + Zorn
PC

WARRANTY DEED BY CORPORATION

KNOW ALL MEN BY THESE PRESENTS, That Greater Jefferson City Const. Co., Inc., whose exact legal name as registered in the corporate records of the office of the Secretary of State of the State of Missouri is Greater Jefferson City Construction, Inc., **GRANTOR**, of the County of Cole, in the State of Missouri, a corporation organized and existing under the laws of the State of Missouri, party of the first part, in consideration of ONE DOLLAR AND ALL OTHER GOOD AND VALUABLE CONSIDERATION to be paid by AquaSource/CU, Inc., **GRANTEE**, of the County of Cole, in the State of Missouri, party of the second part, (Grantees mailing address: 5400 Business Highway 50, Jefferson City, Missouri 65109), the receipt of which is hereby acknowledged, and by virtue and in pursuance of a resolution of the Board of Directors of said party of the first part, does, by these presents, GRANT, BARGAIN, SELL, CONVEY AND CONFIRM unto the said party of the second part, and to the heirs, successors, and assigns of the party of the second part, the sewage treatment plant, and systems, and all sewer piping located and to be located on the utility easements for Quail Valley Lake Subdivision, per plat of record in Plat Book 11, page 138, Plat Book 11, page 388, Plat Book 11, page 396, and Plat Book 12, page 266, together with the following described property, tracts or parcels of land, lying, being and situate in the County of Cole and State of Missouri, to-wit:

Part of the Common Area, of Quail Valley, as per plat of record in Plat Book 11, Page 138, Cole County Records Office, being part of the Southeast Quarter of the Northeast Quarter of Section 30, Township 44 North, Range 12 West, Cole County, Missouri; more particularly described as follows: From the southwest corner of Lot 58, of said Quail Valley; thence S01°05'00"W, along the easterly line of Cantaberry Drive, 21.83 feet; thence S76°35'33"E, 221.64 feet; thence S82°46'40"E, 173.40 feet; thence S72°54'42"E, 126.09 feet; thence N89°41'35"E, 95.96 feet; thence S82°54'31"E, 168.16 feet to the point of beginning for this description; thence N07°51'51"E, 22.81 feet; thence S80°21'30"E, 62.71 feet; thence S07°51'51"W, 63.22 feet; thence N80°21'30"W, 62.71 feet; thence N07°51'51"E, 40.41 feet to the point of beginning. Containing 0.09 acres.

20 Foot Ingress and Egress Easement

A 20 foot wide strip of land across part of the Common Area, of Quail Valley, as per plat of record in Plat Book 11, Page 138, Cole County Records Office, being part of the Southeast Quarter of the Northeast Quarter of Section 30, Township 44 North, Range 12

EXHIBIT
1

West, Cole County, Missouri; lying 10 feet each side of and adjacent to the following described centerline: From the southwest corner of Lot 58, of said Quail Valley; thence S01°05'00"W, along the easterly line of Cantaberry Drive, 21.83 feet to the point of beginning for this centerline description; thence S76°35'33"E, 221.64 feet; thence S82°46'40"E, 173.40 feet; thence S72°54'52"E, 126.09 feet; thence N89°41'35"E, 95.96 feet; thence S82°54'31"E, 168.16 feet to the point of termination.

Bearings are based on said Quail Valley.

It is the intent and purpose of this deed to make the Grantee the owner of the complete sewer system for the Quail Valley Lake Subdivision.

TO HAVE AND TO HOLD the premises aforesaid, with all and singular the rights, privileges, appurtenances and immunities thereto belonging, or in anywise appertaining unto the said party of the second part, and unto its successors and assigns forever. The said party of the first part hereby covenanting that it is lawfully seized of an indefeasible estate in fee in the premises herein conveyed, that it has good right to convey the same; that the said premises are free and clear of any encumbrance done or suffered by it or those under whom it claims, and that it will Warrant and Defend the title of the said premises unto the said party of the second part, and unto its successors and assigns forever, against the lawful claims and demands of all persons whomsoever.

IN WITNESS WHEREOF, the Greater Jefferson City Construction, Inc., the said party of the first part has caused these presents to be signed by its President and attested by the Secretary, and its corporate seal to be hereto affixed, this 26 day of December, 2002.

GRANTOR:

GREATER JEFFERSON CITY CONSTRUCTION, INC.

By

Edward P. Storey, President

(Corporate Seal)

Attest:

JoAnne Storey

, Secretary

GREATER JEFFERSON CITY CONST. CO., INC.

By

Edward P. Storey, President

(Corporate Seal)

Attest:

JoAnne Storey

, Secretary

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

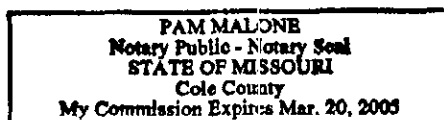
On this 26th day of December, 2002, before me personally appeared Edward P. Storey, to me personally known, who, being by me duly sworn, did say that he is President of Greater Jefferson City Construction, Inc., also known as Greater Jefferson City Const. Co., Inc., that the seal affixed to this instrument is the corporate seal of said corporation, and that the said instrument was signed and sealed in behalf of said corporation by authority of its Board of Directors.

And the said Edward P. Storey acknowledges said instrument to be the free act and deed of said Corporation.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal, at my office in county and state aforesaid, the day and year first above written.

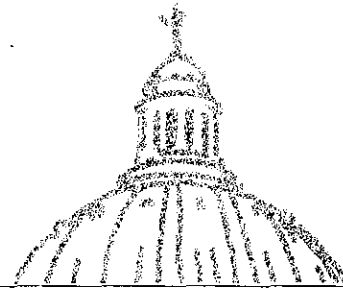
Pam Malone
Notary Public

My Commission Expires:



Capital Utilities, Inc.

P.O. Box 7017
Jefferson City, MO 65102
(314) 634-2699



September 28, 1993

Ed Storey
2916 Foxdale Drive
Jefferson City, MO 65109

File

Re: Sewer Service - Quail Valley Lake Subdivision

Dear Mr. Storey:

This letter is to inform you of the status of your wastewater collection and treatment system currently under construction in the Quail Valley Lake Subdivision and to also introduce you to Capital Utilities, Inc. We understand you have been provided on-going updates as to the status of the system through your Association newsletter. Hopefully, the following information will contain no major surprises.

The wastewater treatment facility located below the Lake is essentially completed and operating with such items as fencing and final landscaping yet to be completed. The facility is designed to accommodate the wastewater loading generated by the complete development of your subdivision. The treatment method will meet the regulatory requirements of the Missouri Department of Natural Resources (MDNR). The wastewater collection system is approximately 30% complete with homes on the west side of the Lake now being connected to the system. Construction conditions permitting, all residents should be served by the end of the year.

The system is being constructed by the developer of Quail Valley Lake, Mr. Ed Storey, who has retained local contractors for the actual installation of the collection piping and treatment system. Any questions relating to the construction as it affects your particular property should be directed to Mr. Storey. The system, when completed, will be owned and operated by Capital Utilities, Inc.

Capital Utilities is an investor owned, Missouri PSC regulated, water and sewer utility company which was initially formed in Cole County as the successor to the Cole County Regional Sewer District. We presently own and operate twenty-seven (27) small wastewater systems in Cole and southern Callaway Counties providing sewer service to approximately 700 residences. Our rates and operating rules are regulated by the Missouri Public Service Commission (PSC) with reporting requirements to both that agency and the MDNR.

EXHIBIT

2

The two (2) principals of Capital Utilities are local area residents with over forty (40) years of combined experience in the water and wastewater field. They are professionals in their field and can assure their customers that they will be dealt with in a courteous and professional manner. You are encouraged to contact our office with any questions or comments that you may have regarding your sewer service.

The following informational items are being provided in an attempt to address many of your questions:

- The sewer service charge as currently approved by the Missouri PSC is a flat rate of \$17.20 per month.
- Billing invoices are normally mailed on or about the 25th of each month for service to be provided the following month.
- Payment is due the 15th of the service month. A \$5.00 late penalty may be assessed to delinquent accounts.
- Your first billing should be for the month following the month in which you were actually connected.
- An "Application for Service" will accompany the initial billing invoice. Please complete and return with your first payment. The information on this form is important in that it allows us to contact the resident(s) in case of an emergency.
- The day to day operation of the facilities are performed by a local contract operations firm, Helms Environmental Services, Inc. Your inquiries to this address and/or telephone number will normally be taken by a Helms representative. Emergency calls are answered 24 hours a day, seven (7) days a week. You are encouraged to contact the office during the hours of 8:00 A.M. to 5:00 P.M. to discuss any issues not of an emergency nature.
- Our local office is located at 312 Lafayette Street and is open during the 8-5 hours noted above. You are invited to stop by and discuss any aspect of your wastewater service.
- Our maintenance responsibility does not include the Customer's service line or, in the case of Quail Valley Lake, the aeration basin. You should be aware that these aeration basins located at each home are

Page 3
Quail Valley

essential to the proper operation of the wastewater collection system. They will require routine maintenance with the periodic removal of accumulated solids the major responsibility. Your aeration basin should have solids removed on a three (3) to (5) year schedule. This service can be provided by our Company or any qualified septic tank hauler.

Again, should you have any questions regarding your sewer service, feel free to contact us. We feel being responsive to the concerns of our customers is a very important building block to establishing a good, long lasting relationship.

Sincerely,

Milton E. Leeds

CAPITAL UTILITIES, INC.

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No. MO-0114081

Owner: Aqua Missouri, Inc.
Address: P.O. Box 7017, Jefferson City, MO 65102

Continuing Authority: Aqua Missouri, Inc.
Address: P.O. Box 7017, Jefferson City, MO 65102

Facility Name: Quail Valley Lake Subdivision WWTP
Facility Address: Quail Valley Lake, Route C, Jefferson City, MO 65109

Legal Description: SE ¼, SE ¼, NE ¼, Sec. 30, T44N, R12W, Cole County

Receiving Stream: Unnamed tributary to Moreau River (U)
First Classified Stream and ID: Moreau River (P) (00941)
USGS Basin & Sub-watershed No.: (10300102-220002)

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

Outfall #001 - Subdivision - SIC #4952

Extended aeration/chlorination/sludge is hauled to Jefferson City WWTP.

Design population equivalent is 296.

Design flow is 22,000 gallons per day.

Actual flow is 14,400 gallons per day.

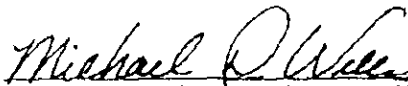
Design sludge production is 5.3 dry tons/year.

Actual sludge production is 0.375 dry tons/year.

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

February 4, 2005

Effective Date


Michael D. Wells, Acting Director, Department of Natural Resources
Executive Secretary, Clean Water Commission

February 3, 2010

Expiration Date
MO 780.0941 (11-92)

G. Irene Crawford, Director, Northeast Regional Office

EXHIBIT

3

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PAGE NUMBER 2 of 6	
					PERMIT NUMBER MO-0114081	
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The interim effluent limitations shall become effective upon issuance and remain in effect until November 30, 2007. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	INTERIM EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001</u>						
Flow	MGD	*		*	once/month	24 hr. estimate
Biochemical Oxygen Demand,	mg/L		45	30	once/month	grab
Total Suspended Solids	mg/L		45	30	once/month	grab
pH - Units	SU	**		**	once/month	grab
Fecal Coliform (Note 1)	#/100m L	1000		400	once/month	grab
Total Residual Chlorine (Note 2)	mg/L	1.0		1.0	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE <u>March 28, 2005</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
B. STANDARD CONDITIONS						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I & III</u> STANDARD CONDITIONS DATED <u>October 1, 1980</u> and <u>August 15, 1994</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

MO 760-0010 (8/91)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

* Monitoring requirement only.

** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.0-9.0 pH units.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS					PAGE NUMBER 3 of 6	
					PERMIT NUMBER MO-0114081	
The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective December 1, 2007 and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:						
OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
<u>Outfall #001 & Outfall #002</u>						
Flow	MGD	*		*	once/month	24 hr. estimate
Biochemical Oxygen Demand,	mg/L		45	30	once/month	grab
Total Suspended Solids	mg/L		45	30	once/month	grab
pH - Units	SU	**		**	once/month	grab
Fecal Coliform (Note 1)	#/100mL	1000		400	once/month	grab
Total Residual Chlorine (Note 2)	mg/L	0.019		0.019	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE <u>January 28, 2007</u> . THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						
B. STANDARD CONDITIONS						
IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED <u>Parts I & III</u> STANDARD CONDITIONS DATED <u>October 1, 1980</u> and <u>August 15, 1994</u> , AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.						

MO 780-0010 (8/91)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

* Monitoring requirement only.

** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.0-9.0 pH units.

Note 1 - Final limitations and monitoring requirements for Fecal Coliform are applicable only during the recreational season from April 1 through October 31.

Note 2 - This permit contains a Total Residual Chlorine (TRC) limit.

- (a) If the TRC limit in this permit is 0.01 mg/L or 0.2 mg/L, you must use an analytical method that has a quantification limit of no greater than 0.05 mg/L TRC. For reporting purposes on the discharge monitoring report (DMR), all analytical values below 0.05 mg/L shall be reported as "< 0.05 mg/L." All analytical values at or above the quantification limit of 0.05 mg/L shall be reported as the measured value. The permittee shall report the quantification limit in the remarks section of the DMR.

The average monthly effluent values for TRC will be determined by assuming that analytical results below the quantification limit are equivalent to 0 mg/L when calculating the monthly average.

The daily effluent value will be considered equal to 0 mg/L if it is below the quantification limit.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

Note 2 - Total Residual Chlorine (TRC) (continued)

- (b) If the TRC limit in this permit is 1.0 mg/L; you must use an analytical method with a quantification limit between 0.2 and 0.5 mg/L. All analytical values below the quantification limit shall be reported as "< quantification limit." All analytical values at or above the quantification limit shall be reported as the measured value.

The average monthly effluent values for TRC will be determined by assuming that analytical results below the quantification limit are equivalent to 0 mg/L when calculating the monthly average.

The daily effluent value will be considered equal to 0 mg/L if it is below the quantification limit.

- (c) Disinfection is required year-round unless the permit specifically states that "Final limitations and monitoring requirements for Fecal Coliform are applicable only during the recreational season from April 1 through October 31." If your permit does not require disinfection during the non-recreational months, do not chlorinate in those months.
- (d) Do not chemically dechlorinate if it is not needed to meet the limits in your permit.
- (e) If no chlorine was used in a given sampling period, an actual analysis is not necessary. Simply report as "0 mg/L" TRC.

C. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:

- (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b) (2) (C) and (D), 304(b) (2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
- (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
 - (2) controls any pollutant not limited in the permit.
- (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
- (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

2. All outfalls must be clearly marked in the field.

3. Permittee will cease discharge by connection to areawide wastewater treatment system within 90 days of notice of its availability.

C. SPECIAL CONDITIONS (continued)

4. Changes in Discharges of Toxic Substances

The permittee shall notify the Director as soon as it knows or has reason to believe:

- (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
 - (1) One hundred micrograms per liter (100 µg/L);
 - (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
 - (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
 - (4) The level established in Part A of the permit by the Director.
- (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.

5. Report as no-discharge when a discharge does not occur during the report period.

6. General Criteria. The following water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:

- (a) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
- (b) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;
- (c) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
- (d) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
- (e) There shall be no significant human health hazard from incidental contact with the water;
- (f) There shall be no acute toxicity to livestock or wildlife watering;
- (g) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
- (h) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

7. Sludge and Biosolids Use For Domestic Wastewater Treatment Facilities

- (a) Permittee shall comply with the pollutant limitations, monitoring, reporting, and other requirements in accordance with the attached permit Standard Conditions.
- (b) If sludge is not removed by a contract hauler, permittee is authorized to land apply biosolids. Permit Standard Conditions, Part III shall apply to the land application of biosolids. Permittee shall notify the department at least 180 days prior to the planned removal of biosolids. The department may require submittal of a biosolids management plan for department review and approval as determined appropriate on a case-by-case basis.

D. SCHEDULE OF COMPLIANCE

1. Aqua Missouri, Inc. is to submit engineering plans, engineering specifications, and a construction permit application by July 1, 2006, for changes to the wastewater treatment facility so the discharge from the facility will meet the final effluent limits for Total Residual Chlorine.
2. Aqua Missouri, Inc. Quail Valley Lake Subdivision Wastewater Plant will meet final effluent limits by April 1, 2007.

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended.

Permit No. MO-0114081

Owner: Aqua Missouri, Inc.
Address: P.O. Box 7017, Jefferson City, MO 65102

Continuing Authority: Aqua Missouri, Inc.
Address: P.O. Box 7017, Jefferson City, MO 65102

Facility Name: Quail Valley Lake Subdivision WWTP
Facility Address: Quail Valley Lake, Route C, Jefferson City, MO 65109

Legal Description: SE ¼, SE ¼, NE ¼, Sec. 30, T44N, R12W, Cole County

Receiving Stream: Unnamed tributary to Moreau River (U)
First Classified Stream and ID: Moreau River (P) (00941)
USGS Basin & Sub-watershed No.: (10300102-220002)

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

Outfall #001 - Subdivision - SIC #4952

Extended aeration/chlorination/sludge is hauled to Jefferson City WWTP.

Design population equivalent is 296.

Design flow is 22,000 gallons per day.

Actual flow is 14,400 gallons per day.

Design sludge production is 5.3 dry tons/year.

Actual sludge production is 0.375 dry tons/year.

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

February 4, 2005

Effective Date

February 3, 2010

Expiration Date

MO 789-0941 (10-93)

Michael D. Wells, Acting Director, Department of Natural Resources
Executive Secretary, Clean Water Commission

G. Irene Crawford, Director, Northeast Regional Office

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

Matt Blunt, Governor • Doyle Childers, Director

5.200 Aqua Missouri Quail Valley Lake
Cole County
#MO-0114081

www.dnr.mo.gov

May 5, 2006

Mr. Edward Storey
2916 Foxdale Drive
Jefferson City, MO 65109-9208

Dear Mr. Storey:

The Department of Natural Resources has received the March 7, 2006 letter from ReSource Institute following up on the March 2, 2006 meeting with you, Mr. Greg Haug – your engineer, and Mr. Mark Ludwig – your attorney. Representing the department at the meeting were Mr. Ed Galbraith, Mr. John Hoke, Mr. Refaat Mefrakis, and myself, Mr. Keith Forck.

During the meeting, the items of discussion were downstream water quality impacts – algae, nutrients, duckweed, chlorine residual, sludge in the stream, and how more houses could be connected to the existing treatment plant with little or no upgrade. Your letter highlights several action items discussed during the meeting. The department's response is below each action item.

1. A census was taken to develop the total number of people in the Quail Valley Subdivision. The result of this census showed that there are currently 229 people in the 77 homes.

With Aqua Missouri's acceptance of more connections, the department would consider the lower population equivalent per house based on this actual survey data.

2. Water records from Cole County Public Water Supply District #1 showed a water usage of 425,900 gallons for 75 homes in the month of January.

Was the billing period for the month actually 31 days?

3. The By-laws of the Homeowner's Association will be revised to require the solids from the septic tanks be pumped at a minimum of once every three years.

For additional houses to be considered for connection, adequate primary treatment must be provided to reduce the organic loading to the treatment plant. The department has some reservations about the homeowner's association maintaining the septic tanks over the long term. How can the department be assured that this requirement will be enforced?

Mr. Edward Storey
May 5, 2006
Page 2

4. The initial pumping of each septic tank will occur before June 1, 2006.

According to the department's September 1, 2004 letter, the treatment plant has limited organic capacity. Therefore, primary treatment must be provided before considering the connection of additional residences.

5. The Missouri Department of Natural Resources' inspectors will evaluate the water quality impact below the outfall this summer.

The department has limited resources, but will attempt to follow-up this summer with an on-site evaluation of the stream.

6. Options to upgrade the clarifier of the existing treatment plant will be submitted. Options include tube settling and chemical treatment.

The department will review the engineering report when submitted. These options are not included in 10 CSR 20 Chapter 8 Design Guides, so documentation must be included showing the capability, reliability, and operation and maintenance requirements of the proposed upgrade.

7. The developer will begin hooking up additional homes within the development as the flow and discharge parameters are below the permitted values.

Aqua Missouri regulates service connections as they are the permittee of the treatment facility and they must be notified before making service connections to the wastewater treatment system. Note the department's concerns regarding the organic loading of the wastewater treatment plant.

8. In accordance with their operating permit, Aqua Missouri is required to install a dechlorination system.

The current operating permit has a schedule of compliance to upgrade the system by adding a dechlorination system.

9. Influent samples will be collected to document the removal efficiency improvements from now until after all of the septic tanks have been pumped.

Without sufficient influent data, the department does not know what the actual concentration of the wastewater is and would use the default design guide loading rates.

10. A follow-up meeting with Mr. John Hoke and Mr. Keith Forck will be requested during the fall of 2006 to evaluate the effectiveness of the well-maintained septic tanks, results of the water quality evaluation and discharge monitoring reports.

Mr. Edward Storey
May 5, 2006
Page 3

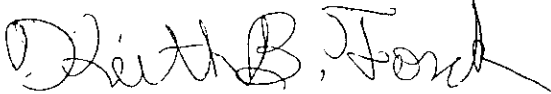
The department is open to another meeting to discuss the wastewater treatment and water quality issues. One issue that was not addressed is inflow and infiltration of the existing collection system.

The department recommends that you coordinate with Aqua Missouri and submit a short report on the capacity of the treatment plant and the potential of remaining capacity. Upon submittal of this report, the department will review and would likely agree with Aqua Missouri's analysis of the capacity of the treatment plant, as they are ultimately responsible for the treatment plant and the water quality of the effluent therefrom.

If you have any questions regarding these matters, please contact me at (573) 526-4232 or (660) 385-8000 in the Northeast Regional Office, 1709 Prospect Drive, Macon, MO 63552.

Sincerely,

NORTHEAST REGIONAL OFFICE

A handwritten signature in black ink, appearing to read "Keith B. Forck", written over the typed name.

Keith B. Forck, P.E.
Environmental Engineer

KBF/ks

c: ReSource Institute
Mr. Ed Galbraith, Water Protection Program
Mr. John Hoke, Water Pollution Control Branch
Aqua Missouri

ADDENDUM TO DECLARATION OF COVENANTS AND RESTRICTIONS

THIS ADDENDUM is made this 1st day of May, 2006, by Edward P. Storey, to a certain Declaration of Covenants and Restrictions, dated April 18, 1983, and recorded at Book 274, Page 93, Cole County Recorder's Office, to certain real property located in Cole County, Missouri, and more particularly described on "Exhibit A," attached hereto and incorporated herein.

The aforesaid Declaration of Covenants and Restrictions, Article VII, Section 1 shall be amended to read as follows:

(m) Sewage Disposal: Lot owners to install areator type septic tank and effluent pump. When subdivision is converted to central sewage system, Developer will provide treatment plant and main sewer lines to front of each lot. Owners to provide hook-up to main line in front of lot at owner's expense. Developer has established an escrow account with the Central Trust Bank to assure installation of this system. Two Thousand (\$2,000.00) dollars from the sale of each lot is to be deposited into this escrow account to assure installation of sewer facilities. The sale of the first ten lots are to be excluded from the escrow agreement. Water from downspouts, or any surface water, should not be permitted to drain into a sanitary sewer system. Developer reserves the right to hook up additional units built on adjacent land he owns to the treatment plant and sewer facilities in the future. Septic tanks shall be pumped to remove solids every three years. Such pumping to be done at the expense of the Association.

(q) Minimum Size Requirements: Any residence consisting of a single level above ground level shall contain a minimum of 1500 square feet of enclosed floor area; any residence consisting of 2 levels above ground level shall contain a minimum of 1200 square feet of enclosed floor area on the first level above ground level and an overall minimum of 2000 square feet of enclosed floor area in the 2 levels above ground level; any residence consisting of a level or part of a level below ground level shall contain an overall minimum of 1500 square feet of enclosed floor area in levels above ground level. The words "enclosed floor area" as used herein shall mean and include areas of the residence enclosed and finished for all year occupancy, computed on outside measurements of the residence, and shall not mean to include any areas, basements, garages, porches or attics. All residences must have a cedar shake roof or a roof of 50 year architectural

shingles. No other asphalt shingles will be allowed. Driveways shall be concrete only and must be installed upon completion of residence.

1st IN WITNESS WHEREOF, the said party has hereunto set his hand and seal this day of May, 2006.

Edward P. Storey
Edward P. Storey

STATE OF MISSOURI)
COUNTY OF COLE) ss.

On this 1st day of May, 2006, before me personally appeared Edward P. Storey, to me known to be the person described in and who executed the foregoing instrument and acknowledged that he executed the same as his free act and deed.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal at my office in Jefferson City, Missouri, the day and year first above written.

Debra J. Seyer
Notary Public

My Commission Expires: _____

Debra J. Seyer
Notary Public - Notary Seal
State of Missouri
County of Cole
My Commission Expires: March 9, 2007

"Exhibit A"

QUAIL VALLEY LAKE

EXHIBIT A TO AMENDED DECLARATION OF COVENANTS AND RESTRICTIONS

A tract of land situated in and being a part of the West $\frac{1}{4}$ of the NW $\frac{1}{4}$ of Section 29, and the East $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 30, Township 44 North, Range 12 West, Cole County, Missouri, and being more particularly described as follows:

Beginning at the NW Corner of Section 29, T 44 N, R 12 W; thence S 88° 02' 35" E, along the Section Line, 1386.93 feet, to the NE Corner of the West $\frac{1}{4}$ of the NW $\frac{1}{4}$ of said Section 29; thence leaving said Section Line, S 0° 45' 59" W, along the $\frac{1}{4}$ $\frac{1}{4}$ Section Line, 1488.52 feet; thence leaving said $\frac{1}{4}$ $\frac{1}{4}$ Section Line N 89° 14' 01" W, 518.26 feet to the approximate 690 Contour Line; thence along said 690 Contour Line, along the following courses: S 69° 35' 30" W, 89.91 feet; thence S 41° 49' 43" W, 98.26 feet; thence S 9° 53' 15" W, 161.22 feet; thence S 2° 05' 41" E, 192.18 feet; thence S 26° 51' 48" E, 89.20 feet; thence S 48° 57' 00" E, 136.96 feet; thence N 84° 47' 03" W, 25.90 feet; thence S 60° 31' 59" W, 101.83 feet; thence S 54° 30' 12" W, 85.16 feet; thence S 32° 57' 04" W, 106.91 feet; thence S 1° 49' 48" W, 169.18 feet; thence S 5° 11' 40" E, 98.75 feet; thence leaving said 690 Contour Line, S 2° 05' 00" W, 200.22 feet, to the $\frac{1}{4}$ Section Line; thence N 88° 11' 35" W, along said $\frac{1}{4}$ Section Line, 621.39 feet, to the West $\frac{1}{4}$ corner of Section 29, T 44 N, R 12 W; thence continuing along the $\frac{1}{4}$ Section Line S 88° 39' 09" W, 1051.18 feet; thence leaving said $\frac{1}{4}$ Section line N 1° 05' 00" E, 220.36 feet; thence in an Easterly direction along a curve to the left, 65.02 feet, the radius being 200.00 feet, the long chord being S 79° 36' 13" E, 64.73 feet; thence N 1° 05' 00" E, 60.00 feet; thence in a Westerly direction, along a curve to the right 205.43 feet, the radius being 140.00 feet, the long chord being N 46° 52' 45" W, 187.49 feet; thence S 88° 55' 00" E, 123.52 feet; thence N 25° 38' 50" E, 230.29 feet; thence N 1° 05' 00" E, 891.85 feet; thence S 76° 31' 43" E, 294.82 feet; thence N 13° 28' 17" E, 124.64 feet; thence S 76° 31' 43" E, 210.00 feet; thence N 13° 28' 17" E, 500.00 feet; thence N 2° 10' 15" W, 129.81 feet;

thence N 13° 28' 17" E, 278.23 feet, thence N 88° 02' 35" W, 178.59 feet; thence N 13° 28' 17" E, 7.78 feet; thence N 76° 31' 43" W, 258.57 feet; thence N 28° 28' 18" E, 37.45 feet; thence N 54° 13' 00" W, 207.26 feet, to the Easterly R.O.W. Line of Old Highway "C", also known as South Country Club Dr.; thence in a Northerly direction along said R.O.W. Line, along a curve to the right, 205.60 feet, the radius being 1116.27 feet, the long chord being N 41° 03' 37" E, 205.31 feet, to the intersection of said Easterly R.O.W. Line of Old Highway "C", also known as South Country Club Dr. and the Southerly R.O.W. Line of Missouri Route "C"; thence leaving said Easterly R.O.W. Line of Old Highway "C", N 49° 03' 27" E, along said Southerly R.O.W. Line of Missouri Route "C", 81.40 feet, to the Section Line; thence leaving said Southerly R.O.W. Line of Missouri Route "C", S 89° 22' 10" E, along said Section Line, 610.08 feet, to the point of beginning.

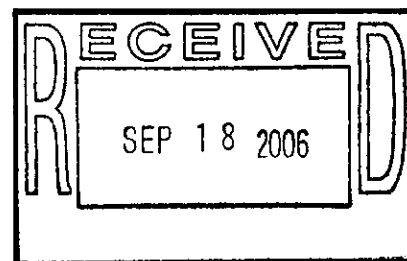
Containing 113.082 Acres.

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September 14, 2006

Ms. Tena Hale Rush
Aqua Missouri, Inc.
P.O. Box 7017
Jefferson City, MO 65102



RE: Quail Valley Wastewater Treatment Plant

Dear Ms. Rush:

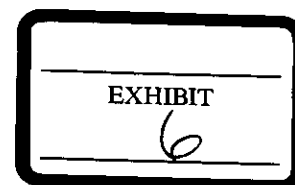
On behalf of Mr. Edward Storey and the Quail Valley Homeowners' Association, I would like to submit information to you concerning additional investigations conducted over the last three months at the Quail Valley Wastewater Treatment Plant. These investigations resulted as a follow-up to the meeting held with the Missouri Department of Natural Resources and the follow-up letter received from Mr. Keith Forck of MDNR dated May 5, 2006. In this May 5th letter, Mr. Forck recommended that we submit a short report on the capacity of the treatment plant and the potential remaining capacity. Therefore, following in this letter is additional information recommended to be investigated by MDNR.

1) Census Data

Based on the census data, 229 people are occupying 77 homes in the Quail Valley subdivision. This equates to 2.97 people per home in the Quail Valley subdivision. It is recommended that this value be utilized for calculating existing and proposed plant loadings.

2) Actual records were obtained from Cole County Public Water Supply District #1 and showed that 425,900 gallons of water usage occurred in 75 homes in the development. This was based on a 31-day billing cycle; however, some homeowners are self-readers and may not have read on the exact 31-day timeframe. Based on the best information available from the water district, the average water usage per household was 183 gallons per day. It is recommended that this average water usage be utilized in calculating influent wastewater hydraulic load.

3) The Quail Valley Homeowners' Association has modified the by-laws to require that the septic tanks be pumped a minimum of once every three years. The Homeowners' Association will be responsible for ensuring that the septic tanks are pumped. The Homeowners' Association recently completed pumping of all existing septic tanks in the development.



4) Septic Tank Pumping

All septic tanks were pumped before August 1, 2006. A sample was taken shortly thereafter. Two samples of the influent had previously been taken to get a reading before cleaning septic tanks. An additional sample was taken on August 21, 2006, after several weeks had passed following pumping of all septic tanks. All of this data is included in Table 1 attached to this letter. The average BOD influent from the four samples was 83 mg/l while the TSS concentration was 34 mg/l. Both of these values are significantly less than typical sanitary wastewater design parameters indicating that the plant is not overloaded.

5) Infiltration Inflow Analysis

As shown in Table 2, attached to this letter, an analysis of wastewater flows recorded at the wastewater treatment plant at Quail Valley was conducted. The high flow rate recorded at the treatment plant was 30,436 gallons per day. The average flow rate was 11,744 gallons per day. It is understood that the readings recorded are instantaneous; however, with over 160 readings taken, a statistically significant indication of the peak flows realized at the wastewater treatment plant is provided. Given the lack of an extensive gravity flow collection system, infiltration is not considered to be a significant contributor to the wastewater plant flows. By-laws for the Homeowners' Association also prevent direct connection of inflow sources to the wastewater system. Infiltration and inflow is not suspected to be a significant problem for the Quail Valley Wastewater Treatment Plant.

6) Treatment Capacity Calculations

As shown in the attached Table 1, maximum loading to the wastewater treatment plant has been calculated based upon effluent from the septic tanks. Using the average organic and solids concentrations of the four samples taken, calculations show that the wastewater plant has capacity for additional loading. In calculating the existing aeration basin and settling basin capacities, organic and solids loadings are within Missouri Department of Natural Resources design criteria guidelines based upon a projected maximum development of 120 homes in the Quail Valley Development. Hydraulic loadings, based upon water usage and census data, projected for 120 homes are also within design guidelines. Based upon this data, the wastewater treatment system is capable of accepting flow from an additional 40 homes. It should be noted that good engineering practice generally includes a safety factor to account for varying field conditions. Given the changes that can occur in a wastewater system, something less than the calculated maximum loading may be appropriate. As per previous discussions, we believe it is reasonable and appropriate to add an additional 10 homes to the system over the next couple of years. Monitoring of loadings and treatment plant effluent results will be performed to determine impacts of new hookups and to see if additional capacity is available beyond 90 homes. Table 3 shows the loadings with a maximum of 90 homes connected to the system.

7) Summary and Recommendations

Based upon the data provided, it is recommended that Aqua Missouri, Inc. allow a total of 90 homes from the Quail Valley Subdivision Development to be hooked-up to the wastewater treatment system. In accordance with MDNR's May 5, 2006 letter, Aqua Missouri's analysis of the capacity of the treatment plant is required as Aqua Missouri is ultimately responsible for the treatment plant and the water quality of the effluent there from.

Therefore, Mr. Ed Storey and the Quail Valley Homeowners' Association requests approval to hook-up a total of 90 homes to the wastewater treatment system based upon the data provided herein.

If you have any questions or need further information, please give me a call at (573) 634-5008.

Sincerely,

A handwritten signature in black ink, appearing to read "Gregory G. Haug". The signature is fluid and cursive, with the first name "Gregory" being the most prominent.

Gregory G. Haug, PE

Attachments

cc: Mr. Keith Forck, MDNR
Mr. Ed Storey
Quail Valley Homeowners' Association
Mr. Mark A. Ludwig, Carson & Coil ✓

Table 1

Rev 9/14/06

Quail Valley Lake Subdivision WWTP
 Quail Valley Lake, Route C
 Jefferson City, MO 65109
 Permit No. MO-0114081

Owner/Continuing Authority: Aqua Missouri, Inc

Permit Description:

Extended Aeration/chlorination/sludge hauled to Jefferson City WWTP

	<u>Based on Permit</u>		<u>Actual</u>		<u>Max Capacity</u>		<u>Proposed</u>	
Population Equiv.	296		229	*	352		264	
Plant Flow	22000	GPD	14274	GPD **	21960	GPD **	16470	GPD **
Flow per PE	74	GPD	62	GPD	62	GPD	62	GPD
Sludge Production	5.3	dry TPY	0.375	dry TPY	0.58	dry TPY	0.43	dry TPY
BOD loading	50	lbs/day	9.9	lbs/day	15.2	lbs/day	11.4	lbs/day
Homes connected	80		78		120		90	
Flow per home	275	GPD	183	GPD **	183	GPD **	183	GPD **

Wastewater Plant Description

23,000 GPD Extended Aeration Plant
 6450 Gallon sludge holding tank
 Chlorine contact tank with tablet chlorinator
 Effluent flow measurement = V-notch weir
 Settling zone capacity = 3958 gallons
 Settling zone area = 72 square feet
 Weir length = 11'
 Air for lift pumps = 36,200 CFD
 Motor = 5 HP
 Blower speed = 2050 RPM
 Air available = 134,000 CFD (93 CFM)
 Operating psi = 5
 Plant length = 47' 10"
 Plant width = 13' 10"

Plant Influent Testing	BOD (mg/l) TSS (mg/l)		
4/5/2006	81	33	before septic tank cleaning
6/1/2006	84	32	before septic tank cleaning
8/4/2006	98	44	shortly after septic tank cleaning
8/21/2006	68	28	2 weeks after septic tank cleaning
Average	83	34	

* Obtained from census of the development

** Actual January water usage for Quail Valley

(425900 gal/75 homes/31 days = 183 gal/home)

Table 2

Quail Valley Lake Subdivision WWTP
 Quail Valley Lake, Route C
 Jefferson City, MO 65109
 Permit No. MO-0114081

Date	Flow (gpd)		Monthly Average	Monthly Low	Monthly High
11/1/05	7,609	November-05	9,671	1,902	15,218
11/3/05	11,413				
11/4/05	7,609				
11/7/05	9,131				
11/8/05	5,707				
11/9/05	11,413				
11/10/05	7,609				
11/11/05	3,801				
11/14/05	15,218				
11/15/05	11,413				
11/16/05	15,218				
11/17/05	1,902				
11/18/05	5,707				
11/21/05	7,609				
11/22/05	11,413				
11/23/05	15,218				
11/28/05	11,413				
11/29/05	9,131				
11/30/05	15,218				
10/3/05	15,218	October-05	10,228	1,660	22,827
10/4/05	5,707				
10/5/05	4,565				
10/6/05	11,413				
10/7/05	9,131				
10/10/05	2,853				
10/11/05	15,218				
10/13/05	7,609				
10/14/05	11,413				
10/17/05	1,902				
10/19/05	18,261				
10/20/05	22,827				
10/24/05	15,218				
10/25/05	1,660				
10/27/05	13,044				
10/31/05	7,609				
9/1/05	7,608	September-05	10,558	2,853	15,218
9/2/05	7,609				
9/6/05	15,218				
9/8/05	15,218				
9/9/05	15,218				
9/12/05	5,707				

9/13/05	9,131				
9/16/05	11,413				
9/20/05	15,218				
9/23/05	13,044				
9/26/05	11,413				
9/29/05	2,853				
9/30/05	7,609				
8/1/05	7,609	August-05	12,098	4,565	22,827
8/2/05	11,413				
8/3/05	7,609				
8/8/05	15,218				
8/9/05	7,609				
8/11/05	11,413				
8/15/05	4,565				
8/17/05	11,413				
8/18/05	22,827				
8/19/05	11,413				
8/22/05	7,609				
8/23/05	22,827				
8/25/05	22,827				
8/29/05	11,413				
8/30/05	5,707				
7/1/05	11,413	July-05	11,426	2,075	22,827
7/5/05	15,218				
7/7/05	11,413				
7/11/05	15,218				
7/12/05	11,413				
7/15/05	7,609				
7/18/05	15,218				
7/19/05	11,413				
7/20/05	15,218				
7/21/05	11,413				
7/26/05	22,827				
7/27/05	2,075				
7/28/05	3,804				
7/29/05	5,707				
6/6/05	7,609	June-05	10,711	4,565	22,827
6/9/05	5,707				
6/11/05	11,413				
6/13/05	22,827				
6/14/05	4,565				
6/17/05	5,707				
6/20/05	7,609				
6/21/05	11,413				
6/23/05	11,413				
6/24/05	11,413				
6/27/05	9,131				
6/28/05	15,218				
6/30/05	15,218				
5/2/05	15,218	May-05	8,574	1,440	15,218
5/3/05	9,130				
5/5/05	15,218				

5/6/05	11,413				
5/9/05	7,609				
5/10/05	5,707				
5/12/05	13,044				
5/13/05	11,413				
5/16/05	7,609				
5/19/05	3,804				
5/20/05	3,261				
5/23/05	1,440				
5/24/05	11,413				
5/26/05	2,853				
5/27/05	11,413				
5/30/05	11,413				
5/31/05	3,804				
4/5/05	15,218	April-05	14,524	4,565	22,827
4/7/05	18,262				
4/8/05	13,044				
4/11/05	15,218				
4/12/05	18,262				
4/14/05	15,218				
4/15/05	11,413				
4/18/05	11,413				
4/19/05	9,130				
4/25/05	4,565				
4/26/05	11,413				
4/28/05	22,827				
4/29/05	22,827				
3/1/05	11,413	March-05	12,355	1,630	22,827
3/3/05	3,804				
3/4/05	3,804				
3/7/05	15,218				
3/8/05	15,218				
3/10/05	22,827				
3/14/05	15,218				
3/15/05	15,218				
3/17/05	15,218				
3/18/05	4,565				
3/21/05	1,630				
3/22/05	15,218				
3/24/05	13,043				
3/25/05	22,827				
3/28/05	11,413				
3/29/05	11,413				
3/30/05	9,130				
3/31/05	15,218				
2/1/05	11,413	February-05	13,593	2,536	22,827
2/3/05	2,536				
2/4/05	7,609				
2/7/05	15,218				
2/8/05	11,413				
2/9/05	5,707				
2/11/05	11,413				

2/14/05	22,827				
2/15/05	22,827				
2/17/05	22,827				
2/18/05	15,218				
2/21/05	11,413				
2/22/05	7,609				
2/24/05	22,827				
2/25/05	15,218				
2/28/05	11,413				
1/3/05	30,436	January-05	16,039	2,536	30,436
1/4/05	22,827				
1/5/05	30,436				
1/6/05	30,436				
1/7/05	22,827				
1/10/05	2,536				
1/11/05	11,413				
1/13/05	5,707				
1/14/05	5,707				
1/17/05	15,218				
1/19/05	15,218				
1/21/05	14,400				
1/25/05	15,217				
1/27/05	11,413				
1/28/05	11,413				
1/31/05	11,413				
Avg Flow	11,744				
High Flow	30,436				
Low Flow	1,440				

Table 3

Quail Valley Lake Subdivision WWTP
Quail Valley Lake, Route C
Jefferson City, MO 65109
Permit No. MO-0114081

rev. 9/14/06

Alternative: Pretreatment with Maintained septic tanks

Proposed Design Parameters:

Homes connected
Pop. Equiv. =
Flow =
BOD =
TSS =
sludge prod. =

Septic effluent WW Plant Influent	
90	
264	
16470	GPD
11	lbs/day
5	lbs/day
0.9	dry tons/yr

(83 mg/l influent **)
(34 mg/l influent **)

Aeration Basin

basin size req'd 5685 gallons @ 15 lbs/1000 CF
air required 29642 CFD @ 2600 CF/lb BOD

Keep current plant the same

Current aeration volume = 22081 gallons
Added aeration volume = 0 gallons
Total aeration volume = 22081 gallons
Air for lift pumps = 36200 CFD
Motor = 5 HP
Blower speed = 2050 RPM
Air available = 134,000 CFD (93 CFM)
Operating psi = 3.5

Settling Basin

Existing clarifier = 72 square feet
Min. Depth = 10.25' 5520 volume in gallons
Detention time = 8.04 hours
Total Weir length = 11 linear feet
Recorded Peak Flow 30436 GPD (based upon records from Aqua MO)
Detention time = 4.35 hours

** Based upon the average of 4 samples taken of the WW plant influent
two samples were taken before septic tank cleaning and two samples after cleaning