

Village of Menands

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Annual Drinking Water Quality Report for 2017

Village of Menands
280 Broadway, Menands, NY 12204
(Public Water Supply Identification Number NY0100200)

INTRODUCTION

To comply with State regulations, the Village of Menands, annually issues a report describing the quality of your drinking water. The purpose of this report is to raise your understanding of drinking water and awareness of the need to protect our drinking water sources. We are very pleased to provide you with this year's Annual Water Quality Report. We detected 1 of those contaminants at a level higher than the State allows. As we told you at the time, our water temporarily exceeded a drinking water standard and we modified our treatment process to rectify this problem. This report is an overview of last year's water quality. Included are details about where your water comes from, what it contains, and how it compares to New York State standards. Our constant goal is and always has been, to provide to you a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and to protect our water resources. If you have any questions concerning this report or concerning your drinking water please contact: *Mr. Harry Harbour, Water Department Operator, 280 Broadway, Menands, NY 12204; Telephone (518) 860-8568.* We want our valued customers to be informed about their water service. If you want to learn more, please attend any of our regularly scheduled Village Board meetings. They are held on the 1st and 3rd Monday (Tuesday if Monday holiday) of each month, 6:00 PM in the *Municipal Building, 250 Broadway, Telephone (518) 434-2922.*

WHERE DOES OUR WATER COME FROM?

The Village of Menands purchases its water from the City of Troy. Water has been supplied to us under a contract arrangement since the 1950's. The City of Troy draws its water from a "surface water" supply, the spring fed Tomhannock Reservoir. It is located to the northeast of the City of Troy. Water flows from the Tomhannock Reservoir to the Troy Water Treatment Plant (TWTP), a complete treatment facility. In an effort to lower the formation of disinfection byproducts (DBBPs), TWTP adds potassium permanganate at the Tomhannock Reservoir. Potassium permanganate is a strong oxidant that is used to oxidize iron and manganese, but does not produce the DBBPs that chlorine does. Potassium permanganate is being fed seasonally from mid June to about September or October depending on the iron and manganese levels in the raw water. Additionally chlorine dioxide is added at Melrose Station to oxidize the organic material that leads to the formation of disinfection byproducts when it reacts with chlorine but unlike chlorine, chlorine dioxide does not form DBBPs like THM's or HAA5's. Chlorine dioxide is fed year-round. They also add fluoride at low levels to protect teeth against dental cavities

Finished water from the Troy WTP is transmitted to us by way of a 20-inch pipeline that is encased in concrete and runs under the Hudson River. Water is pumped into our distribution system and into two covered concrete reservoirs with a combined total storage capacity of 2,270,000 gallons. Storage allows us to meet consumer demand and to provide adequate fire protection. The Village continuously monitors free chlorine residual and adds chlorine to ensure adequate chlorine residual disinfection levels. We maintain a pressure booster pumping station for our residents in the Sky Hollow/Sage Hill Lane areas. In the event of an emergency, there are interconnects via two 10-inch pipelines with the City of Watervliet and the Latham Water District.

In general, the sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activities. Contaminants that may be present in source water include microbial contaminants; inorganic contaminants; pesticides and herbicides; organic chemical contaminants; and radioactive contaminants. In order to ensure that tap water is safe to drink, the State and EPA prescribe regulations, which limit the amount of certain contaminants in water, provided by public water systems. The State Health Department's and the FDA's regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

FACTS AND FIGURES

The Village provides water through 1,100 service connections to a resident population of approximately 3,700 people. Our average daily demand is 98,800, gallons. Our single highest day was 1,600,000 gallons. The total water purchased in the billing period November 1, 2016 through October 31, 2017 was 352,550,000 gallons. All services are metered. A total 189,424,000 of gallons was delivered to customers. As a result, a total 168,100,000 gallons of water (or 31.8%) was lost in the transmission and distribution

system. This can be attributed to water usage for fire protection, water main breaks and leaks. The annual charge for water is \$4.109 per 1000 gallons.

ARE THERE CONTAMINANTS IN OUR DRINKING WATER?

In accordance with State regulations, the Village of Menands routinely monitors your drinking water for numerous contaminants. We test your drinking water for inorganic contaminants, radiological contaminants, lead and copper, nitrate, volatile organic contaminants, haloacetic acids, trihalomethanes and synthetic organic contaminants. In addition, we are required to test a minimum of five samples for coliform bacteria each month, however we usually test six. The table presented below depicts which contaminants were detected in your drinking water. The State allows us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old and is noted. For a listing of the parameters we analyzed that were not detected along with the frequency of testing for compliance with the NYS Sanitary Code, see Appendix A.

It should be noted that all drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily pose a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800-426-4791) or the Albany County Health Department at (518) 447-4620.

WHAT DOES THIS INFORMATION MEAN?

As you can see by the table, our system had 1 violation and we are required to furnish the following health effects information: *Some studies suggest that people who drink chlorinated water (which contains trihalomethanes) or water containing elevated levels of trihalomethanes for long periods of time may have an increased risk for certain health effects. For example, some studies of people who drank chlorinated drinking water for 20 to 30 years show that long term exposure to disinfection by-products (including trihalomethanes) is associated with an increased risk for certain types of cancer. A few studies of women who drank water containing trihalomethanes during pregnancy show an association between exposure to elevated levels of trihalomethanes and small increased risks for low birth weights, miscarriages and birth defects. However, in each of the studies, how long and how frequently people actually drank the water, as well as how much trihalomethanes the water contained is not known for certain. Therefore, we do not know for sure if the observed increases in risk for cancer and other health effects are due to trihalomethanes or some other factor. The individual trihalomethanes chloroform, bromodichloromethane and dibromochloromethane cause cancer in laboratory animals exposed to high levels over their lifetimes. Chloroform, bromodichloromethane and dibromochloromethane are also known to cause effects in laboratory animals after high levels of exposure, primarily on the liver, kidney, nervous system and on their ability to bear healthy offspring. Chemicals that cause adverse health effects in laboratory animals after*

high levels of exposure may pose a risk for adverse health effects in humans exposed to lower levels over long periods of time.

We have learned through our monitoring and testing that some contaminants have been detected; however, these compounds were detected below New York State requirements. MCL's are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?

During 2017, our system was in compliance with applicable State drinking water operating, monitoring and reporting requirements.

DO I NEED TO TAKE SPECIAL PRECAUTIONS?

Although our drinking water met or exceeded state and federal regulations, some people may be more vulnerable to disease causing microorganisms or pathogens in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice from their health care provider about their drinking water. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium, Giardia and other microbiological pathogens are available from the Safe Drinking Water Hotline (800-426-4791).

WHAT IS THE SOURCE WATER ASSESSMENT PROGRAM (SWAP)?

To emphasize the protection of surface and ground water sources used for public drinking water, Congress amended the Safe Drinking Water Act (SDWA) in 1996. The amendments require that New York State Department of Health's Bureau of Public Water Supply Protection is responsible for ensuring that source water assessments are completed for all of New York's public water systems.

A source water assessment provides information on the potential contaminant threats to public drinking water sources:

- ◆ each source water assessment will: determine where water used for public drinking water comes from (delineate the source areas)
 - ◆ Inventory potential sources of contamination that may impact public drinking water sources
 - ◆ Assess the likelihood of a source water area becoming potential contaminated
- A SWAP summary for our water supply is attached to this report.

INFORMATION OF FLUORIDE ADDITION

Our system is one of many drinking water systems in New York State that provides drinking water with a controlled, low level of fluoride for consumer dental health protection. Fluoride is added to the water we purchase, by the City of Troy before it is delivered to us. According to the United States Centers for Disease Control, fluoride is very effective in preventing cavities when present in drinking water at a controlled level. To ensure that the fluoride supplement in your water provides optimal dental protection, the City of Troy monitors fluoride levels on a daily basis to make sure fluoride is maintained at a target level of 1.0 mg/l. During 2017 monitoring showed that fluoride levels in your water were within 0.2 mg/l of the target level 99% of the time. None of the monitoring showed fluoride at levels that approach the 2.2 mg/l MCL for fluoride.

INFORMATION ON LEAD

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Village of Menands is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30

seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>

WATER CONSERVATION TIPS

Although the Village is fortunate to have a good supply of water coming from Troy and water restrictions are a rarity, we encourage all residents to conserve. The following are just a few of the simple measures that can be implemented:

- ◆ Only run the dishwasher and clothes washer when there is a full load
- ◆ Use water saving showerheads
- ◆ Install faucet aerators in the kitchen and the bathroom to reduce the flow from 4 to 2.5 gallons per minute
- ◆ Water gardens and lawn for only a couple of hours after sunset
- ◆ Check and repair all leaks in toilets, faucets and outside spigots
- ◆ Cover swimming pools during hot spells, thereby reducing the need to replenish water
- ◆ Instead of hosing, sweep driveways and sidewalks
- ◆ Turn water off and on while washing hands, brushing teeth, shaving etc.

CAPITAL IMPROVEMENTS

There were no major projects done in 2017 although hydrants, valves and piping were replaced when necessary.

CLOSING

Thank you for allowing us to continue providing your family with clean, quality water this year. In order to maintain a safe and dependable water supply we sometimes need to make improvements that will benefit our customers. We ask that all our customers help us protect our water sources, which are the heart of our community. Please call our office if you have questions.

City of Troy Tomhannock Reservoir Source Water Assessment Summary

The NYS DOH has completed a Source Water Assessment for the Tomhannock Reservoir. The assessment is summarized below. The assessment includes a susceptibility rating based on the risk posed by each potential source of contamination and how likely contaminants could enter the reservoir(s). The susceptibility rating is an estimate of the potential for contamination. It does not mean that the water delivered to your home is or will become unsafe to drink. See section "Are there contaminants in our drinking water?" of this report, for information concerning low levels of contaminants in your water.

The assessment found the amount of pasture in the assessment area results in a potential for protozoa contamination. There is also possible contamination susceptibility associated with landfills in the assessment area. It should be noted that hydrologic characteristics (e.g. basin shape and flushing rates) generally make reservoirs sensitive to existing and new sources of phosphorus and microbial contamination. Troy's water treatment plant performs multi-level treatment to insure that Troy and Menands residents receive safe drinking water. Additionally, as this annual report shows your water is routinely monitored for a great number of potential contaminants. A copy of the full Source Water Assessments, including a map of the assessment area, is available for review by contacting us at the number provided in this report.

VILLAGE OF MENANDS TABLE OF DETECTED CONTAMINANTS						
Public Water Supply Identification Number NY0100200						
	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Inorganic Contaminants (sample data from 5/3/17 unless otherwise noted)						
Barium	N	29.1	ppb	2000	2000	Erosion of natural deposits
Chloride	N	23.1	ppm	N/A	250	Geology; Naturally occurring
Chromium	N	1.6	ppb	50	50	Erosion of natural deposits
Copper (samples from 6/9/15)	N	0.05 ¹	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits;
Range of copper concentrations		ND-0.09				
Iron	N	15.1	ppb	N/A	300	Erosion of natural deposits
Fluoride	N	0.667	ppm	N/A	2.2	Water additive which promotes strong teeth
Lead (samples from 6/9/15)	N	2 ²	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Range of lead concentrations		ND-5				
Nitrate (as Nitrogen)	N	0.16	ppm	10	10	Runoff from fertilizer
pH	N	8.3	units	N/A	6.5-8.5	
Sodium ³	N	13.2	ppm	N/A	N/A	Geology; Road Salt
Sulfate	N	19.2	ppm	N/A	250	Geology
Stage 2 Disinfection Byproducts (samples from 2/6/17, 5/23/17, 8/1/17 & 11/6/17)						
Haloacetic Acids (HAA5) ⁴ average	N	47.1	ppb	N/A	60	By-product of drinking water chlorination
Range of values for HAA5		21-79.3				
Total Trihalomethanes [TTHM] ⁴ average	Y	81.4	ppb	0	80	By-product of drinking water chlorination
Range of values for TTHM		27.7-79.3				
Chlorine (daily testing) average range	N	1.02 0.69-1.80	ppm	MRDLG N/A	MRDL 4	Used in the treatment and disinfection of drinking water
NOTES-						
1. The level presented represents the 90 th percentile of 20 test sites. The action level for copper was not exceeded at any of the 20 sites tested						
2. The level presented represents the 90 th percentile of 20 test sites. The action level for lead was not exceeded at any of the 20 sites tested						
3. Water containing more than 20 mg/l should not be consumed by persons on severely restricted sodium diets						
4. The average is based on an LRAA. The average shown represents the highest LRAA for the TTHMs which was in the 4 th quarter of 2017 while the highest LRAA for the HAA5s was in the 3 rd quarter of 2017						
<i>Non-Detects (ND)</i> - laboratory analysis indicates that the constituent is not present.						
<i>Parts per million (ppm) or Milligrams per liter (mg/l)</i> - one part per million corresponds to one minute in two years or a single penny in \$10,000.						
<i>Parts per billion (ppb) or Micrograms per liter</i> - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.						
<i>Nephelometric Turbidity Unit (NTU)</i> - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.						
<i>Action Level</i> - the concentration of a contaminant, which, if exceeded, triggers treatment, or other requirements, which a water system must follow.						
<i>Treatment Technique (TT)</i> - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.						
<i>Maximum Contaminant Level</i> - The "Maximum Allowed" (MCL) is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.						
<i>Maximum Contaminant Level Goal</i> The "Goal" (MCLG) is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.						
<i>Maximum Residual Disinfectant Level (MRDL)</i> : The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.						
<i>Maximum Residual Disinfectant Level Goal (MRDLG)</i> : The level of a drinking water disinfectant below which there is no known or expected risk to health.						
<i>Locational Running Average (LRA)</i> : The LRA is calculated by taking the average of the four most recent samples collected at each individual site.						
<i>N/A-Not applicable</i>						

MENANDS WATER DEPARTMENT
(WATER PURCHASED FROM CITY OF TROY TABLE OF DETECTED CONTAMINANTS)
Public Water Supply Identification Number NY4100050

Contaminant	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Microbiological Contaminants						
Turbidity (Highest turbidity sample from Troy WTP)	N	0.53 ¹ 100%	NTU	N/A	TT=1.0 NTU TT= 95% samples < 0.3	Soil runoff
Inorganic Contaminants						
Barium (sample from 8/3/17)	N	29	ppb	2000	2000	Erosion of natural deposits
Chloride (sample from 8/3/17)	N	22.5	ppm	N/A	250	Geology; Naturally occurring
Copper (samples from 6/15/16-9/15/16)	N	0.08 ² ND-0.11	ppm	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Color (average of daily samples) range	N	15 8-25	units	N/A	15	Large quantities of organic chemicals, the presence of metals such as copper, iron and manganese; Natural color may be caused by decaying leaves, plants, and soil organic matter.
Fluoride(average of daily samples) Range	N	760 100-930	ppb	N/A	2200	Water additive which promotes strong teeth
Iron (average of weekday samples) range	N	2 ND-70	ppb	N/A	300	Geology; Naturally occurring
Manganese(average of weekday samples) range	N	10 ND-30	ppb	N/A	300	Geology; Naturally occurring
Nitrate	N	308	ppb	10,000	10,000	Runoff from fertilizer
pH (average of daily samples) range	N	8.23 6.36-9.10	units		6.5-8.5	
Sodium ³ (sample 11/1/17)	N	11.0	ppm	N/A	N/A	Geology; Road Salt
Sulfate (sample from 8/3/17)	N	19.2	ppm	N/A	250	Geology
Radiological Contaminants (samples from 3/1/16)						
Gross Beta Particles	N	0.681	pCi/l	pCi/l	4.0	
Radium226	N	0.456	pCi/l	0	5.0	Naturally occurring
Total Uranium	N	0.167	ppb	0	30	Naturally occurring
Disinfection Byproducts (Quarterly samples from 3/1/17, 6/1/17, 9/1/17 & 12/5/17)						
Chlorine Dioxide Residual (average daily testing)range	N	0.01 ND-0.15	ppm	N/A	0.8	Used in the treatment and disinfection of drinking water
Chlorate (average daily testing) range	N	0.16 ND-0.31	ppm	N/A	N/A	Byproduct of chlorine dioxide used in disinfection
Chlorite (average based on monthly testing) range	N	0.56 ND-1.06	ppm	N/A	1.0	Byproduct of chlorine dioxide used in disinfection
Stage 2 Haloacetic Acids (HAA5)(Average) Range of values for HAA5	N	53.6 ⁴ 2.8-77.6	ppb	N/A	60	Byproduct of drinking water chlorination
Stage 2 TTHM[Total Trihalomethanes](Average) Range of values for TTHM	Y	80.8 ^{4,5} 25-126	ppb	0	80	Byproduct of drinking water chlorination
Chlorine	N	0.96 0.49-1.40	ppm	MRDLG N/A	MRDL 4	Used in the treatment and disinfection of drinking water

1. Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. Level detected represents the highest level detected.
2. The level presented represents the 90th percentile of the 30 samples collected. The action level for copper was not exceeded at any of the 30 sites tested.
3. Water containing more than 20 ppm should not be consumed by persons on severely restricted sodium diets.
4. The average is based on a Locational Running Annual Average (LRAA). The average shown is the highest LRAAs for 2017. The highest LRAA for the HAA5s and TTHMs were in the 3rd quarter of 2017.
5. A THM violation occurs when the LRAA is greater than 80 ppb. We exceeded this level in the 3rd quarter of 2017. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer. For additional information concerning Trihalomethane information please see section "What Does This Information Mean?"

As illustrated in the table above, Troy's monitoring and testing detected some contaminants; all other contaminants were below the maximum levels permitted by the State, known as the maximum contaminant levels (MCL). Many of the test results were **NON DETECTABLE**. The type/group (number of contaminants in each group) tested for were as follows: volatile organic compounds (52) +MTBE, synthetic organic compounds (38), asbestos. The inorganic contaminants tested for and non-detectable were, arsenic, cadmium, chromium mercury, silver, selenium, antimony, beryllium, thallium, nickel, zinc, nitrite, and cyanide.

Appendix A

New York State Sanitary Code Compliance Monitoring Requirements- Compounds Analyzed that were Below Limits of Detection

VILLAGE OF MENANDS TEST RESULTS					
Public Water Supply Identification Number NY0100200					
CONTAMINANT	MONITORING FREQUENCY		CONTAMINANT	CONTAMINANT	MONITORING FREQUENCY
Asbestos	Every 9 years Waiver from monitoring No asbestos pipe		POC's (Volatile Organic Compounds)		
			Benzene	Trans-1,3-Dichloropropene	Monitoring requirement is one sample annually.
Arsenic	Monitoring requirement is one sample annually		Bromobenzene	Ethylbenzene	
Beryllium	Sample results from 5/3/17 NON DETECT		Bromochloromethane	Hexachlorobutadiene	Sample results from 5/3/17 NON DETECT
Cadmium			Bromomethane	Isopropylbenzene	
Chromium			N-Butylbenzene	p-Isopropyltoluene	
Cyanide			sec-Butylbenzene	Methylene Chloride	
Mercury			Tert-Butylbenzene	n-Propylbenzene	
Antimony			Carbon Tetrachloride	Styrene	
Silver			Chlorobenzene	1,1,1,2-Tetrachloroethane	
Selenium			2-Chlorotoluene	1,1,2,2-Tetrachloroethane	
Thallium			4-Chlorotoluene	Tetrachloroethene	
Beryllium			Dibromomethane	Toluene	
Nickel			1,2-Dichlorobenzene	1,2,3-Trichlorobenzene	
			1,3-Dichlorobenzene	1,2,4-Trichlorobenzene	
			1,4-Dichlorobenzene	1,1,1-Trichloroethane	
			Dichlorodifluoromethane	1,1,2-Trichloroethane	
Manganese	Monitoring requirement is at State discretion Sample results from 5/3/17 NON DETECT		1,1-Dichloroethane	Trichloroethene	
Silver			1,2-Dichloroethane	Trichlorofluoromethane	
Zinc			1,1 Dichloroethene	1,2,3-Trichloropropane	
Color			cis-1,2 Dichloroethene	1,2,4-Trimethylbenzene	
Odor			Trans-1,2-Dichloroethene	1,3,5-Trimethylbenzene	
			1,2 Dichloropropane	m-Xylene	
			1,3 Dichloropropane	o- Xylene	
			2,2 Dichloropropane	p-Xylene	
			1,1 Dichloropropene	Vinyl Chloride	
			Cis-1,3-Dichloropropene	MTBE	
Synthetic Organic Chemicals					
Synthetic Organic Chemicals (Group I)		Synthetic Organic Chemicals (Group II)			
Alachlor	Aldicarb	Aldrin	Benzo(a)pyrene	Monitoring requirement is every 18 months NON DETECT Sample results from 11/6/17 *State waiver does not require monitoring these compounds	
Aldicarb Sulfoxide	Aldicarb Sulfone	Butachlor	Carbaryl		
Atrazine	Carbofuran	Dalapon	Di(2-ethylhexyl)adipate		
Chlordane	Dibromochloropropane	Di(2-ethylhexyl)phthalate	Dicamba		
2,4-D	Endrin	Dieldrin	Dinoseb		
Ethylene Dibromide	Heptachlor	Diquat*	Endothal*		
Lindane	Methoxyflor	Glyphosate*	Hexachlorobenzene		
PCB's	Toxaphene	Hexachlorocyclopentadiene	3-Hydroxycarbofuran		
2,4,5-TP (Silvex)		Methomyl	Metolachlor		
		Metribuzin	Oxamyl vydate		
		Pichloram	Propachlor		
		Simazine	2,3,7,8-TCDD (Dioxin)*		