

ORDINANCE NO. 0-201008-10-041

ORDINANCE AMENDING ORDINANCE NO. 0-200006-10-51

AN ORDINANCE ESTABLISHING GROUNDWATER MONITORING AND PROTECTION AT EARTH MATERIALS EXTRACTION SITES

WHEREAS, McHenry County has adopted Ordinance No. 0-200006-10-51 which amended Ordinance No. 0-9211-2200-77 which established a Groundwater Monitoring and Protection Ordinance; and

WHEREAS, the ordinance was established to provide for monitoring at earth materials extraction sites; and

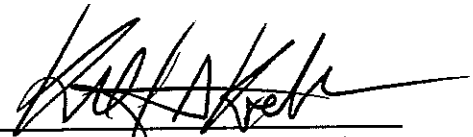
WHEREAS, monitoring at existing earth materials extraction sites has been occurring for the past 18 years; and

WHEREAS, the Planning and Development Committee has reviewed the Ordinance in effect; and

WHEREAS, the Planning and Development Committee recommends amendments to the Ordinance.

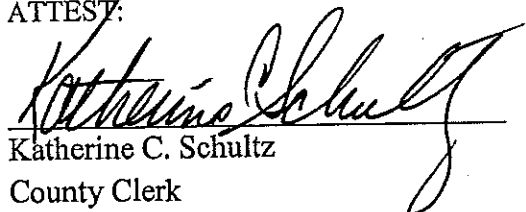
NOW, THEREFORE BE IT ORDAINED, that the attached Amended Ordinance be adopted; and that certified copies of this Ordinance be distributed to the Director of the McHenry County Department of Planning and Development and the McHenry County Department of Health.

DATED at Woodstock, Illinois this 17th day of August, A.D., 2010.



Kenneth D. Koehler, Chairman
McHenry County Board

ATTEST:


Katherine C. Schultz
County Clerk

I. POLICY STATEMENT: Glacial activity has left McHenry County with abundant sand and gravel deposits. These sand and gravel deposits are aquifers or link with aquifers that provide McHenry County residents directly or indirectly with 100% of their drinking water supplies. The sand and gravel deposits have the potential to readily transmit pollutants from surface and near surface activity into the groundwater. Once contamination occurs it is typically expensive to clean-up and may never be completely effective. Short and long term health effects can result from exposure to groundwater contaminants. Earth extraction sites are a potential route for groundwater contamination. It is with the thought of protecting this irreplaceable resource of groundwater now and in the future that this Ordinance is adopted.

II. APPLICABILITY:

A. This ordinance shall apply to all active earth material extraction sites in McHenry County where a conditional use permit has been granted under the 1989 McHenry County Zoning Ordinance, as amended from time to time, or upon which a specific condition has been imposed requiring groundwater monitoring.

B. Those earth material extraction sites that are exempted by Section 508.3 of the 1989 McHenry County Zoning Ordinance, as amended from time to time, are encouraged to be aware of this manual and to proceed with extreme caution.

III. COMPLIANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS: Nothing in this Ordinance shall exempt or supersede any local, state or federal regulatory requirements that an earth material extraction site may need to meet.

IV. OWNER'S RESPONSIBILITY

A. The Owner/Operator of an earth materials extraction site shall comply with all requirements of this Ordinance. Where reports and/or analysis are required, they shall be submitted in the frequency called for in Section V Paragraphs B 1 - 9.

B. The Zoning Enforcement Officer shall require monitoring reports at the frequency specified in Section V Paragraphs B 1 - 9 in compliance with this Ordinance by an earth extraction owner and/or his/her representative. Monitoring reports are to be conducted on January 30, April 30, July 30 and October 30 of each year that the operation continues.

C. The cost of setting up a groundwater monitoring network, monitoring and any remedial action to remedy contamination caused by the earth material extraction site is to be borne by the owner/operator.

D. The owner shall notify the Zoning Enforcement Officer (during regularly established working hours) at least 24 hours prior to sampling of the time and day that groundwater samples will be taken unless on the days specified above.

E. The Zoning Enforcement Officer, in conjunction with the Department of Health, reserves the right to enter the earth materials extraction site at all reasonable hours to collect samples or to co-sample any monitoring well.

F. Upon renewal of a conditional use permit for an existing earth extraction operation or upon approval of a conditional use permit

for a new earth extraction operation a baseline PNA (See Table I) shall be conducted.

V. GROUNDWATER MONITORING REQUIREMENTS

A. MONITORING WELL REQUIREMENTS

1. Existing Operations - For operations that currently exist pursuant to a previously issued conditional use permit by the McHenry County Board, the groundwater wells that were located by McHenry County's Consultant will be used to meet the groundwater monitoring requirements.

2. New Operation and Renewals of Existing Conditional Use Permits - Those earth extraction operations that are not required to conduct groundwater monitoring as of the date of adoption of this Ordinance shall establish site specific geology, aquifers and groundwater flows by a qualified professional hydrogeologist. Monitoring well locations shall be representative of the aquifer(s) impacted by the earth material extraction operation. There shall be a minimum of one (1) up gradient and two (2) down gradient wells established. The location, number of wells and depth(s) shall be contingent on the hydrogeological evaluation. Construction techniques and materials used shall be those consistent with acceptable standards for groundwater monitoring wells. Plans for placement, materials and construction details shall be submitted in writing by the hydrogeologist to the Zoning Enforcement Officer prior to construction. Monitoring wells shall not be modified, deepened or relocated without the prior approval of the Zoning Enforcement Officer.

3. Monitoring wells shall not be obstructed and shall remain accessible at all times for sampling.

4. Monitoring wells shall be maintained in good condition as designed and constructed and shall be protected from vehicular traffic.

5. Monitoring wells that have an insufficient quantity of water to conduct sampling for two (2) consecutive sampling events shall be deepened or relocated as approved by the Zoning Enforcement Officer to yield groundwater samples.

B. SAMPLING FREQUENCY AND PARAMETERS

1. Quarterly sampling shall be for those parameters listed in the general groundwater quality and contamination indicators in Table I. Results shall be provided in an electronic format to the Zoning Enforcement Officer, Department of Health and Water Resources Manager within forty-five (45) days of the sampling.

2. When sample results confirm an exceedance (See Table I) of chloride, nitrate or ammonium nitrogen or a detection of benzene, toluene, ethylbenzene or xylene, the monitoring well shall be re-sampled for that parameter within thirty (30) days with a copy of the results provided in an electronic format to the Zoning Enforcement Officer, Department of Health and Water Resources Manager within fourteen (14) days of the sampling.

3. Sampling of chloride, nitrate, pH, ammonium nitrogen, and specific conductance, may be reduced to annual subsequent to establishment of the background groundwater quality if there have been no exceedances (See Section V Paragraph C 1 and Table I) of chloride,

nitrate or ammonium nitrogen for the most recent full year of sampling.

4. Sampling of benzene, toluene, ethylbenzene and xylene may be reduced to annual subsequent to establishment of the background groundwater quality if there have been no detections of benzene, toluene, ethylbenzene, and xylene for the most recent full year of sampling.

5. In the event of an exceedance (See Section V Paragraph C 1 and Table I) of chloride, nitrate or ammonium nitrogen, the sampling frequency for that parameter shall return to quarterly.

6. In the event of a detection of benzene, toluene, ethylbenzene or xylene, the sampling frequency for that parameter shall return to quarterly.

7. Where asphalt batching, concrete mixing, or where petroleum products or other hazardous chemical storage takes place, the Zoning Enforcement Officer reserves the right to request additional parameters to be tested.

8. Additional water sampling parameters or frequency may be required if water contamination is indicated. This will be determined by the Zoning Enforcement Officer in conjunction with the Department of Health and the owner/operator. The Zoning Enforcement Officer will notify the owner/operator of the modified sampling parameters required.

9. Water samples are to be taken and tested by IEPA approved methods and procedures and protocol. The test wells shall be purged two times the volume of the well before the sample is drawn.

10. In the event that an exceedance of chloride, nitrate or ammonium nitrogen is due to natural background, resulted from an error in sampling, analysis or evaluation, or does not exceed the MCLs set forth in Table I and does not cause adverse health effects, the Code Enforcement Officer may, after consultation with the Health Authority, allow the sampling frequency to be reduced to annual.

11. In the event that an exceedance of chloride, nitrate or ammonium nitrogen is due to natural background or does not exceed the MCLs set forth in Table I and does not cause adverse health effects, the Code Enforcement Officer may, after consultation with the Health Authority, waive the requirement to resample the monitoring well within thirty (30) days.

C. CORRECTIVE (REMEDIAL) ACTION

1. Corrective action shall take place if a constituent is detected at or above the groundwater quality standard level contained in Table I or the background water quality is exceeded by three standard deviations. Corrective action shall include an inspection of the site by a qualified professional hydrogeologist to evaluate and identify any potential up-gradient, on-site and down-gradient sources of contamination.

2. Background water quality shall be established by sampling one or more monitoring points at depths and locations sufficient to yield groundwater samples that are representative of background water quality. Background groundwater quality for indicator parameters shall be determined by averaging a minimum of 8 sample results (over the normal two year sample period) for each well. The Zoning Enforcement

Officer, in conjunction with the Department of Health, may exclude any sample result which is non-representative of background water quality.

3. Standard deviation for a group of samples is equal to the square root of: the value of the sum of the squares of the difference between each sample in the sample group and the mean for that sample group divided by the number of samples in the sample group.

4. Investigative and corrective action shall begin to take place immediately upon receipt of reports which indicate contamination unless the Zoning Enforcement Officer specifies in writing upon application of the owner or operator wherein the owner or operator has demonstrated clearly to the Zoning Enforcement Officer in conjunction with the Department of Health that:

- a. The source of contamination is due to natural background; or
- b. The detection resulted from error in sampling, analysis, or evaluation; or
- c. The contamination will not exceed the M.C.L.'s set forth in Table I, the contaminants do not cause adverse health effects, and all actions have been undertaken to ensure the degree and extent of contamination is reduced; or
- d. The contamination is a result of contaminants remaining in groundwater from a prior release for which corrective action was undertaken in accordance with instructions from the appropriate agency; or
- e. The contamination is from a release upgradient of the monitoring wells and is clearly not from any activities on the site.

5. Corrective action shall be to remediate the contamination to below the action levels established herein and to strive to re-establish groundwater quality levels similar to upgradient groundwater quality. The cost of this remediation shall be borne by the party that caused the contamination to be introduced. If it is determined that the contamination is a result of the owner/operator's operation, the owner/operator shall be responsible for the cost.

VI. CESSATION OF MONITORING:

1. Upon completion of extraction and reclamation and acceptance of the completion of these items by the Zoning Enforcement Officer, the owner/operator shall be responsible for ground water testing for one year. Remediation shall be the responsibility of the owner/operator. The County shall continue to hold the Letter of Credit/Bond for reclamation until the one-year has expired.
2. After the one year monitoring period has been completed monitoring wells must be sealed per the requirements of the McHenry County Public Health Ordinance under a permit issued by the Department of Health at a cost to be borne by the operator.

TABLE I
GENERAL GROUNDWATER QUALITY INDICATORS

| <u>G.W. QUALITY STANDARDS</u> | | <u>SECONDARY STANDARDS</u> |
|-------------------------------|------------|----------------------------|
| <u>CLASS 1</u> | | |
| CHLORIDE | 250 mg/l | |
| NITRATE (as N) | 10 mg/l | |
| PH | | <6.5 – 8.5> |
| AMMONIUM NITROGEN | | ≤ 1.5 |
| SPECIFIC CONDUCTANCE | | 850 umhos/cm |
| BENZENE | 0.005 mg/l | |
| TOLUENE | 1.0 mg/l | |
| ETHYLBENZENE | 0.7 mg/l | |
| XYLENE (total) | 10.0 mg/l | |

Polynuclear Aromatics (PNA)

G.W. QUALITY STANDARDS
CLASS 1

CHEMICAL COMPOUND

| | |
|---------------------------|--------------|
| Acenaphthene | 0.42 mg/L |
| Acenaphthylene* | 0.023 mg/L |
| Anthracene | 2.1 mg/L |
| Benzo (a) anthracene | 0.00013 mg/L |
| Benzo (b) fluoranthene | 0.00018 mg/L |
| Benzo (k) fluoranthene | 0.00017 mg/L |
| Benzo (a) pyrene | 0.0002 mg/L |
| Benzo (g,h,i) perylene* | 0.0076 mg/L |
| Chrysene | 0.0015 mg/L |
| Dibenzo (a,h) anthracene | 0.0003 mg/L |
| Fluoranthene | 0.28 mg/L |
| Fluorene | 0.28 mg/L |
| Indeno (1,2,3-c,d) pyrene | 0.00043 mg/L |
| Naphthalene | 0.025 mg/L |
| Phenanthrene* | 0.0064 mg/L |
| Pyrene | 0.21 mg/L |

GROUNDWATER LEVELS SHALL BE MEASURED IN FEET TO ONE DECIMAL PLACE EACH TIME A SAMPLE IS TAKEN.

STATE OF ILLINOIS)
) SS
COUNTY OF MCHENRY)

I, Katherine C. Schultz, County Clerk within and for said County and State aforesaid, do hereby certify the attached to be a true and complete copy of Ordinance No. O-201008-10-041 Approve ordinance amending Ordinance No. O-200006-10-51 establishing groundwater monitoring and protection at earth materials extraction sites. WHEREOF I have hereunto subscribed my hand and affixed the official seal of said County, at my office in Woodstock, Illinois this 18th day of

August A.D. 2010.

Katherine C Schultz
McHenry County Clerk