

\*  
\*\*  
\*\*\*

Mg<sup>2+</sup> Ca<sup>2+</sup> Na<sup>+</sup> K<sup>+</sup> HCO<sub>3</sub><sup>-</sup> Cl<sup>-</sup> NO<sub>3</sub><sup>-</sup> N  
EC TH SO<sub>4</sub><sup>2-</sup>  
/ / / / /  
/ / / / /  
( ) ( ) ( )  
( ) ( ) ( )  
( ) ( ) ( )

// :

// :

\*  
\*\*  
\*\*\*

---

( ) EPA ( )  
/  
( )  
/ (Hamilton et al., 1995)  
EPA /  
( ) Goolsby et al.,2000 & )  
/ / / (O'Neil et al., 1990  
( ) ( )  
(Tesch and et al.,2003) EPA (Blue baby syndrome)  
(Bowers, 2000) ( )  
(Goolsby and et al., 2000&O'Neil and et al., 1990) (Hamilton et al.,1995)  
( )  
(Nehls and et al.,2001) (Kraft and et al.,2003)  
Kraft, 2003  
( )  
Angle and et al., 1993 . ( )  
Abdorashid and et al.,2000 . ( )  
/ /  
( )

/ +/ /  
 / /  
 +/ / / /  
 )

( )

( )

( / )

( )

o ' " o ' "  
 o ' " o ' "

(Am. Publ. Health Assoc.,1992)

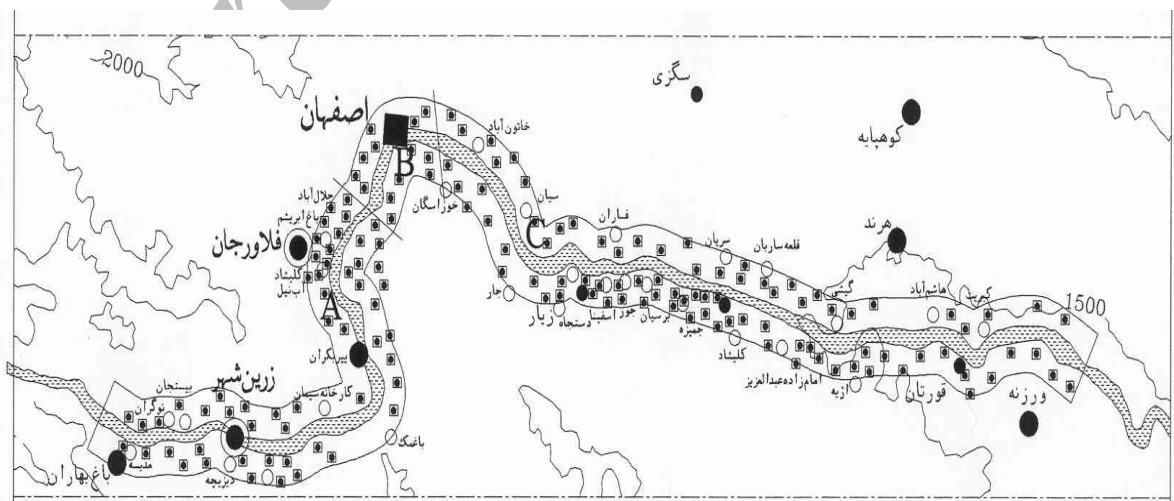
SPSS

Excel

(:)

( )

		)	)	
		(	(	



شمال



(:)

( ) EPA

( )

( )

( )

:( )

%	%	%	%	%	/ (ppm)
%	%	%	%	%	(ppm)
%	%	%	%	%	(ppm)
%	%	%	%		(ppm)
%	%				> (ppm)

( )

(EPA

/)

:( )

(EPA)

NO <sub>3</sub> <sup>-</sup> (ppm)	NO <sub>3</sub> -N (ppm)	TH (mg/l CaCO <sub>3</sub> )	TDS (mg/l)	pH	
				/ /	
Mg <sup>2+</sup> (mg/l)	Ca <sup>2+</sup> (mg/l)	K <sup>+</sup> (meq/l)	Na <sup>+</sup> (meq/l)	SO <sub>4</sub> <sup>2-</sup> (meq/l)	

:( )

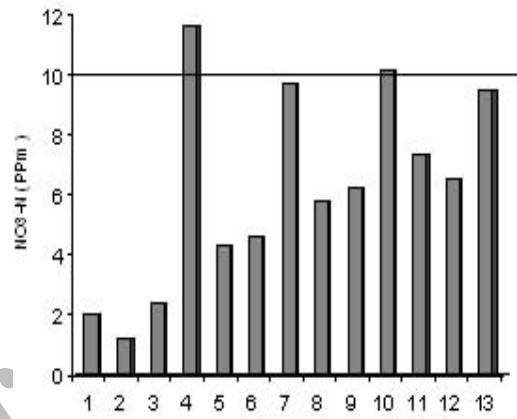
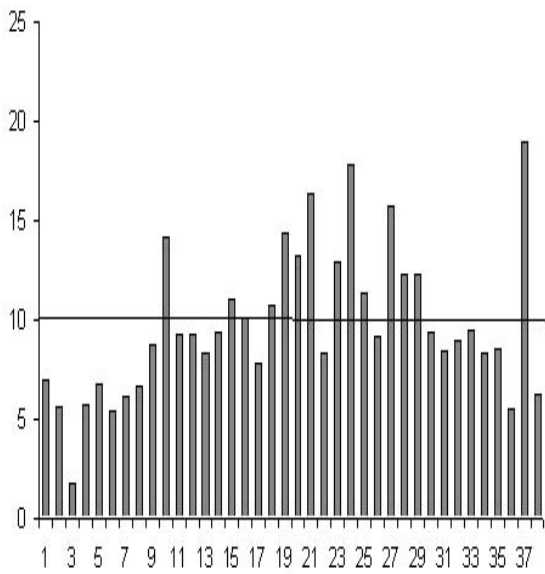
:( )

/	/	/	/	/	NO <sub>3</sub> -N (ppm)
/	/	/	/	/	
/	/	/	/	/	
/	/	/	/	/	HCO <sub>3</sub> <sup>-</sup> (ppm)
/	/	/	/	/	
/	/	/	/	/	
/	/	/	/	/	Cl <sup>-</sup> (ppm)
/	/	/	/	/	
/	/	/	/	/	
/	/	/	/	/	SO <sub>4</sub> <sup>2-</sup> (ppm)
/	/	/	/	/	
/	/	/	/	/	
/	/	/	/	/	K <sup>+</sup> (ppm)
/	/	/	/	/	
/	/	/	/	/	

/	/	/	/	/		
/	/	/	/	/		
/	/	/	/	/		
/	/	/	/	/		
/	/	/	/	/		
/	/	/	/	/		
/	/	/	/	/		)
/	/	/	/	/		
/	/	/	/	/		
/	/	/	/	/		(
/	/	/	/	/		
/	/	/	/	/		
/	/	/	/	/		(
/	/	/	/	/		
/	/	/	/	/		

( )  
 ( ) )  
 ( ) (

EPA



( )

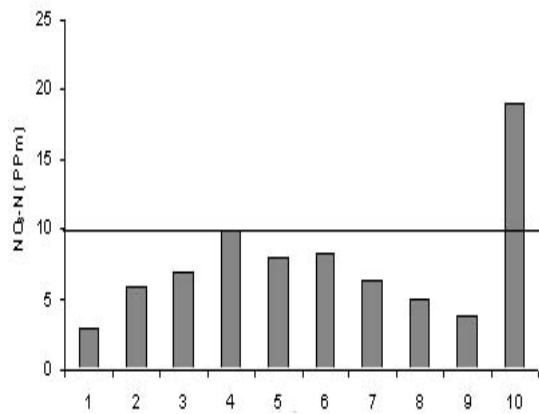
Architect

( )

( )  
 ( )

EPA

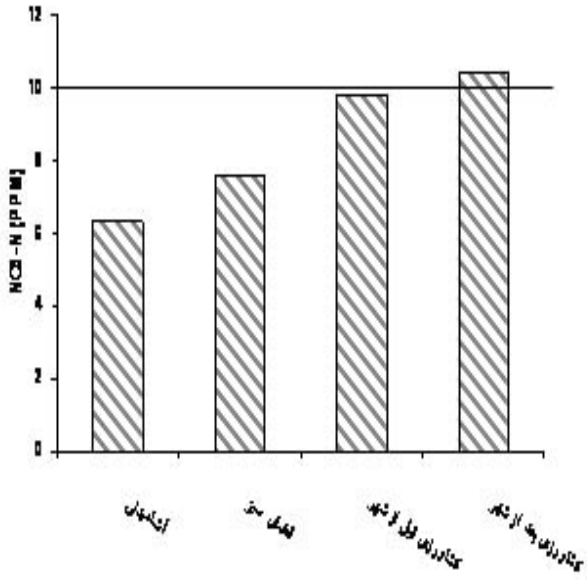
PH



( )

F

( )

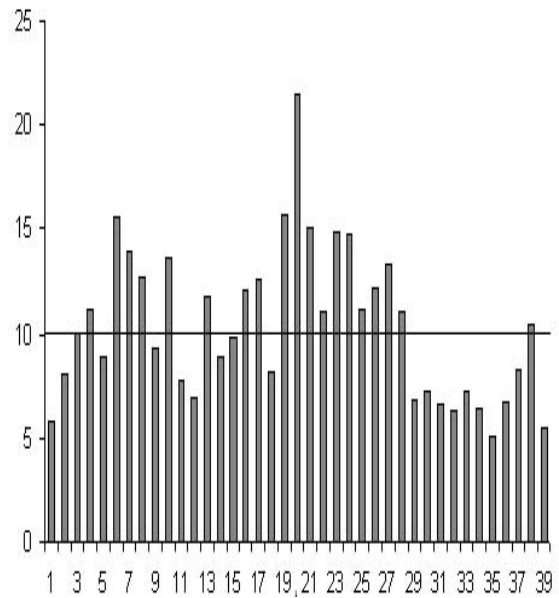


( )

F	R <sup>2</sup>	R <sup>2</sup>		
/	/	/	/	
/	/	/	/	
/	/	/	/	
/	/	/	/	
			/	

( )

( )



( )

Archive of SID

---

denitrification rate under corn production in sandy loam soil in Quebec. *J. Agric. Ecosys. and Environ.* 79, 187-197.

Am. Publ. Health Assoc., Am. Water Works Assoc. and Water Poll. Contr. Fed. 1992. Standard methods for the examination of water and wastewater. 14<sup>th</sup> ed., Washington, DC.

Angle, J. S., Gross, C. M., Hill, R. L., and McIntosh, M. S. 1993. Soil nitrate concentrations under corn as affected by tillage, manure, and fertilizer application. *J. Environ. Qual.* 22, 141-147.

Bowers, F. H. 2000. Septic system and nitrate nitrogen as indicators of groundwater quality trends in New Jersey. New Jersey Dept. of Environ. Protec.

Goolsby, D. A. 2000. Mississippi basin nitrogen flux believed to cause Gulf hypoxia: EOS. *Trans. Am. Geophys. Union* 81, 321-327.

Hamilton, P. A., and Helsel, D. A. 1995. Effects of agriculture on ground-water quality in five regions of the United States. *Ground Water* 33, 217-226.

<http://www.epa.gov/safewater/mcl.htm>.

Kraft, G. J., and W. Stites. 2003. Nitrate impacts on ground water from irrigated-vegetable systems in a humid north-central US sand plain. *Agricultural Ecosystems and Environ.* 100, 63-74.

Nehls, T., Arriaga, F., Kelling, K. A., and Lowery, B. 2001. Nitrate loading under different N rates and

Abdorashid, A. E., Madramootoo, C., and Hamel, C. 2000. Influence of water table and nitrogen management on residual soil  $\text{NO}_3^-$  and

---

surfactants and potato yield. In: Proceeding of the Wis. Ann. Potato Mtgs., Vol. 14, University of Wisconsin-Extension, Madison, WI, pp. 79-85.

Oneil, W. B., and Raucher, R. S., 1990. The costs of groundwater contamination. J. Soil Water Conserv. 45, 180-183.

Tesch, C., Carlson, R. and Fox, J. 2003. Ground water nitrate monitoring in Cassia County, Idaho. State Dept. of Agric., Div. of Agric. Resources, 7 p.

Archive of SID