DEPARTMENT OF ECOLOGY

November 24, 1993

Implementation Memo No. 3

TO: Interested Staff

FROM: Steve Robb SR
Toxics Cleanup Program

SUBJECT: PQLs as Cleanup Standards

ISSUES

Two issues have been raised with regard to the use of practical quantitation limits (PQLs) in setting cleanup levels:

- **The "legal" issue of PQLs as cleanup levels and whether or not PLPs have any long-term liability for sites cleaned up to the PQL level rather than the risk based level. Can PLPs receive a covenant not to sue in these situations? Are they required to utilize institutional controls and conduct long-term monitoring?**

- **When risk based compliance values are less than PQLs, what value is used in the risk summation calculation, the risk-based value or the PQL?**

I. LONG-TERM LIABILITY

The Model Toxics Control Act (MTCA) states "where cleanup levels are below the PQL, compliance with cleanup standards will be based upon the PQL" (WAC 173-340-700(6) Measuring compliance). Also stated in the rule, "If those situations arise and the practical quantitation limit is higher than the cleanup level for that substance, the cleanup level shall be considered to have been attained, subject to subsection (4) of this section..." (WAC 173-340-707(2) Analytical considerations). Therefore, the PQL becomes the compliance value, and PLPs who attain the PQL are eligible for a covenant not to sue. WAC 173-340-

707(4) places one additional burden however, and that is a requirement for periodic review of the cleanup action in which the department, in reviewing the cleanup action, shall "consider the availability of improved analytical techniques." Therefore, any covenant must have a reopener which would allow the department to take action if necessary.

Long-term monitoring is not required as long as the remedy does not specifically involve containment. However, it is possible that the remaining, unquantified, risk at a site could be sufficient to cause concern. This situation makes it very important for project managers to require PLPs to attempt to quantify those contaminants which have high PQLs. We need to avoid situations in which PLPs may leave unquantified contamination and that upon periodic review new analytical data demonstrates that further action is necessary. The rule supports the use of special analytical methods and/or institutional controls to address this situation.

WAC 173-340-707(3) gives project managers the flexibility to require special sampling and analytical methods. PQLs should not be used to justify unnecessarily high compliance levels. In cases where the risk-based cleanup level is less than the PQL, site managers should calculate, using the appropriate formula, the risk the contaminant would represent if it were present at the PQL concentration. As this risk approaches the $1x10^{-5}$ level, serious consideration should be given to use of surrogate measures of the hazardous substance or development of specialized sample collection and/or analysis techniques. If the risk posed by a contaminant concentration at the PQL level exceeds the $1x10^{-5}$ level, project managers should consider requiring special analytical methods which can quantify the contaminant concentration at least to the $1x10^{-5}$ level.

In support of this approach, the Responsiveness Summary (RS) acknowledges that in meeting its mission to protect human health and the environment, Ecology cannot ignore concentrations below current quantitation limits. In doing so, the RS states, we would be placing ..."human health and the environment 'at the mercy of analytic quantitation limits' and would be inconsistent with the statute's overriding objectives" (p. 107).

Finally, WAC 173-340-440(1)(a) requires institutional controls "when the department determines such controls are required to assure the continued protection of human health and the environment or the integrity of the cleanup action." In situations where the PQL is above cleanup levels (i.e. exceed the $1x10^{-5}$ level) project managers should evaluate the need for institutional controls, particularly if special analytical methods are inadequate.

II. RISK SUMMATION CALCULATIONS BASED ON PQLs

MTCA requires the development of cleanup levels that are protective of human health and the environment. For carcinogenic substances, protection is defined as a cumulative site risk that does not exceed 1 in 100,000 ($1x10^{-5}$). However, our inability to reliably

measure some contaminant concentrations at calculated risk-based levels hinders our ability to measure total site risk.

In some situations the risk posed by a single contaminant at the PQL concentration outweighs the risk of all the other contaminants put together. Using such a PQL risk value in the risk summation calculation will negate the usefulness of both the risk summation and the $1x10^{-5}$ cumulative site risk requirement. In this situation, to calculate overall site risk, use the risk-based cleanup level rather than the PQL. The other contaminant concentrations can then be adjusted downward, as necessary, so the adjusted total site risk does not exceed $1x10^{-5}$. The final list of compliance levels should show the single contaminant at the PQL value and the other contaminants at their adjusted levels.

When adjusting individual cleanup levels to meet the 1 in a 100,000 total risk standard at sites with multiple contaminants becomes necessary, do not adjust a contaminant below its PQL. For example, the cleanup level for trichloroethylene (TCE) in groundwater is 3.98 ppb and the PQL is 0.5 ppb. If higher cleanup levels for other compounds required the TCE cleanup level to be adjusted downward, it should not be adjusted below 0.5 ppb.

One final clarification regarding risk summation is warranted. Method B specifically establishes cleanup levels based on a risk of one in a million for individual carcinogenic contaminants. When multiple contaminants and/or multiple pathways of exposure are involved, MTCA allows for a cumulative site risk of no more than one in a hundred thousand (e.g. WAC 173-340-720(5)). **The one in a hundred thousand risk level is intended to serve as a cap, or ceiling, on the cumulative site risk at cleanup sites with multiple contaminants and is not a goal.**

For example, when the cumulative site risk total is $8x10^{-5}$, cleanup levels for individual constituents must be adjusted downward until the cumulative site risk is equal to or less than $1x10^{-5}$. Alternately, at sites where the total cumulative site risk is $8x10^{-6}$, for example, no downward adjustment is necessary, since the risk does not exceed $1x10^{-5}$. However, adjustment upward for individual contaminants is not permitted under MTCA since individual contaminants must still meet the $1x10^{-6}$ (or $1x10^{-5}$ for Method C) limit.

Risk Communication

How we portray risk to the public is important to the implementation of the rules. When cleanup levels are based on PQL values, Ecology site managers should explain that technical limitations may prohibit us from measuring contaminants at levels that correspond to a risk of $1x10^{-6}$. This explanation should be part of the Cleanup Action Plan (CAP) and any public hearings where cleanup levels and risk are discussed. The CAP should include a list of risk-based levels as well as a list of the compliance levels.

Analytical Guidelines

- Know your expected PQLs. Communicate with your laboratory if you have any doubts, special expectations, or special analytical needs. Before your analytical work is requested be sure that the results to be provided by your laboratory will meet your requirements.

- With the analytical results, the estimates of the PQLs for each sample matrix along with an explanation of how the PQL was determined should be provided by the laboratory.

- Appropriate quality assurance and quality control (QA/QC) data should be provided by the laboratory for all sets of samples.

What Are The PQLs?

There is no definitive list of PQLs. However, Ecology has put together tables of PQLs, MDLs (method detection limits), and comparisons to Method B numbers for groundwater, surface water, and soil. These tables are based on surveying published methods and laboratories. There are many factors that can produce a different PQL for one sample as compared to another. However, these tables can be useful guidance. Ecology refers you to the guidance for the use of the tables and also to a discussion on the meaning of PQLs. These are found as 3 additional parts to this memorandum. The four parts are:

Part I:	*Implementation Memo No. 3--PQLs as Cleanup Standards (this document)*
Part II:	*Guidance For The Use of Tables*
Part III:	*MDL, PQL, and Comparisons Tables*
Part IV:	*Appendix--Meaning of Quantitation Limits*

pqlmemo3.sr

GUIDANCE FOR THE USE OF TABLES: PRACTICAL QUANTITATION LIMITS (PQLS), METHOD DETECTION LIMIT (MDLS), AND PQL COMPARISONS TO METHOD B CLEANUP LEVELS

This guidance is Part II of a four parts. They are:

Part I:	*Implementation Memo No. 3--PQLs as Cleanup Standards*
Part II:	*Guidance For The Use of Tables (this document)*
Part III:	*MDL, PQL, and Comparisons Tables*
Part IV:	*Appendix--Meaning of Quantitation Limits*

The Model Toxics Control Act (MTCA) provides human health risk-based cleanup levels for contaminants at cleanup sites. For certain compounds the risk-based values (Method B values) are less than the lowest levels which can be routinely quantified and reported by a laboratory. These lowest levels are known as the "practical quantitation limits" (PQLs). The "method detection limit" (MDL) is mostly used by the laboratory analyst and not usually reported but can provide useful information to the site manager.

To provide a cleanup site manager with information on PQLs and the MDLs we prepared tables of these values including a comparison to the MTCA Method B levels.

The MDL and/or PQL for a substance can be useful when requesting analytical work to verify it is possible to achieve the desired analytical limit. With information in these tables about the MDLs and PQLs for different analytical methods the site manager can choose the appropriate method and avoid wasteful analytical work not providing the desired limit. The site manager can also use these tables to check data to verify that the reported analytical limit is indeed reasonable.

What if the PQL exceeds the MTCA cleanup level? Ecology may require the use of surrogate measures of contamination; the use or development of specialized sample collection or analysis techniques to improve the method detection limit or practical quantitation limits for the hazardous substances at the site; monitoring to assure the concentration of a hazardous substance does not exceed detectable levels; or institutional controls in the event that the uncertainty posed by the limits of technology is unacceptable. Ecology also shall consider the availability of improved analytical techniques when performing periodic reviews. Subsequent to those reviews, the department may require the use of improved analytical techniques with lower practical quantitation limits and other appropriate actions (see WAC 173-340-707 Analytical considerations).

The PQLs listed in the tables are from published methods and confirmed by a number of laboratories. However, the PQLs for a given set of samples may vary for numerous reasons (see a discussion on PQLs in Part IV, Appendix).

The attached PQL/MDL tables are not intended to replace Method B values, or be used as "default cleanup values." They should be used for the purposes described above.

It is suggested at the time of sample submittal, the site manager discuss with the laboratory the available analytical methods. A particular method should be chosen to provide the required degree of protection as well as to keep analytical costs as low as possible. This is especially important when there are multiple contaminants but one contaminant "drives" the cleanup level. Choosing a method with a PQL lower than the cleanup level, if possible, will be very important.

The tables are for water (ground and surface water) and soil. The following is a description of the columns found on the tables:

CAS: Chemical Abstract Service registry number; a unique number assigned to a specific chemical.

Chemical Name: The chemicals listed in the PQL tables were derived from the "Washington Ranking Method for Site Hazard Assessment." *Not all chemicals from the "Cleanup Levels and Risk Calculation" (CLARC II) database are contained within the PQL tables.*

Names of organic chemicals are frequently preceded by numbers or certain letters used to describe the structure of the chemical. For purposes of indexing chemical names, this structural information is placed at the end of the chemical name.

Method: Some of the method numbers listed in this column refer to analytical methods listed in "Test Methods for Evaluating Solid Waste", US EPA SW 846. The 3000 series number refer to procedures used to prepare sample for analysis; 7000 series numbers refer to atomic absorption test methods; 8000 - 8100 series numbers refer to gas chromatographic methods; 8310 series numbers refer to high pressure liquid chromatography methods; and 9000 series numbers refer to colorimetric (spectrophotometric methods).

Another source of analytical methods is the Code of Federal Regulations, Vol. 40, Parts 136 and 141 for establishing test procedures for the analysis of pollutants. The 200 series numbers apply to metals analysis; the 500 series to the analysis of organics in potable water; and the 600 series numbers to the analysis of organics compounds in drinking and waste water.

These are the primary sources of methods used by Ecology. These and others are identified in WAC 173-340-830 Analytical procedures.

Detector: The detector is the device that responds to the presence of the chemical after separation. Detectors vary in sensitivity to the individual chemicals.

AA	Atomic absorption spectroscopy
Color	Colorimetric method, spectrophotometry
HPLC	High pressure liquid chromatography
GC ECD	Separation of contaminant mixtures into individual components using gas chromatography and an electron capture detector
GC FID	Separation of contaminant mixtures into individual components using gas chromatography and a flame ionization detector
GC Hall	Separation of contaminants mixtures into individual components using gas chromatography and a Hall electrolytic conductivity detector
GC MS	Separation of contaminant mixtures into individual components using gas chromatography and mass spectrometry
GC NP	Separation of contaminant mixtures into individual components using gas chromatography and a nitrogen/ phosphorous detector
GC PID	Separation of contaminant mixtures into individual components using gas chromatography and a photoionization detector
GFAA	Analysis by graphite furnace atomic absorption
GHAA	Analysis by gaseous hydride atomic absorption
ICP	Analysis by inductively coupled plasma emission

MDL: Method Detection Limit: The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The MDL values provided in the tables are values derived from WAC 173-340-830(4), e.g. *Test Methods for Evaluating Solid Waste*, U.S. EPA, SW-846, and compiled by PTI Environmental Services.

PQL: Practical Quantitation Limit: This is the concentration that can be reliable measured within specified limits during routine laboratory operating conditions using Ecology approved methods (see Part IV). The PQL values provided in the tables are values derived from WAC 173-340-830(4), e.g. *Test Methods for Evaluating Solid Waste*, U.S. EPA, SW-846, and compiled by PTI Environmental Services. In cases where there are no known PQL

values (such as from the Federal Registry 40 CFR 136 & 141; 500 and 600 series), a factor of 10 times the MDL is used for the PQL value.

NOTE: "Table I Water" is reported in ug/l (ppb), "Table II Soil" is reported in mg/kg (ppm).

PQL Range: The range of thirteen responses out of a survey conducted by Ecology of fifty independent environmental laboratories. The survey was conducted to determine the range of PQLs achievable by specific matrixes, methods, and detectors. The laboratories surveyed routinely conduct these types of environmental analyses.

In some instances (indicated by a "**thumbs-up**" icon in the tables), the laboratories were able to attain a PQL lower than the federal PQL. For example, Table II for soil indicates antimony using Method 6010 attains a PQL range of 1.5 - 10 mg/kg with a PQL of 16 mg/kg.

Method B: The $1x10^{-6}$ (for carcinogens) Method B values are provided in Tables I and II for purposes of comparison with MDL and PQL values. Only carcinogens are included because there are frequently both PQL and Method B values for the same compound and non-carcinogens are usually higher and often do not list both a Method B value and a PQL.

PQL > GW or SW or Soil Method B These columns compare the PQL with the Method B ground water (GW); surface water (SW); or soil formula values in their respective columns/tables.

The following conditions are displayed:

A **blank cell** indicates either (1) the Method B values is greater than the PQL, or (2) there is no PQL value available for comparison;

The "**bomb**" icon indicates the PQL is greater than the Method B formula value;

The "**flag**" icon indicates there is currently no Method B value in Ecology's Cleanup Levels and Risk Calculations (CLARC II) available for comparison.

pqlguide.er

TA[illegible]I: WATER

MDLs, PQLs, and Comparison of Method B Values (µg/L)

♿ Lab PQL Range < Published PQL

CAS	Chemical	Method	Matrix	Detector	MDL (µg/L)	PQL (µg/L)	♿	LABORATORY PQL RANGE ug/L	Method B GW Value (µg/L) - C	♿ PQL > GW Method B (flag = na)	Method B SW Value (µg/L) - C	♿ PQL > SW Method B (flag = na)
83-32-9	acenaphthene	625	Wastewater	GC/MS	1.9	19		0.8 - 19				
83-32-9	acenaphthene	1625	Wastewater		10	100		0.8 - 100				
83-32-9	acenaphthene	8270	Groundwater	GC/MS		10		0.8 - 10				
83-32-9	acenaphthene	610/8310	Waste/Groundwater	HPLC	1.8	18		0.8 - 18				
208-96-8	acenaphthylene	625	Wastewater	GC/MS	3.5	35		1 - 35	n/c	♿	n/c	♿
208-96-8	acenaphthylene	8270	Groundwater	GC/MS		10		1 - 10	n/c	♿	n/c	♿
208-96-8	acenaphthylene	610/8310	Waste/Groundwater	HPLC	2.3	23		1 - 23	n/c	♿	n/c	♿
67-64-1	acetone	8240	Groundwater	GC/MS		10		1 - 50				
107-02-8	acrolein	603	Wastewater	GC-FID	0.6	6						
107-02-8	acrolein	8030	Groundwater	GC-FID	0.7	7		1 - 50				
79-06-1	acrylamide	8015	Groundwater	GC-FID					9.72E-3			
107-13-1	acrylonitrile	603	Wastewater	GC-FID	0.5	5		1 - 10	8.10E-2	♿*	4.00E-1	♿*
107-13-1	acrylonitrile	8030	Groundwater	GC-FID	0.5	5		1 - 20	8.10E-2	♿*	4.00E-1	♿*
15972-60-8	alachlor	102	Wastewater	GC-ECD	0.2	2			1.08E+0	♿*		
15972-60-8	alachlor	505.2	Drinking Water	GC-ECD	0.225	2			1.08E+0	♿*		
15972-60-8	alachlor	507	Drinking Water	GC-N/P	0.38	4			1.08E+0	♿*		
116-06-3	aldicarb	531.1	Drink/Groundwater	HPLC	1	10						
309-00-2	aldrin	617	Wastewater	GC-ECD	0.009	0.09			5.15E-3	♿*	8.16E-5	♿*
309-00-2	aldrin	625	Wastewater	GC/MS	1.9	19			5.15E-3	♿*	8.16E-5	♿*
309-00-2	aldrin	505/508	Drinking Water	GC-ECD	0.075	0.8			5.15E-3	♿*	8.16E-5	♿*
309-00-2	aldrin	608/8080	Groundwater	GC-ECD	0.004	0.04		0.005 - 0.04	5.15E-3	♿*	8.16E-5	♿*
62-53-3	aniline	8270	Groundwater	GC/MS		10		2 - 10	1.54E+1			
120-12-7	anthracene	625	Wastewater	GC/MS	1.9	19		1 - 19				
120-12-7	anthracene	8270	Groundwater	GC/MS		10		1 - 10				
120-12-7	anthracene	610/8310	Waste/Groundwater	HPLC	0.013	0.1		0.1 - 1				
7440-36-0	antimony	204.1	Water	FAA	200	2000						
7440-36-0	antimony	6010	Groundwater	ICP	32	320	♿	10 - 60				
7440-36-0	antimony	204.2/7041	Groundwater	GFAA	3	30						
140-57-8	aramite	8270	Groundwater	GC/MS		20		2 - 20	3.50E+0	♿*		
12674-11-2	Aroclor 1016 (PCB)	505	Drinking Water	GC-ECD	0.08	0.8						
12674-11-2	Aroclor 1016 (PCB)	608/8080	Waste/Groundwater	GC-ECD		0.65		0.05 - 0.65				
11104-28-2	Aroclor 1221 (PCB)	505	Drinking Water	GC-ECD	15	150			n/c	♿	n/c	♿
11104-28-2	Aroclor 1221 (PCB)	508	Drinking Water	GC-ECD	0.14	1			n/c	♿	n/c	♿
11104-28-2	Aroclor 1221 (PCB)	608/8080	Waste/Groundwater	GC-ECD		0.65		0.05 - 1	n/c	♿	n/c	♿
11141-16-5	Aroclor 1232 (PCB)	505	Drinking Water	GC-ECD	0.48	5			n/c	♿	n/c	♿
11141-16-5	Aroclor 1232 (PCB)	508	Drinking Water	GC-ECD	0.23	2			n/c	♿	n/c	♿

n/c = not calculated

pqlh2o.xls

TABLE I: WATER

MDLs, PQLs, and Comparison of Method B Values (µg/L)

♂ Lab PQL Range < Published PQL

CAS	Chemical	Method	Matrix	Detector	MDL (µg/L)	PQL (µg/L)	♂	LABORATORY PQL RANGE ug/L	Method B GW Value (µg/L) - C	♂* PQL > GW Method B (flag = na)	Method B SW Value (µg/L) - C	♂* PQL > SW Method B (flag = na)
11141-16-5	Aroclor 1232 (PCB)	608/8080	Waste/Groundwater	GC-ECD		0.65		0.05 - 1	n/c	♂	n/c	♂
53469-21-9	Aroclor 1242 (PCB)	505	Drinking Water	GC-ECD	0.31	3			n/c	♂	n/c	♂
53469-21-9	Aroclor 1242 (PCB)	508	Drinking Water	GC-ECD	0.21	2			n/c	♂	n/c	♂
53469-21-9	Aroclor 1242 (PCB)	608/8080	Waste/Groundwater	GC-ECD	0.065	0.65		0.05 - 1	n/c	♂	n/c	♂
12672-29-6	Aroclor 1248 (PCB)	505	Drinking Water	GC-ECD	0.102	1			n/c	♂	n/c	♂
12672-29-6	Aroclor 1248 (PCB)	508	Drinking Water	GC-ECD	0.15	2			n/c	♂	n/c	♂
12672-29-6	Aroclor 1248 (PCB)	608/8080	Waste/Groundwater	GC-ECD		1.3		0.05 - 1.3	n/c	♂	n/c	♂
11097-69-1	Aroclor 1254 (PCB)	505	Drinking Water	GC-ECD	0.102	1			n/c	♂	n/c	♂
11097-69-1	Aroclor 1254 (PCB)	508	Drinking Water	GC-ECD	0.14	1			n/c	♂	n/c	♂
11097-69-1	Aroclor 1254 (PCB)	608/8080	Waste/Groundwater	GC-ECD		1.3		0.05 - 1.3	n/c	♂	n/c	♂
11096-82-5	Aroclor 1260 (PCB)	505	Drinking Water	GC-ECD	0.189	2			n/c	♂	n/c	♂
11096-82-5	Aroclor 1260 (PCB)	508	Drinking Water	GC-ECD	0.14	1			n/c	♂	n/c	♂
11096-82-5	Aroclor 1260 (PCB)	608/8080	Waste/Groundwater	GC-ECD					n/c		n/c	
7440-38-2	arsenic	206.2	Water	GFAA	1	10		0.01 - 100	5.00E-2	♂*	8.42E-2	♂*
7440-38-2	arsenic	206.3	Water	FAA	2	20			5.00E-2	♂*	8.42E-2	♂*
7440-38-2	arsenic	7061	Groundwater	GH-AA	2	20			5.00E-2	♂*	8.42E-2	♂*
7440-38-2	arsenic	200.7/6010	Groundwater	ICP	53	530			5.00E-2	♂*	8.42E-2	♂*
1332-21-4	asbestos	NPDES-400	Wastewater									
1912-24-9	atrazine	619	Wastewater	GC/NP		5		0.9 - 5	3.98E-1	♂*		
103-33-3	azobenzene	8270	Groundwater	GC/MS		330		52 - 330	7.95E-1	♂*		
56-55-3	benz[a]anthracene	625	Wastewater	GC/MS	7.8	78		1 - 78	1.20E-2	♂*	2.96E-2	♂*
56-55-3	benz[a]anthracene	8270	Groundwater	GC/MS		10		1 - 10	1.20E-2	♂*	2.96E-2	♂*
56-55-3	benz[a]anthracene	610/8310	Waste/Groundwater	HPLC	0.013	0.1		0.1 - 1	1.20E-2	♂*	2.96E-2	♂*
71-43-2	benzene	502.2	Drinking Water	GC-PID	0.01	0.1			1.51E+0		4.30E+1	
71-43-2	benzene	503.1	Drinking Water	GC-PID	0.02	0.2			1.51E+0		4.30E+1	
71-43-2	benzene	524.1	Drinking Water	GC/MS	0.1	1			1.51E+0		4.30E+1	
71-43-2	benzene	524.2	Drinking Water	GC/MS	0.04	0.4			1.51E+0		4.30E+1	
71-43-2	benzene	602	Wastewater	GC-PID	0.2	2			1.51E+0	♂*	4.30E+1	♂*
71-43-2	benzene	624	Wastewater	GC/MS	4.4	44			1.51E+0	♂*	4.30E+1	
71-43-2	benzene	8020	Groundwater	GC-PID	0.2	2		0.5 - 10	1.51E+0	♂*	4.30E+1	
71-43-2	benzene	8240	Groundwater	GC/MS		5		0.5 - 10	1.51E+0	♂*	4.30E+1	
92-87-5	benzidine	605	Wastewater	HPLC	0.08	0.8			3.80E-4	♂*	3.22E-4	♂*
92-87-5	benzidine	625	Wastewater	GC/MS	44	440			3.80E-4	♂*	3.22E-4	♂*
50-32-8	benzo[a]pyrene	625	Wastewater	GC/MS	2.5	25		1 - 25	1.20E-2	♂*	2.96E-2	♂*
50-32-8	benzo[a]pyrene	8270	Groundwater	GC/MS		10		2 - 10	1.20E-2	♂*	2.96E-2	♂*
50-32-8	benzo[a]pyrene	610/8310	Waste/Groundwater	HPLC	0.023	0.2		0.2 - 2	1.20E-2	♂*	2.96E-2	♂*

n/c = not calculated

pqlh2o.xls

10/12/93

T/ I: WATER

MDLs, PQLs, and Con. ison of Method B Values (µg/L)

Lab PQL Range < Published PQL

CAS	Chemical	Method	Matrix	Detector	MDL (µg/L)	PQL (µg/L)		LABORATORY PQL RANGE ug/L	Method B GW Value (µg/L) - C	PQL > GW Method B (flag=na)	Method B SW Value (µg/L) - C	PQL > SW Method B (flag=na)
205-99-2	benzo[b]fluoranthene	625	Wastewater	GC/MS	4.8	48			1.20E-2		2.96E-2	
205-99-2	benzo[b]fluoranthene	8270	Groundwater	GC/MS		10		3 - 10	1.20E-2		2.96E-2	
205-99-2	benzo[b]fluoranthene	610/8310	Waste/Groundwater	HPLC	0.018	0.2		0.2 - 3	1.20E-2		2.96E-2	
191-24-2	benzo[g,h,i]perylene	625	Wastewater	GC/MS	4.1	41			n/c		n/c	
191-24-2	benzo[g,h,i]perylene	8270	Groundwater	GC/MS		10		2 - 10	n/c		n/c	
191-24-2	benzo[g,h,i]perylene	610/8310	Waste/Groundwater	HPLC	0.076	0.8		0.8 - 1	n/c		n/c	
207-08-9	benzo[k]fluoranthene	625	Wastewater	GC/MS	2.5	25			1.20E-2		2.96E-2	
207-08-9	benzo[k]fluoranthene	8270	Groundwater	GC/MS		10		0.2 - 10	1.20E-2		2.96E-2	
207-08-9	benzo[k]fluoranthene	610/8310	Waste/Groundwater	HPLC	0.017	0.2		0.2 - 3	1.20E-2		2.96E-2	
65-85-0	benzoic acid	8270	Groundwater	GC/MS		50		6 - 50				
98-07-7	benzotrichloride	8270	Groundwater	GC/MS		10			6.73E-3			
100-51-6	benzyl alcohol	8270	Groundwater	GC/MS		20		2 - 20				
100-44-7	benzyl chloride	8240	Groundwater	GC/MS		100		1 - 100	2.57E-1			
7440-41-7	beryllium	6010	Groundwater	ICP	0.3	3		0.01 - 5	2.03E-2		7.93E-2	
7440-41-7	beryllium	7090	Water	FAA	5	50			2.03E-2		7.93E-2	
7440-41-7	beryllium	7091	Groundwater	GFAA	0.2	2			2.03E-2		7.93E-2	
111-91-1	bis(2-chloroethoxy)methane	611	Wastewater	GC-Hall	0.5	5			n/c		n/c	
111-91-1	bis(2-chloroethoxy)methane	625	Wastewater	GC/MS	5.3	53			n/c		n/c	
111-91-1	bis(2-chloroethoxy)methane	8270	Groundwater	GC/MS		10		2 - 10	n/c		n/c	
111-44-4	bis(2-chloroethyl)ether (BCEE)	611	Wastewater	GC-Hall	0.3	3			3.98E-2		8.54E-1	
111-44-4	bis(2-chloroethyl)ether (BCEE)	625	Wastewater	GC/MS	5.7	57			3.98E-2		8.54E-1	
111-44-4	bis(2-chloroethyl)ether (BCEE)	8270	Groundwater	GC/MS		10		1 - 10	3.98E-2		8.54E-1	
39638-32-9	bis(2-chloroisopropyl)ether	611	Wastewater	GC-Hall	0.8	8						
39638-32-9	bis(2-chloroisopropyl)ether	625	Wastewater	GC/MS	5.7	57						
39638-32-9	bis(2-chloroisopropyl)ether	8270	Groundwater	GC/MS		10		4 - 10				
117-81-7	bis(2-ethylhexyl) phthalate (BEHI	606	Wastewater	GC-ECD	2	20			6.25E+0		3.56E+0	
117-81-7	bis(2-ethylhexyl) phthalate (BEHI	625	Wastewater	GC/MS	2.5	25			6.25E+0		3.56E+0	
117-81-7	bis(2-ethylhexyl) phthalate (BEHI	8270	Groundwater	GC/MS		10		1 - 10	6.25E+0		3.56E+0	
542-88-1	bis(chloromethyl)ether (BCME)	611	Wastewater	GC-Hall	0.8	10		4 - 10	1.99E-4			
75-27-4	bromodichloromethane (THM)	502.1	Drinking Water	GC-PID	0.003	0.03			7.06E-1		2.79E+1	
75-27-4	bromodichloromethane (THM)	502.2	Drinking Water	GC-ECD	0.02	0.2			7.06E-1		2.79E+1	
75-27-4	bromodichloromethane (THM)	524.1	Drinking Water	GC/MS	0.5	5			7.06E-1		2.79E+1	
75-27-4	bromodichloromethane (THM)	524.2	Drinking Water	GC/MS	0.08	0.8			7.06E-1		2.79E+1	
75-27-4	bromodichloromethane (THM)	601	Wastewater	GC-Hall	0.1	1			7.06E-1		2.79E+1	
75-27-4	bromodichloromethane (THM)	624	Wastewater	GC/MS	2.2	22			7.06E-1		2.79E+1	
75-27-4	bromodichloromethane (THM)	8010	Groundwater	GC-Hall	0.1	1		0.5 - 2	7.06E-1		2.79E+1	

AR 033995

n/c = not calculated

pqlh2o.xls

TABLE I: WATER

MDLs, PQLs, and Comparison of Method B Values (µg/L)

♦ Lab PQL Range < Published PQL

CAS	Chemical	Method	Matrix	Detector	MDL (µg/L)	PQL (µg/L)	♦	LABORATORY PQL RANGE ug/L	Method B GW Value (µg/L) - C	♦* PQL > GW Method B (flag = na)	Method B SW Value (µg/L) - C	♦* PQL > SW Method B (flag = na)
75-27-4	bromodichloromethane (THM)	8240	Groundwater	GC/MS		5		0.2 - 10	7.06E-1	♦*	2.79E+1	
75-25-2	bromoform (THM)	502.1	Drinking Water	GC-PID	0.05	0.5			5.54E+0		2.19E+2	
75-25-2	bromoform (THM)	502.2	Drinking Water	GC-ECD	1.6	16			5.54E+0	♦*	2.19E+2	
75-25-2	bromoform (THM)	524.1	Drinking Water	GC/MS	0.7	7			5.54E+0	♦*	2.19E+2	
75-25-2	bromoform (THM)	524.2	Drinking Water	GC/MS	0.12	1			5.54E+0		2.19E+2	
75-25-2	bromoform (THM)	601	Wastewater	GC-Hall	0.2	2			5.54E+0		2.19E+2	
75-25-2	bromoform (THM)	624	Wastewater	GC/MS	4.7	47			5.54E+0	♦*	2.19E+2	
75-25-2	bromoform (THM)	8010	Groundwater	GC-Hall	0.2	2		1 - 2	5.54E+0		2.19E+2	
75-25-2	bromoform (THM)	8240	Groundwater	GC/MS		5		2 - 10	5.54E+0		2.19E+2	
101-55-3	bromophenyl phenyl ether;4-	611	Wastewater	GC-Hall	2.3	23			n/c	Þ	n/c	Þ
101-55-3	bromophenyl phenyl ether;4-	625	Wastewater	GC/MS	1.9	19			n/c	Þ	n/c	Þ
101-55-3	bromophenyl phenyl ether;4-	8270	Groundwater	GC/MS		10		0.6 - 10	n/c	Þ	n/c	Þ
85-68-7	butyl benzyl phthalate	625	Wastewater	GC/MS	2.5	25						
85-68-7	butyl benzyl phthalate	8060	Waste/Groundwater	GC-ECD	0.34	3		3 - 10				
85-68-7	butyl benzyl phthalate	8270	Groundwater	GC/MS		10		1 - 10				
85-68-7	butyl benzyl phthalate	606/8060	Waste/Groundwater	GC-FID	15	150		10 - 150				
7440-43-9	cadmium	200.7/6010	Water/Groundwater	ICP	4	40		0.01 - 100				
7440-43-9	cadmium	213.1/7130	Water/Groundwater	FAA	5	50						
7440-43-9	cadmium	213.2/7131	Water/Groundwater	GFAA	0.1	1						
86-74-8	carbazole	8270	Groundwater	GC/MS		10		2 - 10	4.38E+0	♦*		
1563-66-2	carbofuran	531.1	Drink/Groundwater	HPLC	1.5	15						
1563-66-2	carbofuran	632	Wastewater	GC-NP	5.0E	50						
1563-66-2	carbofuran	8270	Groundwater	GC/MS		10		1 - 10				
75-15-0	carbon disulfide	8240	Groundwater	GC/MS		100		1 - 100				
56-23-5	carbon tetrachloride	502.1	Drinking Water	GC-PID	0.003	0.03			3.37E-1		2.66E+0	
56-23-5	carbon tetrachloride	502.2	Drinking Water	GC-ECD	0.01	0.1			3.37E-1		2.66E+0	
56-23-5	carbon tetrachloride	524.1	Drinking Water	GC/MS	0.3	3			3.37E-1	♦*	2.66E+0	♦*
56-23-5	carbon tetrachloride	524.2	Drinking Water	GC/MS	0.21	2			3.37E-1	♦*	2.66E+0	
56-23-5	carbon tetrachloride	601	Wastewater	GC-Hall	0.12	1			3.37E-1	♦*	2.66E+0	
56-23-5	carbon tetrachloride	624	Wastewater	GC/MS	2.8	28			3.37E-1	♦*	2.66E+0	♦*
56-23-5	carbon tetrachloride	8010	Groundwater	GC-Hall	0.12	1		1 - 10	3.37E-1	♦*	2.66E+0	
56-23-5	carbon tetrachloride	8240	Groundwater	GC/MS		5		1 - 10	3.37E-1	♦*	2.66E+0	♦*
57-74-9	chlordane	505	Drinking Water	GC-ECD	0.14	1		0.1 - 1.4	6.73E-2	♦*	3.54E-4	♦*
57-74-9	chlordane	606/8060	Waste/Groundwater	GC-ECD	0.014	0.14		0.005 - 0.5	6.73E-2	♦*	3.54E-4	♦*
	chlordane; alpha	505	Drinking Water	GC-ECD	0.006	0.06		0.005 - 0.06	n/c	Þ	n/c	Þ
	chlordane; alpha	508	Drinking Water	GC-ECD	0.002	0.015			n/c	Þ	n/c	Þ

n/c = not calculated

TABLE I: WATER

MDLs, PQLs, and Comparison of Method B Values (µg/L)

♦ Lab PQL Range < Published PQL

CAS	Chemical	Method	Matrix	Detector	MDL (µg/L)	PQL (µg/L)	♦	LABORATORY PQL RANGE ug/L	Method B GW Value (µg/L) - C	♦* PQL > GW Method B (flag = na)	Method B SW Value (µg/L) - C	♦* PQL > SW Method B (flag = na)
	chlordane; gamma	505	Drinking Water	GC-ECD	0.012	0.12			n/c		n/c	
	chlordane; gamma	508	Drinking Water	GC-ECD	0.002	0.015			n/c		n/c	
3165-93-3	chloro-2-methylaniline hydrochlorid	8270	Groundwater	GC/MS		10		1 - 10	1.90E-1	♦*		
95-69-2	chloro-2-methylaniline;4-	8270	Groundwater	GC/MS		10		1 - 10	1.51E-1	♦*		
59-50-7	chloro-3-methylphenol;4-	625	Wastewater	GC/MS	3	30		4 - 30	n/c		n/c	
59-50-7	chloro-3-methylphenol;4-	8040	Groundwater	GC-ECD	1.8	18		4 - 18	n/c		n/c	
59-50-7	chloro-3-methylphenol;4-	8270	Groundwater	GC/MS		20		2 - 20	n/c		n/c	
59-50-7	chloro-3-methylphenol;4-	604/8040	Waste/Groundwater	GC-FID	0.36	4		1 - 4	n/c		n/c	
106-47-8	chloroaniline;4-	8270	Groundwater	GC/MS		20		4 - 20				
108-90-7	chlorobenzene	502.1	Drinking Water	GC-PID	0.005	0.05						
108-90-7	chlorobenzene	502.2	Drinking Water	GC-ECD	0.01	0.1						
108-90-7	chlorobenzene	503.1	Drinking Water	GC-ECD	0.004	0.04						
108-90-7	chlorobenzene	524.1	Drinking Water	GC/MS	0.1	1						
108-90-7	chlorobenzene	524.2	Drinking Water	GC/MS	0.04	0.4						
108-90-7	chlorobenzene	601	Wastewater	GC-Hall	0.25	3						
108-90-7	chlorobenzene	602	Wastewater	GC-PID	0.2	2						
108-90-7	chlorobenzene	624	Wastewater	GC/MS	6	60						
108-90-7	chlorobenzene	8010	Groundwater	GC-Hall	0.25	3		1.2 - 10				
108-90-7	chlorobenzene	8020	Groundwater	GC-PID	0.2	2		0.5 - 10				
108-90-7	chlorobenzene	8240	Groundwater	GC/MS		5		0.5 - 10				
124-48-1	chlorodibromomethane	8240	Groundwater	GC/MS		5		1 - 10	5.21E-1	♦*	2.06E+1	
75-00-3	chloroethane	502.1	Drinking Water	GC-PID	0.008	0.08						
75-00-3	chloroethane	502.2	Drinking Water	GC-ECD	0.1	1						
75-00-3	chloroethane	524.1	Drinking Water	GC/MS								
75-00-3	chloroethane	524.2	Drinking Water	GC/MS	0.1	1						
75-00-3	chloroethane	601	Wastewater	GC-Hall	0.52	5						
75-00-3	chloroethane	624	Wastewater	GC/MS								
75-00-3	chloroethane	8010	Groundwater	GC-Hall	0.52	5		1 - 10				
75-00-3	chloroethane	8240	Groundwater	GC/MS		10		1 - 10				
110-75-8	chloroethyl vinyl ether;2-	601	Wastewater	GC-Hall	0.13	1			n/c		n/c	
110-75-8	chloroethyl vinyl ether;2-	624	Wastewater	GC/MS					n/c		n/c	
110-75-8	chloroethyl vinyl ether;2-	8010	Groundwater	GC-Hall	0.13	1		1 - 10	n/c		n/c	
110-75-8	chloroethyl vinyl ether;2-	8240	Groundwater	GC/MS		10		1 - 20	n/c		n/c	
67-66-3	chloroform	502.2	Drinking Water	GC-ECD	0.02	0.2			7.17E+0		2.83E+2	
67-66-3	chloroform	524.1	Drinking Water	GC/MS	0.2	2			7.17E+0		2.83E+2	
67-66-3	chloroform	524.2	Drinking Water	GC/MS	0.03	0.3			7.17E+0		2.83E+2	

n/c = not calculated

pqlh2o.xls

10/12/93

TABLE I: WATER

MDLs, PQLs, and Comparison of Method B Values (µg/L)

♿ Lab PQL Range < Published PQL

CAS	Chemical	Method	Matrix	Detector	MDL (µg/L)	PQL (µg/L)	♿	LABORATORY PQL RANGE µg/L	Method B GW Value (µg/L) - C	♿* PQL > GW Method B (flag = ns)	Method B SW Value (µg/L) - C	♿* PQL > SW Method B (flag = ns)
67-66-3	chloroform	601	Wastewater	GC-Hall	0.05	0.5			7.17E+0		2.83E+2	
67-66-3	chloroform	624	Wastewater	GC/MS	1.6	16			7.17E+0	♿*	2.83E+2	
67-66-3	chloroform	8010	Groundwater	GC-Hall	0.05	0.5		0.2 - 2	7.17E+0		2.83E+2	
67-66-3	chloroform	8240	Groundwater	GC/MS		5		1 - 5	7.17E+0		2.83E+2	
74-87-3	chloromethane	502.1	Drinking Water	GC-PID	0.01	0.1			3.37E+0		1.33E+2	
74-87-3	chloromethane	502.2	Drinking Water	GC-ECD	0.03	0.3			3.37E+0		1.33E+2	
74-87-3	chloromethane	524.1	Drinking Water	GC/MS	0.13	1			3.37E+0		1.33E+2	
74-87-3	chloromethane	524.2	Drinking Water	GC/MS	0.13	1			3.37E+0		1.33E+2	
74-87-3	chloromethane	601	Wastewater	GC-Hall	0.08	0.8			3.37E+0		1.33E+2	
74-87-3	chloromethane	624	Wastewater	GC/MS	0.08	0.8			3.37E+0		1.33E+2	
74-87-3	chloromethane	8010	Groundwater	GC-Hall	0.08	0.8		0.8 - 2	3.37E+0		1.33E+2	
74-87-3	chloromethane	8240	Groundwater	GC/MS		10		1 - 10	3.37E+0	♿*	1.33E+2	
91-58-7	chloronaphthalene;2-	625	Wastewater	GC/MS	1.9	19			n/c	♿	n/c	♿
91-58-7	chloronaphthalene;2-	8270	Groundwater	GC/MS		10		1 - 100	n/c	♿	n/c	♿
91-58-7	chloronaphthalene;2-	612/8120	Waste/Groundwater	GC-ECD	0.94	9		1 - 9	n/c	♿	n/c	♿
88-73-3	chloronitrobenzene;o-	8270	Groundwater	GC/MS					3.50E+0			
100-00-5	chloronitrobenzene;p-	8270	Groundwater	GC/MS					4.66E+0			
95-57-8	chlorophenol;2-	625	Wastewater	GC/MS	3.3	33		4 - 33				
95-57-8	chlorophenol;2-	8040	Groundwater	GC-ECD	0.58	6		4 - 6				
95-57-8	chlorophenol;2-	8270	Groundwater	GC/MS		10		4 - 10				
95-57-8	chlorophenol;2-	604/8040	Waste/Groundwater	GC-FID	0.31	3		1 - 4				
7005-72-3	chlorophenyl phenyl ether;4-	611	Wastewater	GC-Hall	3.9	39			n/c	♿	n/c	♿
7005-72-3	chlorophenyl phenyl ether;4-	625	Wastewater	GC/MS	4.2	42			n/c	♿	n/c	♿
7005-72-3	chlorophenyl phenyl ether;4-	8270	Groundwater	GC/MS		10		1 - 10	n/c	♿	n/c	♿
1897-45-6	chlorthalonil	508	Drinking Water	GC-ECD	0.025	10		0.005 - 10	7.95E+0	♿*		
16065-83-1	chromium(III) NOTE: Total Cr (sub	218.2	Water	GFAA	1	10		5 - 10				
16065-83-1	chromium(III) NOTE: Total Cr (sub	7190	Waste/Groundwater	FAA	50	500		10 - 500				
16065-83-1	chromium(III) NOTE: Total Cr (sub	7191	Waste/Groundwater	GFAA	1	10						
18540-29-9	chromium(VI)	7195	Groundwater	PCP/AA	5	50						
18540-29-9	chromium(VI)	7196	Groundwater	Color	10	100						
18540-29-9	chromium(VI)	7197	Water	MBK/AA	1	10		10 - 50				
218-01-9	chrysene	625	Wastewater	GC/MS	2.5	25			1.20E-2	♿*	2.96E-2	♿*
218-01-9	chrysene	8270	Groundwater	GC/MS		10		1 - 10	1.20E-2	♿*	2.96E-2	♿*
218-01-9	chrysene	610/8310	Waste/Groundwater	HPLC	0.15	2		2 - 10	1.20E-2	♿*	2.96E-2	♿*
7440-50-8	copper	200.7/6010	Water/Groundwater	ICP	6	60	♿	10 - 50				
7440-50-8	copper	220.1/7210	Water/Groundwater	AA	20	200						

n/c = not calculated

pqlh2o.xls

10/12/93

T/ I: WATER

MDLs, PQLs, and Con. ison of Method B Values (µg/L)

♿ Lab PQL Range < Published PQL

CAS	Chemical	Method	Matrix	Detector	MDL (µg/L)	PQL (µg/L)	♿	LABORATORY PQL RANGE ug/L	Method B GW Value (µg/L) - C	♿* PQL > GW Method B (flag=na)	Method B SW Value (µg/L) - C	♿* PQL > SW Method B (flag=na)
7440-50-8	copper	220.2/7211	Water/Groundwater	AA	1	10						
	creosote (aromatic hydrocarbon co	8270	Groundwater	GC/MS		10		2 - 10	n/c		n/c	
8001-58-9	creosote (phenolic components)	8270	Groundwater	GC/MS		10		2 - 10				
108-39-4	cresol;m-	8270	Groundwater	GC/MS		10		2 - 10				
95-48-7	cresol;o-	8270	Groundwater	GC/MS		10		2 - 10				
106-44-5	cresol;p-	8270	Groundwater	GC/MS		10		2 - 10				
57-12-5	cyanide	9010	Waste/Groundwater	Color	20	200	♿	10 - 50				
57-12-5	cyanide	9012	Waste/Groundwater	A-Color	5	50						
75-99-0	dalapon, sodium salt	615/8150	Waste/Groundwater	GC-ECD	5.8	58		5 - 58				
94-82-6	DB;2,4-	515.1	Water	GC-ECD	0.8	8						
94-82-6	DB;2,4-	615/8150	Waste/Groundwater	GC-ECD	0.91	9		5 - 9				
72-54-8	DDD;p,p'-	508	Drinking Water	GC-ECD	0.003	0.025			3.65E-1		5.04E-4	♿*
72-54-8	DDD;p,p'-	625	Wastewater	GC/MS	2.8	28			3.65E-1	♿*	5.04E-4	♿*
72-54-8	DDD;p,p'-	608/8150	Waste/Groundwater	GC-ECD	0.011	0.1		0.01 - 0.1	3.65E-1		5.04E-4	♿*
72-55-9	DDE;p,p'-	625	Wastewater	GC/MS	5.6	56			2.57E-1	♿*	3.56E-4	♿*
72-55-9	DDE;p,p'-	608/8150	Waste/Groundwater	GC-ECD	0.004	0.04		0.01 - 0.04	2.57E-1		3.56E-4	♿*
72-55-9	DDE;p,p--	508	Drinking Water	GC-ECD	0.01	0.1			2.57E-1		3.56E-4	♿*
50-29-3	DDT;p,p'-	508	Drinking Water	GC-ECD	0.06	0.6			2.57E-1	♿*	3.56E-4	♿*
50-29-3	DDT;p,p'-	625	Wastewater	GC/MS	4.7	47			2.57E-1	♿*	3.56E-4	♿*
50-29-3	DDT;p,p'-	608/8150	Waste/Groundwater	GC-ECD	0.012	0.1		0.01 - 0.1	2.57E-1		3.56E-4	♿*
84-74-2	di-n-butyl phthalate	606	Wastewater	GC-FID	0.36	4						
117-84-0	di-n-octyl phthalate	606	Wastewater	GC-FID	3	30						
117-84-0	di-n-octyl phthalate	625	Wastewater	GC/MS	2.5	25						
117-84-0	di-n-octyl phthalate	8270	Groundwater	GC/MS		10		1 - 10				
2303-16-4	diallate	8150	Groundwater	GC-ECD		10		0.5 - 10	1.43E+0	♿*		
333-41-5	diazinon	614	Groundwater	GC-N/P	0.012	0.1						
333-41-5	diazinon	615/8140	Waste/Groundwater	GC-FPD	0.6	6		0.1 - 6				
53-70-3	dibenz[a,h]anthracene	625	Wastewater	GC/MS	2.5	25			1.20E-2	♿*	2.96E-2	♿*
53-70-3	dibenz[a,h]anthracene	8270	Groundwater	GC/MS		10		3 - 10	1.20E-2	♿*	2.96E-2	♿*
53-70-3	dibenz[a,h]anthracene	610/8310	Waste/Groundwater	HPLC	0.03	0.3		0.3 - 3	1.20E-2	♿*	2.96E-2	♿*
132-64-9	dibenzofuran	8270	Groundwater	GC/MS		10		2 - 10				
124-48-1	dibromochloromethane (THM)	502.1	Drinking Water	GC-PID	0.008	0.08			5.21E-1		2.06E+1	
124-48-1	dibromochloromethane (THM)	502.2	Drinking Water	GC-ECD	0.03	0.3			5.21E-1		2.06E+1	
124-48-1	dibromochloromethane (THM)	524.1	Drinking Water	GC/MS	0.4	4			5.21E-1	♿*	2.06E+1	
124-48-1	dibromochloromethane (THM)	524.2	Drinking Water	GC/MS	0.05	0.5			5.21E-1		2.06E+1	
124-48-1	dibromochloromethane (THM)	601	Wastewater	GC-Hall	0.09	0.9			5.21E-1	♿*	2.06E+1	

AR 033999

n/c = not calculated

pqlh2o.xls

TABLE I: WATER

MDLs, PQLs, and Comparison of Method B Values (µg/L)

◊ Lab PQL Range < Published PQL

CAS	Chemical	Method	Matrix	Detector	MDL (µg/L)	PQL (µg/L)	◊	LABORATORY PQL RANGE µg/L	Method B GW Value (µg/L) - C	◊* PQL > GW Method B (flag = na)	Method B SW Value (µg/L) - C	◊* PQL > SW Method B (flag = na)
124-48-1	dibromochloromethane (THM)	624	Wastewater	GC/MS	3.1	31			5.21E-1	◊*	2.06E+1	◊*
124-48-1	dibromochloromethane (THM)	8010	Groundwater	GC-Hall	0.9	9		0.2 - 10	5.21E-1	◊*	2.06E+1	
1918-00-9	dicamba	515.1	Water	GC-ECD	0.061	0.8						
1918-00-9	dicamba	615/8150	Groundwater	GC-ECD	0.27	3		0.5 - 3				
95-50-1	dichlorobenzene;1,2-	502.1	Drinking Water	GC-PID								
95-50-1	dichlorobenzene;1,2-	502.2	Drinking Water	GC-ECD	0.02	0.2						
95-50-1	dichlorobenzene;1,2-	503.1	Drinking Water	GC-ECD	0.02	0.2						
95-50-1	dichlorobenzene;1,2-	524.1	Drinking Water	GC/MS	1	10						
95-50-1	dichlorobenzene;1,2-	524.2	Drinking Water	GC/MS	0.03	0.3						
95-50-1	dichlorobenzene;1,2-	601	Wastewater	GC-Hall	0.15	2						
95-50-1	dichlorobenzene;1,2-	602	Wastewater	GC-PID	0.4	4						
95-50-1	dichlorobenzene;1,2-	624	Wastewater	GC/MS								
95-50-1	dichlorobenzene;1,2-	625	Wastewater	GC/MS	1.9	19						
95-50-1	dichlorobenzene;1,2-	8010	Groundwater	GC-Hall	0.15	2		1 - 100				
95-50-1	dichlorobenzene;1,2-	8020	Groundwater	GC-PID	0.4	4		0.5 - 4				
95-50-1	dichlorobenzene;1,2-	8270	Groundwater	GC/MS		10		1 - 100				
95-50-1	dichlorobenzene;1,2-	612/8120	Waste/Groundwater	GC-ECD	1.14	11		1 - 11				
541-73-1	dichlorobenzene;1,3-	502.1	Drinking Water	GC-PID					n/c		n/c	
541-73-1	dichlorobenzene;1,3-	502.2	Drinking Water	GC-ECD	0.02	0.2			n/c	◊	n/c	◊
541-73-1	dichlorobenzene;1,3-	503.1	Drinking Water	GC-ECD	0.006	0.06			n/c	◊	n/c	◊
541-73-1	dichlorobenzene;1,3-	524.1	Drinking Water	GC/MS					n/c		n/c	
541-73-1	dichlorobenzene;1,3-	524.2	Drinking Water	GC/MS	0.12	1			n/c	◊	n/c	◊
541-73-1	dichlorobenzene;1,3-	601	Wastewater	GC-Hall	0.32	3			n/c	◊	n/c	◊
541-73-1	dichlorobenzene;1,3-	602	Wastewater	GC-PID	0.4	4			n/c	◊	n/c	◊
541-73-1	dichlorobenzene;1,3-	624	Wastewater	GC/MS		3			n/c	◊	n/c	◊
541-73-1	dichlorobenzene;1,3-	625	Wastewater	GC/MS	1.9	19			n/c	◊	n/c	◊
541-73-1	dichlorobenzene;1,3-	8010	Groundwater	GC-Hall	0.32	3		1 - 10	n/c	◊	n/c	◊
541-73-1	dichlorobenzene;1,3-	8020	Groundwater	GC-PID	0.4	4		1 - 4	n/c	◊	n/c	◊
541-73-1	dichlorobenzene;1,3-	8270	Groundwater	GC/MS		10		1 - 10	n/c	◊	n/c	◊
541-73-1	dichlorobenzene;1,3-	612/8120	Waste/Groundwater	GC-ECD	1.19	12		0.5 - 12	n/c	◊	n/c	◊
106-46-7	dichlorobenzene;1,4-	502.1	Drinking Water	GC-PID					1.82E+0		4.86E+0	
106-46-7	dichlorobenzene;1,4-	502.2	Drinking Water	GC-ECD	0.01	0.1			1.82E+0		4.86E+0	
106-46-7	dichlorobenzene;1,4-	503.1	Drinking Water	GC-ECD	0.006	0.06			1.82E+0		4.86E+0	
106-46-7	dichlorobenzene;1,4-	524.1	Drinking Water	GC/MS	2	20			1.82E+0	◊*	4.86E+0	◊*
106-46-7	dichlorobenzene;1,4-	524.2	Drinking Water	GC/MS	0.03	0.3			1.82E+0		4.86E+0	
106-46-7	dichlorobenzene;1,4-	601	Wastewater	GC-Hall	0.24	2.4			1.82E+0	◊*	4.86E+0	

n/c = not calculated

pqlh2o.xls

TABLE I: WATER

MDLs, PQLs, and Comparison of Method B Values (µg/L)

♦ Lab PQL Range < Published PQL

CAS	Chemical	Method	Matrix	Detector	MDL (µg/L)	PQL (µg/L)	♦	LABORATORY PQL RANGE ug/L	Method B GW Value (µg/L) - C	♦* PQL > GW Method B (flag = na)	Method B SW Value (µg/L) - C	♦* PQL > SW Method B (flag = na)
106-46-7	dichlorobenzene;1,4-	602	Wastewater	GC-PID	0.3	3			1.82E+0	♦*	4.86E+0	
106-46-7	dichlorobenzene;1,4-	624	Wastewater	GC/MS					1.82E+0		4.86E+0	
106-46-7	dichlorobenzene;1,4-	625	Wastewater	GC/MS	4.4	44			1.82E+0	♦*	4.86E+0	♦*
106-46-7	dichlorobenzene;1,4-	8010	Groundwater	GC-Hall	0.24	2		1 - 10	1.82E+0	♦*	4.86E+0	
106-46-7	dichlorobenzene;1,4-	8020	Groundwater	GC-PID	0.3	3		0.5 - 10	1.82E+0	♦*	4.86E+0	
106-46-7	dichlorobenzene;1,4-	8270	Groundwater	GC/MS		10		1 - 10	1.82E+0	♦*	4.86E+0	♦*
106-46-7	dichlorobenzene;1,4-	612/8120	Waste/Groundwater	GC-ECD	1.34	13		0.5 - 13	1.82E+0	♦*	4.86E+0	♦*
91-94-1	dichlorobenzidine;3,3-	605	Wastewater	HPLC	0.13	1			1.94E-1	♦*	4.62E-2	♦*
91-94-1	dichlorobenzidine;3,3-	625	Wastewater	GC/MS	16.5	165			1.94E-1	♦*	4.62E-2	♦*
91-94-1	dichlorobenzidine;3,3-	8270	Groundwater	GC/MS		20		2 - 20	1.94E-1	♦*	4.62E-2	♦*
75-71-8	dichlorodifluoromethane	502.1	Drinking Water	GC-PID								
75-71-8	dichlorodifluoromethane	502.2	Drinking Water	GC-ECD	0.05	0.5						
75-71-8	dichlorodifluoromethane	524.1	Drinking Water	GC/MS	0.3	3						
75-71-8	dichlorodifluoromethane	524.2	Drinking Water	GC/MS	0.1	1						
75-71-8	dichlorodifluoromethane	601	Wastewater	GC-Hall	1.81	18						
75-71-8	dichlorodifluoromethane	8240	Groundwater	GC/MS		5		0.2 - 20				
75-34-3	dichloroethane;1,1-	502.1	Drinking Water	GC-PID	0.003	0.03						
75-34-3	dichloroethane;1,1-	502.2	Drinking Water	GC-ECD	0.07	0.7						
75-34-3	dichloroethane;1,1-	524.1	Drinking Water	GC/MS	0.2	2						
75-34-3	dichloroethane;1,1-	524.2	Drinking Water	GC/MS	0.04	0.4						
75-34-3	dichloroethane;1,1-	601	Wastewater	GC-Hall	0.07	0.7						
75-34-3	dichloroethane;1,1-	624	Wastewater	GC/MS	4.7	47						
75-34-3	dichloroethane;1,1-	8010	Groundwater	GC-Hall	0.07	0.7						
75-34-3	dichloroethane;1,1-	8240	Groundwater	GC/MS		5		0.2 - 10				
107-06-2	dichloroethane;1,2-	502.1	Drinking Water	GC-PID	0.002	0.02			4.81E-1		5.94E+1	
107-06-2	dichloroethane;1,2-	502.2	Drinking Water	GC-ECD	0.03	0.3			4.81E-1		5.94E+1	
107-06-2	dichloroethane;1,2-	524.1	Drinking Water	GC/MS	0.2	2			4.81E-1	♦*	5.94E+1	
107-06-2	dichloroethane;1,2-	524.2	Drinking Water	GC/MS	0.06	0.6			4.81E-1	♦*	5.94E+1	
107-06-2	dichloroethane;1,2-	601	Wastewater	GC-Hall	0.03	0.3			4.81E-1		5.94E+1	
107-06-2	dichloroethane;1,2-	624	Wastewater	GC/MS	2.8	28			4.81E-1	♦*	5.94E+1	
107-06-2	dichloroethane;1,2-	8010	Groundwater	GC-Hall	0.03	0.3		0.3 - 2	4.81E-1		5.94E+1	
107-06-2	dichloroethane;1,2-	8240	Groundwater	GC/MS		5		0.2 - 10	4.81E-1	♦*	5.94E+1	
75-35-4	dichloroethene;1,1-	502.1	Drinking Water	GC-PID	0.003	0.03			7.29E-2		1.93E+0	
75-35-4	dichloroethene;1,1-	502.2	Drinking Water	GC-ECD	0.07	0.7			7.29E-2	♦*	1.93E+0	
75-35-4	dichloroethene;1,1-	524.1	Drinking Water	GC/MS	0.2	2			7.29E-2	♦*	1.93E+0	♦*
75-35-4	dichloroethene;1,1-	524.2	Drinking Water	GC/MS	0.12	1			7.29E-2	♦*	1.93E+0	

n/c = not calculated

pqlh2o.xls

10/12/93

TABLE I: WATER

MDLs, PQLs, and Comparison of Method B Values (µg/L)

♁ Lab PQL Range < Published PQL

CAS	Chemical	Method	Matrix	Detector	MDL (µg/L)	PQL (µg/L)	♁	LABORATORY PQL RANGE ug/L	Method B GW Value (µg/L) - C	♁* PQL > GW Method B (flag = na)	Method B SW Value (µg/L) - C	♁* PQL > SW Method B (flag = na)
75-35-4	dichloroethene;1,1-	601	Wastewater	GC-Hall	0.13	1			7.29E-2	♁*	1.93E+0	
75-35-4	dichloroethene;1,1-	624	Wastewater	GC/MS	2.8	28			7.29E-2	♁*	1.93E+0	♁*
75-35-4	dichloroethene;1,1-	8010	Groundwater	GC-Hall	0.13	1		0.2 - 10	7.29E-2	♁*	1.93E+0	
75-35-4	dichloroethene;1,1-	8240	Groundwater	GC/MS		5		1 - 10	7.29E-2	♁*	1.93E+0	♁*
156-59-2	dichloroethylene; 1,2-cis-	502.1	Drinking Water	GC-PID	0.002	0.02						
156-59-2	dichloroethylene; 1,2-cis-	502.2	Drinking Water	GC-ECD	0.01	0.1						
156-59-2	dichloroethylene; 1,2-cis-	524.1	Drinking Water	GC/MS								
156-59-2	dichloroethylene; 1,2-cis-	524.2	Drinking Water	GC/MS	0.12	1						
156-59-2	dichloroethylene; 1,2-cis-	601	Wastewater	GC-Hall	0.1	1						
156-59-2	dichloroethylene; 1,2-cis-	624	Wastewater	GC/MS	1.6	16						
156-59-2	dichloroethylene; 1,2-cis-	8010	Groundwater	GC-Hall	0.1	1		0.2 - 10				
156-59-2	dichloroethylene; 1,2-cis-	8240	Groundwater	GC/MS		5		0.2 - 10				
156-60-5	dichloroethylene; 1,2-trans-	502.1	Drinking Water	GC-PID	0.002	0.02						
156-60-5	dichloroethylene; 1,2-trans-	502.2	Drinking Water	GC-ECD	0.06	0.6						
156-60-5	dichloroethylene; 1,2-trans-	524.1	Drinking Water	GC/MS	0.2	2						
156-60-5	dichloroethylene; 1,2-trans-	524.2	Drinking Water	GC/MS	0.06	0.6						
156-60-5	dichloroethylene; 1,2-trans-	601	Wastewater	GC-Hall	0.1	1						
156-60-5	dichloroethylene; 1,2-trans-	624	Wastewater	GC/MS	1.6	16						
156-60-5	dichloroethylene; 1,2-trans-	8010	Groundwater	GC-Hall	0.1	1		0.2 - 10				
156-60-5	dichloroethylene; 1,2-trans-	8240	Groundwater	GC/MS		5		0.2 - 10				
	dichloroethylene;1,2- (total)	502.1	Drinking Water	GC-PID	0.002	0.02			n/c	♁	n/c	♁
	dichloroethylene;1,2- (total)	502.2	Drinking Water	GC-ECD	0.06	0.6			n/c	♁	n/c	♁
	dichloroethylene;1,2- (total)	524.1	Drinking Water	GC/MS	0.2	2			n/c	♁	n/c	♁
	dichloroethylene;1,2- (total)	524.2	Drinking Water	GC/MS	0.12	1			n/c	♁	n/c	♁
	dichloroethylene;1,2- (total)	601	Wastewater	GC-Hall	0.1	1			n/c	♁	n/c	♁
	dichloroethylene;1,2- (total)	624	Wastewater	GC/MS	1.6	16			n/c	♁	n/c	♁
	dichloroethylene;1,2- (total)	8010	Groundwater	GC-Hall	0.1	1		0.2 - 10	n/c	♁	n/c	♁
	dichloroethylene;1,2- (total)	8240	Groundwater	GC/MS		5		0.2 - 10	n/c	♁	n/c	♁
120-83-2	dichlorophenol;2,4-	625	Wastewater	GC/MS	2.7	27		2 - 27				
120-83-2	dichlorophenol;2,4-	8270	Groundwater	GC/MS		10		1 - 10				
120-83-2	dichlorophenol;2,4-	604/8040	Waste/Groundwater	GC-FID	0.39	4		1 - 4				
120-83-2	dichlorophenol;2,4-			GC-ECD	0.68	7		0.07 - 10				
94-75-7	dichlorophenoxyacetic acid;2,4- (	515.1	Water	GC-ECD	0.2	2						
94-75-7	dichlorophenoxyacetic acid;2,4- (	615/8150	Waste/Groundwater	GC-ECD	1.2	12		0.5 - 12				
78-87-5	dichloropropane;1,2-	502.1	Drinking Water	GC-PID					6.43E-1		2.32E+1	
78-87-5	dichloropropane;1,2-	502.2	Drinking Water	GC-ECD	0.01	0.1			6.43E-1		2.32E+1	

n/c = not calculated

pqlh2o.xls

TA[illegible] I: WATER

MDLs, PQLs, and Con[illegible]son of Method B Values (µg/L)

♦ Lab PQL Range < Published PQL

CAS	Chemical	Method	Matrix	Detector	MDL (µg/L)	PQL (µg/L)	♦	LABORATORY PQL RANGE µg/L	Method B GW Value (µg/L) - C	♦* PQL > GW Method B (flag = na)	Method B SW Value (µg/L) - C	♦* PQL > SW Method B (flag = na)
78-87-5	dichloropropane;1,2-	524.1	Drinking Water	GC/MS	0.2	2			6.43E-1	♦*	2.32E+1	
78-87-5	dichloropropane;1,2-	524.2	Drinking Water	GC/MS	0.04	0.4			6.43E-1		2.32E+1	
78-87-5	dichloropropane;1,2-	601	Wastewater	GC-Hall	0.04	0.4			6.43E-1		2.32E+1	
78-87-5	dichloropropane;1,2-	624	Wastewater	GC/MS		5		1 - 10	6.43E-1	♦*	2.32E+1	
78-87-5	dichloropropane;1,2-	8010	Groundwater	GC-Hall	0.04	0.4		0.4 - 2	6.43E-1		2.32E+1	
78-87-5	dichloropropane;1,2-	8240	Groundwater	GC/MS		5		1 - 10	6.43E-1	♦*	2.32E+1	
542-75-6	dichloropropene;1,3- (total)	601	Wastewater	GC-Hall	0.2	2			2.43E-1	♦*	1.89E+1	
542-75-6	dichloropropene;1,3- (total)	624	Wastewater	GC/MS		5		0.2 - 10	2.43E-1	♦*	1.89E+1	
	dichloropropene;1,3-cis-	601	Wastewater	GC-Hall	0.2	2			n/c	Þ	n/c	Þ
	dichloropropene;1,3-cis-	624	Wastewater	GC/MS					n/c		n/c	
	dichloropropene;1,3-cis-	8240	Groundwater	GC/MS		5		0.2 - 10	n/c	Þ	n/c	Þ
	dichloropropene;1,3-trans-	601	Wastewater	GC-Hall	0.34	3			n/c	Þ	n/c	Þ
	dichloropropene;1,3-trans-	624	Wastewater	GC/MS	5	50			n/c	Þ	n/c	Þ
	dichloropropene;1,3-trans-	8240	Groundwater	GC/MS		5		0.2 - 10	n/c	Þ	n/c	Þ
60-57-1	dieldrin	505	Drinking Water	GC-ECD	0.012	0.1			5.47E-3	♦*	8.67E-5	♦*
60-57-1	dieldrin	625	Wastewater	GC/MS	2.5	25			5.47E-3	♦*	8.67E-5	♦*
60-57-1	dieldrin	608/8080	Waste/Groundwater	GC-ECD	0.002	0.02		0.01 - 0.02	5.47E-3	♦*	8.67E-5	♦*
84-66-2	diethyl phthalate	625	Wastewater	GC/MS	22	22						
84-66-2	diethyl phthalate	8060	Groundwater	GC-FID	31	310		51 - 310				
84-66-2	diethyl phthalate	8270	Groundwater	GC/MS		10		0.6 - 10				
84-66-2	diethyl phthalate	608/8060	Waste/Groundwater	GC-ECD	0.49	5		2 - 10				
	dimethoxybenzidine;3,3'-	8270	Groundwater	GC/MS		100		2 - 100	n/c	Þ	n/c	Þ
131-11-3	dimethyl phthalate	625	Wastewater	GC/MS	1.6	16						
131-11-3	dimethyl phthalate	8060	Groundwater	GC-FID	19	190		0.6 - 190				
131-11-3	dimethyl phthalate	8270	Groundwater	GC/MS		10		0.6 - 10				
131-11-3	dimethyl phthalate	608/8060	Waste/Groundwater	GC-ECD	0.29	3		0.3 - 10				
119-93-7	dimethylbenzidine;3,3'-	8270	Groundwater	GC/MS		10		1 - 10	9.51E-3	♦*		
540-73-8	dimethylhydrazine;1,2-			HPLC-UV					6.25E-5			
105-67-9	dimethylphenol;2,4-	625	Wastewater	GC/MS	2.7	27		2 - 27				
105-67-9	dimethylphenol;2,4-	8270	Groundwater	GC/MS		10		1 - 10				
105-67-9	dimethylphenol;2,4-	604/8040	Waste/Groundwater	GC-FID	0.32	3		2 - 6				
105-67-9	dimethylphenol;2,4-			GC-ECD	0.63	6		6 - 10				
534-52-1	dinitro-o-cresol;4,6-	8270	Groundwater	GC/MS		50		4 - 50	n/c	Þ	n/c	Þ
51-28-5	dinitrophenol;2,4-	625	Wastewater	GC/MS	42	420		2 - 420				
51-28-5	dinitrophenol;2,4-	8270	Groundwater	GC/MS		50		2 - 50				
51-28-5	dinitrophenol;2,4-	604/8040	Waste/Groundwater	GC-FID	13	130		4 - 130				

AR 034003

n/c = not calculated

pqlh2o.xls

TABLE I: WATER

MDLs, PQLs, and Comparison of Method B Values (µg/L)

♿ Lab PQL Range < Published PQL

CAS	Chemical	Method	Matrix	Detector	MDL (µg/L)	PQL (µg/L)	♿	LABORATORY PQL RANGE ug/L	Method B GW Value (µg/L) - C	♿* PQL > GW Method B (flag=na)	Method B SW Value (µg/L) - C	♿* PQL > SW Method B (flag=na)
121-14-2	dinitrotoluene;2,4-	625	Wastewater	GC/MS	5.7	57						
121-14-2	dinitrotoluene;2,4-	8270	Groundwater	GC/MS		10		0.8 - 10				
121-14-2	dinitrotoluene;2,4-	609/8090	Waste/Groundwater	GC-ECD	0.02	0.2		0.01 - 0.2				
606-20-2	dinitrotoluene;2,6-	625	Wastewater	GC/MS	1.9	19						
606-20-2	dinitrotoluene;2,6-	8270	Groundwater	GC/MS		10		0.8 - 10				
606-20-2	dinitrotoluene;2,6-	609/8090	Waste/Groundwater	GC-ECD	0.01	0.1		0.1 - 10				
88-85-1	dinoseb	515.1	Water	GC-ECD	0.19	2						
88-85-1	dinoseb	8270	Groundwater	GC/MS		20		0.5 - 20				
88-85-1	dinoseb	615/8150	Waste/Groundwater	GC-ECD	0.07	0.7		0.5 - 7				
123-91-1	dioxane;1,4-	8240	Groundwater	GC/MS		10		2 - 10	7.95E+0	♿*		
122-66-7	diphenylhydrazine;1,2-	8240	Groundwater	GC/MS		20		4 - 20	1.09E-1	♿*	3.25E-1	♿*
298-04-4	disulfoton	507	Drinking Water	GC-N/P	0.3	3						
298-04-4	disulfoton	614	Wastewater	GC-FPD								
298-04-4	disulfoton	622	Wastewater	GC-N/P	0.2	2						
298-04-4	disulfoton	8140	Groundwater	GC-FPD	0.2	2		0.1 - 2				
298-04-4	disulfoton	8270	Groundwater	GC/MS		10		1 - 10				
	endosulfan (alpha, beta)	508	Drinking Water	GC-ECD					n/c		n/c	
	endosulfan (alpha, beta)	625	Wastewater	GC/MS					n/c		n/c	
	endosulfan (alpha, beta)	608/8080	Waste/Groundwater	GC-ECD					n/c		n/c	
	endosulfan I	508	Drinking Water	GC-ECD	0.015	0.2			n/c	♿	n/c	♿
	endosulfan I	625	Wastewater	GC/MS					n/c		n/c	
	endosulfan I	608/8080	Waste/Groundwater	GC-ECD	0.014	0.1		0.005 - 0.1	n/c	♿	n/c	♿
	endosulfan II	508	Drinking Water	GC-ECD	0.024	0.2			n/c	♿	n/c	♿
	endosulfan II	625	Wastewater	GC/MS					n/c		n/c	
	endosulfan II	608/8080	Waste/Groundwater	GC-ECD	0.004	0.04		0.01 - 0.1	n/c	♿	n/c	♿
1031-07-8	endosulfan sulfate	508	Drinking Water	GC-ECD	0.015	0.2			n/c	♿	n/c	♿
1031-07-8	endosulfan sulfate	625	Wastewater	GC/MS	5.6	56			n/c	♿	n/c	♿
1031-07-8	endosulfan sulfate	608/8080	Waste/Groundwater	GC-ECD	0.066	0.7		0.01 - 0.7	n/c	♿	n/c	♿
145-73-3	endothall	Penwalt	Groundwater	Color								
72-20-8	endrin	505	Drinking Water	GC-ECD	0.063	0.63						
72-20-8	endrin	508	Drinking Water	GC-ECD	0.015	0.2						
72-20-8	endrin	608/8080	Waste/Groundwater	GC-ECD	0.006	0.06		0.01 - 0.1				
53494-70-5	endrin ketone	8080	Groundwater	GC-ECD					n/c		n/c	
106-89-8	epichlorohydrin	8080	Groundwater	GC-ECD					8.84E+0			
140-88-5	ethyl acrylate	8020	Wastewater	GC-PID		10		1 - 10	1.82E+0	♿*		
100-41-4	ethylbenzene	502.1	Drinking Water	GC-PID	0.01	0.1						

n/c = not calculated

pqlh2o.xls

10/12/93

TA' I: WATER

MDLs, PQLs, and Com, ion of Method B Values (µg/L)

♦ Lab PQL Range < Published PQL

CAS	Chemical	Method	Matrix	Detector	MDL (µg/L)	PQL (µg/L)	♦	LABORATORY PQL RANGE µg/L	Method B GW Value (µg/L) - C	♦ PQL > GW Method B (flag = na)	Method B SW Value (µg/L) - C	♦ PQL > SW Method B (flag = na)
100-41-4	ethylbenzene	502.2	Drinking Water	GC								
100-41-4	ethylbenzene	503.1	Drinking Water	GC	0.002	0.02						
100-41-4	ethylbenzene	524.1	Drinking Water	GC/MS	0.06	0.6						
100-41-4	ethylbenzene	524.2	Drinking Water	GC/MS	0.2	2						
100-41-4	ethylbenzene	601	Wastewater	GC	7.2	72						
100-41-4	ethylbenzene	624	Wastewater	GC/MS	7.2	72						
100-41-4	ethylbenzene	8240	Groundwater	GC/MS		5		0.5 - 10				
106-93-4	ethylene dibromide (EDB)	504	Drink/Groundwater	GC	0.01	0.1			5.15E-4	♦*		
106-93-4	ethylene dibromide (EDB)	EPA 1985	Wastewater	GC-ECD	0.2	2			5.15E-4	♦*		
107-21-1	ethylene glycol		Groundwater	GC-FID		1000		2 - 1000				
96-45-7	ethylene thiourea	632	Wastewater	HPLC					2.43E+0	♦*		
206-44-0	fluoranthene	625	Wastewater	GC/MS	2.2	22						
206-44-0	fluoranthene	8270	Groundwater	GC/MS		10		1.2 - 10				
206-44-0	fluoranthene	610/8310	Waste/Groundwater	HPLC	0.21	2		1.2 - 2				
86-73-7	fluorene	625	Wastewater	GC/MS	1.9	19		1 - 19				
86-73-7	fluorene	8270	Groundwater	GC/MS		10		1 - 10				
86-73-7	fluorene	610/8310	Waste/Groundwater	HPLC	0.21	2		1 - 2				
133-07-3	folpet								2.50E+1			
67-45-8	furazolidone								2.30E-2			
531-82-8	furium								1.75E-3			
76-44-8	heptachlor	505	Drinking Water	GC-ECD	0.003	0.03		0.005 - 0.03	1.94E-2	♦*	1.29E-4	♦*
76-44-8	heptachlor	508	Drinking Water	GC-ECD	0.01	0.1			1.94E-2	♦*	1.29E-4	♦*
76-44-8	heptachlor	625	Wastewater	GC/MS	1.9	19			1.94E-2	♦*	1.29E-4	♦*
76-44-8	heptachlor	608/8080	Waste/Groundwater	GC-ECD	0.003	0.03		0.005 - 0.03	1.94E-2	♦*	1.29E-4	♦*
1024-57-3	heptachlor epoxide	505	Drinking Water	GC-ECD	0.004	0.04			9.62E-3	♦*	6.36E-5	♦*
1024-57-3	heptachlor epoxide	508	Drinking Water	GC-ECD	0.015	0.2			9.62E-3	♦*	6.36E-5	♦*
1024-57-3	heptachlor epoxide	625	Wastewater	GC/MS	2.2	22			9.62E-3	♦*	6.36E-5	♦*
1024-57-3	heptachlor epoxide	608/8080	Waste/Groundwater	GC-ECD	0.083	0.8		0.005 - 0.8	9.62E-3	♦*	6.36E-5	♦*
118-74-1	hexachlorobenzene	505	Drinking Water	GC-ECD	0.002	0.02			5.47E-2		4.66E-4	♦*
118-74-1	hexachlorobenzene	508	Drinking Water	GC-ECD	0.008	0.08			5.47E-2	♦*	4.66E-4	♦*
118-74-1	hexachlorobenzene	625	Wastewater	GC/MS	1.9	19			5.47E-2	♦*	4.66E-4	♦*
118-74-1	hexachlorobenzene	8270	Groundwater	GC/MS		10		1 - 10	5.47E-2	♦*	4.66E-4	♦*
118-74-1	hexachlorobenzene	612/8120	Waste/Groundwater	GC-ECD	0.05	0.5		0.5 - 10	5.47E-2	♦*	4.66E-4	♦*
87-68-3	hexachlorobutadiene	524.2	Drinking Water	GC/MS	0.11	1			5.61E-1	♦*	2.99E+1	
87-68-3	hexachlorobutadiene	625	Wastewater	GC/MS	0.9	9			5.61E-1	♦*	2.99E+1	
87-68-3	hexachlorobutadiene	8270	Groundwater	GC/MS		10		2 - 10	5.61E-1	♦*	2.99E+1	

n/c = not calculated

pqlh2o.xls

TABLE I: WATER

MDLs, PQLs, and Comparison of Method B Values (µg/L)

♿ Lab PQL Range < Published PQL

CAS	Chemical	Method	Matrix	Detector	MDL (µg/L)	PQL (µg/L)	♿	LABORATORY PQL RANGE ug/L	Method B GW Value (µg/L) - C	♿ PQL > GW Method B (flag = na)	Method B SW Value (µg/L) - C	♿ PQL > SW Method B (flag = na)
87-68-3	hexachlorobutadiene	502.2/503.1	Drinking Water	GC-ECD	0.02	0.2			5.61E-1		2.99E+1	
87-68-3	hexachlorobutadiene	612/8120	Waste/Groundwater	GC-ECD	0.34	3		1 - 10	5.61E-1	♿*	2.99E+1	
319-84-6	hexachlorocyclohexane;alpha	608/8080	Waste/Groundwater	GC-ECD	0.003	0.03		0.005 - 0.03	1.39E-2	♿*	7.91E-3	♿*
319-85-7	hexachlorocyclohexane;beta	608/8080	Waste/Groundwater	GC-ECD	0.006	0.06		0.005 - 0.06	4.86E-2	♿*	2.77E-2	♿*
319-86-8	hexachlorocyclohexane;delta	608/8080	Waste/Groundwater	GC-ECD	0.009	0.09		0.005 - 0.09				
58-89-9	hexachlorocyclohexane;gamma (li	505	Drinking Water	GC-ECD	0.003	0.03		0.005 - 0.1	6.73E-2		3.84E-2	
58-89-9	hexachlorocyclohexane;gamma (li	8080	Groundwater	GC-ECD	0.004	0.04		0.005 - 0.1	6.73E-2		3.84E-2	♿*
77-47-4	hexachlorocyclopentadiene	505	Drinking Water	GC-ECD	0.13	1						
77-47-4	hexachlorocyclopentadiene	8120	Groundwater	GC-ECD	0.4	4		4 - 10				
77-47-4	hexachlorocyclopentadiene	8270	Groundwater	GC/MS		10		1 - 10				
67-72-1	hexachloroethane	625	Wastewater	GC/MS	1.6	16			6.25E+0	♿*	5.33E+0	♿*
67-72-1	hexachloroethane	8270	Groundwater	GC/MS		10		1 - 10	6.25E+0	♿*	5.33E+0	♿*
67-72-1	hexachloroethane	612/8120	Waste/Groundwater	GC-ECD	0.03	0.3		0.3 - 10	6.25E+0		5.33E+0	
591-78-6	hexanone;2-	8240	Groundwater	GC/MS		50		1 - 50	n/c	♿	n/c	♿
302-01-2	hydrazine sulfate	8270	Groundwater	GC/MS		50		0.05 - 50	2.92E-2	♿*		
193-39-5	indeno[1,2,3-c,d]pyrene	625	Wastewater	GC/MS	3.7	37			1.20E-2	♿*	2.96E-2	♿*
193-39-5	indeno[1,2,3-c,d]pyrene	8270	Groundwater	GC/MS		10		2 - 10	1.20E-2	♿*	2.96E-2	♿*
193-39-5	indeno[1,2,3-c,d]pyrene	610/8310	Waste/Groundwater	HPLC	0.043	0.4		0.4 - 2	1.20E-2	♿*	2.96E-2	♿*
78-59-1	isophorone	625	Wastewater	GC/MS	2.2	22			9.21E+1		1.56E+3	
78-59-1	isophorone	8090	Groundwater	GC-FID	5.7	57		2 - 57	9.21E+1		1.56E+3	
78-59-1	isophorone	8270	Groundwater	GC/MS		10		2 - 10	9.21E+1		1.56E+3	
78-59-1	isophorone	609/8090	Waste/Groundwater	GC-ECD	15.7	157		10 - 160	9.21E+1	♿*	1.56E+3	
7439-92-1	lead	200.7	Water	ICP	42	420	♿	5 - 50				
7439-92-1	lead	200.7/6010	Groundwater	ICP	42	420						
7439-92-1	lead	239.1/7420	Water	FAA	100	1000						
7439-92-1	lead	239.2/7421	Water	GFAA	1	10						
121-75-5	malathion	614	Wastewater	GC-FPD	ND							
121-75-5	malathion	8270	Groundwater	GC/MS		50		1 - 50				
7439-97-6	mercury (inorganic)	7471	Groundwater	AA	0.2	2						
7439-97-6	mercury (inorganic)	245.1/7470	Water/Groundwater	AA	0.2	2		0.001 - 2				
72-43-5	methoxychlor	505	Drinking Water	GC-ECD	0.96	10						
72-43-5	methoxychlor	8080	Groundwater	GC-ECD	0.176	2		0.02 - 2				
72-43-5	methoxychlor	8270	Groundwater	GC/MS		10		1 - 10				
74-83-9	methyl bromide	8011	Groundwater	GC/ECD		10		1 - 10				
78-93-3	methyl ethyl ketone (MEK)	8015	Groundwater	GC-FID								
108-10-1	methyl isobutyl ketone (MIBK)	8015	Groundwater	GC-FID								

n/c = not calculated

pqlh2o.xls

10/12/93

T/ I: WATER

MDLs, PQLs, and Com.. ison of Method B Values (µg/L)

♿ Lab PQL Range < Published PQL

CAS	Chemical	Method	Matrix	Detector	MDL (µg/L)	PQL (µg/L)	♿	LABORATORY PQL RANGE ug/L	Method B GW Value (µg/L) - C	♿* PQL > GW Method B (flag = na)	Method B SW Value (µg/L) - C	♿* PQL > SW Method B (flag = na)
298-00-0	methyl parathion	8140	Groundwater	GC-FID	0.03	0.3		0.25 - 0.3				
298-00-0	methyl parathion	8270	Groundwater	GC/MS		10		0.3 - 10				
94-74-6	methyl-4-chlorophenoxy-acetic acl	615/8150	Waste/Groundwater	GC-ECD	249	2500		250 - 2500				
636-21-5	methylanaline hydrochloride;2-	8270	Groundwater	GC/MS		10		1 - 10	4.86E-1	♿*		
95-53-4	methylanaline;2-	8270	Groundwater	GC/MS		10		1 - 10	3.65E-1	♿*		
75-09-2	methylene chloride	502.1	Drinking Water	GC-PID					5.83E+0		9.60E+2	
75-09-2	methylene chloride	502.2	Drinking Water	GC-ECD	0.02	0.2			5.83E+0		9.60E+2	
75-09-2	methylene chloride	524.1	Drinking Water	GC/MS	1	10			5.83E+0	♿*	9.60E+2	
75-09-2	methylene chloride	524.2	Drinking Water	GC/MS	0.03	0.3			5.83E+0		9.60E+2	
75-09-2	methylene chloride	601	Wastewater	GC-Hall	0.25	3			5.83E+0		9.60E+2	
75-09-2	methylene chloride	624	Wastewater	GC/MS	2.8	28			5.83E+0	♿*	9.60E+2	
75-09-2	methylene chloride	8010	Groundwater	GC-Hall					5.83E+0		9.60E+2	
75-09-2	methylene chloride	8240	Groundwater	GC/MS		5		0.2 - 10	5.83E+0		9.60E+2	
	methylnaphthalene;2-	8270	Groundwater	GC/MS		10		3 - 10	n/c	♿	n/c	♿
2385-85-5	mirex	617	Wastewater	GC-ECD	0.015	0.2			4.86E-2	♿*		
2385-85-5	mirex	8270	Groundwater	GC/MS		10		0.1 - 10	4.86E-2	♿*		
91-20-3	naphthalene	502.2	Drinking Water	GC-PID	0.06	0.6						
91-20-3	naphthalene	503.1	Drinking Water	GC-PID	0.04	0.4						
91-20-3	naphthalene	524.2	Drinking Water	GC/MS	0.04	0.4						
91-20-3	naphthalene	625	Wastewater	GC/MS	1.6	16		3 - 16				
91-20-3	naphthalene	8100	Groundwater	GC-FID								
91-20-3	naphthalene	8270	Groundwater	GC/MS		10		3 - 10				
91-20-3	naphthalene	610/8310	Waste/Groundwater	HPLC	1.8	18		3 - 18				
unavailable03	nickel, refinery dust NOTE: Meth	249.2	Water	GFAA	1	10						
unavailable03	nickel, refinery dust NOTE: Meth	200.7/6010	Groundwater	ICP	15	150		10 - 150				
unavailable03	nickel, refinery dust NOTE: Meth	249.1/7520	Surface Water	FAA	40	400						
7440-02-0	nickel, sol. salts NOTE: Method	249.2	Water	GFAA	1	10						
7440-02-0	nickel, sol. salts NOTE: Method	200.7/6010	Groundwater	ICP	15	150		10 - 150				
7440-02-0	nickel, sol. salts NOTE: Method	249.1/7520	Surface Water	FAA	40	400						
88-74-4	nitroaniline;2-	8270	Groundwater	GC/MS		50		6 - 50	n/c	♿	n/c	♿
99-09-2	nitroaniline;3-	8270	Groundwater	GC/MS		50		6 - 50	n/c	♿	n/c	♿
100-01-6	nitroaniline;4-	8270	Groundwater	GC/MS		20		2 - 50	n/c	♿	n/c	♿
98-95-3	nitrobenzene	625	Wastewater	GC/MS	1.9	19						
98-95-3	nitrobenzene	8090	Groundwater	GC-FID	3.6	36		10 - 36				
98-95-3	nitrobenzene	8270	Groundwater	GC/MS		10		2 - 10				
98-95-3	nitrobenzene	609/8090	Waste/Groundwater	GC-ECD	13.7	140		10 - 140				

n/c = not calculated

pqlh2o.xls

TABLE I: WATER

MDLs, PQLs, and Comparison of Method B Values (µg/L)

◊ Lab PQL Range < Published PQL

CAS	Chemical	Method	Matrix	Detector	MDL (µg/L)	PQL (µg/L)	◊	LABORATORY PQL RANGE ug/L	Method B GW Value (µg/L) - C	PQL > GW Method B (flag = na)	Method B SW Value (µg/L) - C	PQL > SW Method B (flag = na)
59-87-0	nitrofurazone								5.83E-2			
	nitrophenol;2-	625	Wastewater	GC/MS	3.6	36		2 - 36	n/c		n/c	
	nitrophenol;2-	8040	Groundwater	GC-FID	0.45	5		5 - 10	n/c		n/c	
	nitrophenol;2-	8270	Groundwater	GC/MS		10		2 - 10	n/c		n/c	
	nitrophenol;2-	604/8040	Waste/Groundwater	GC-ECD	0.77	8		2 - 8	n/c		n/c	
	nitrophenol;4	625	Wastewater	GC/MS	2.4	24		4 - 24	n/c		n/c	
	nitrophenol;4-	515.1	Water	GC-ECD	0.13	1			n/c		n/c	
	nitrophenol;4-	8270	Groundwater	GC/MS		50		4 - 50	n/c		n/c	
	nitrophenol;4-	604/8040	Waste/Groundwater	GC-FID	2.8	28		4 - 28	n/c		n/c	
	nitrophenol;4-	8040	Groundwater	GC-ECD	0.7	7		1 - 7	n/c		n/c	
924-16-3	nitroso-di-n-butylamine;N-	607	Wastewater	GC-Hall		10		1 - 10	1.62E-2	◊*		
924-16-3	nitroso-di-n-butylamine;N-	8270	Groundwater	GC/MS		10		1 - 10	1.62E-2	◊*		
621-64-7	nitroso-di-n-propylamine;N-	607	Wastewater	GC-NP/Hall	0.46	5			1.25E-2	◊*	8.19E-1	◊*
621-64-7	nitroso-di-n-propylamine;N-	8270	Groundwater	GC/MS		10		2 - 10	1.25E-2	◊*	8.19E-1	◊*
1116-54-7	nitrosodiethanolamine;N-	607/8270	Waste/Groundwater	GC-Hall/GC-MS		10		1 - 10	3.13E-2	◊*		
55-18-5	nitrosodiethylamine;N-	607	Wastewater	GC-Hall		10		1 - 10	5.83E-4	◊*		
55-18-5	nitrosodiethylamine;N-	8270	Groundwater	GC/MS		20		6 - 20	5.83E-4	◊*		
62-75-9	nitrosodimethylamine;N- (DMNA)	607	Wastewater	GC-NP/GC-Hall	0.15	2			1.72E-3	◊*	4.89E+0	
86-30-6	nitrosodiphenylamine;N-	607	Wastewater	GC-NP/GC-Hall	0.81	8			1.79E+1		9.73E+0	
86-30-6	nitrosodiphenylamine;N-	625	Wastewater	GC/MS	1.9	19			1.79E+1	◊*	9.73E+0	◊*
86-30-6	nitrosodiphenylamine;N-	8270	Groundwater	GC/MS		10		2 - 10	1.79E+1		9.73E+0	◊*
10595-95-6	nitrosomethylethylamine;N-	625	Wastewater	GC/MS					3.96E-3			
930-55-2	nitrosopyrrolidine;N-	607	Wastewater	GC-Hall		10		1 - 10	4.17E-2	◊*		
930-55-2	nitrosopyrrolidine;N-	8270	Groundwater	GC/MS		40		10 - 40	4.17E-2	◊*		
56-38-2	parathion	614	Wastewater	GC-NP		6		0.3 - 6				
56-38-2	parathion	8270	Groundwater	GC/MS		10		0.3 - 10				
608-93-5	pentachlorobenzene	8270	Groundwater	GC/MS		10		1 - 10				
87-86-5	pentachlorophenol (PCP)	515.1	Water	GC-ECD	0.076	0.8			7.29E-1	◊*	4.91E+0	
87-86-5	pentachlorophenol (PCP)	625	Wastewater	GC/MS	3.6	36		2 - 50	7.29E-1	◊*	4.91E+0	◊*
87-86-5	pentachlorophenol (PCP)	8040	Groundwater	GC-FID	7.4	74		30 - 74	7.29E-1	◊*	4.91E+0	◊*
87-86-5	pentachlorophenol (PCP)	8270	Groundwater	GC/MS		50		4 - 50	7.29E-1	◊*	4.91E+0	◊*
87-86-5	pentachlorophenol (PCP)		Groundwater	GC-ECD	0.59	6		1 - 6	7.29E-1	◊*	4.91E+0	◊*
85-01-8	phenanthrene	625	Wastewater	GC/MS	5.4	54		1 - 54	n/c		n/c	
85-01-8	phenanthrene	8270	Groundwater	GC/MS		10		1 - 10	n/c		n/c	
85-01-8	phenanthrene	610/8310	Waste/Groundwater	HPLC	0.64	6		6 - 10	n/c		n/c	
108-95-2	phenol	625	Wastewater	GC/MS	1.5	15		6 - 15				

n/c = not calculated

pqlh2o.xls

TAF): WATER

MDLs, PQLs, and Comp...on of Method B Values (µg/L)

♿ Lab PQL Range < Published PQL

CAS	Chemical	Method	Matrix	Detector	MDL (µg/L)	PQL (µg/L)	♿	LABORATORY PQL RANGE ug/L	Method B GW Value (µg/L) - C	♿* PQL > GW Method B (flag = na)	Method B SW Value (µg/L) - C	♿* PQL > SW Method B (flag = na)
108-95-2	phenol	8270	Groundwater	GC/MS		10		6 - 10				
108-95-2	phenol	604/8040	Waste/Groundwater	GC-FID	0.14	1		0.5 - 1				
93-65-2	propionic acid;2(2-methyl)-4-chlor	615/8150	Waste/Groundwater	GC-ECD	192	1900		250 - 2500				
129-00-0	pyrene	625	Wastewater	GC/MS	1.9	19						
129-00-0	pyrene	8270	Groundwater	GC/MS		10		1 - 10				
129-00-0	pyrene	610/8310	Waste/Groundwater	HPLC	0.27	3		1 - 3				
7782-49-2	selenium	200.7/6010	Groundwater	ICP	75	750		5 - 750				
7782-49-2	selenium	270.2/7740	Groundwater	GFAA	2	20						
7782-49-2	selenium	270.3/7741	Groundwater	GHAA	2	20						
7440-22-4	silver	200.7/6010	Groundwater	ICP	7	70	♿	0.5 - 20				
7440-22-4	silver	272.1/7740	Groundwater	FAA	10	100						
7440-22-4	silver	272.2/7741	Groundwater	GFAA	0.2	2						
122-34-9	simazine	507	Drinking Water	GC-N/P	0.075	0.75		0.3 - 10	7.29E-1	♿*		
122-34-9	simazine	619	Wastewater	GC-Hall	0.06	0.6			7.29E-1			
100-42-5	styrene	502.2	Drinking Water	GC-PID	0.01	0.1			1.46E+0			
100-42-5	styrene	503.1	Drinking Water	GC-PID	0.008	0.08			1.46E+0			
100-42-5	styrene	524.1	Drinking Water	GC/MS	0.2	2			1.46E+0	♿*		
100-42-5	styrene	524.2	Drinking Water	GC/MS	0.04	0.4			1.46E+0			
100-42-5	styrene	8240	Groundwater	GC/MS		5		1 - 10	1.46E+0	♿*		
1746-01-6	TCDD;2,3,7,8- (dioxin)	8290	Groundwater	HRGC/HRMS	3E-04	0.003			5.83E-7	♿*	8.64E-9	♿*
	TCDF;2,3,7,8-	8290	Groundwater	HRGC/HRMS	3E-04	0.003			n/c	♿	n/c	♿
95-94-3	tetrachlorobenzene;1,2,4,5-	8270	Groundwater	GC/MS		10		1 - 10				
79-34-5	tetrachloroethane;1,1,2,2-	502.1	Drinking Water	GC-Hall	0.01	0.1			2.19E-1		6.48E+0	
79-34-5	tetrachloroethane;1,1,2,2-	502.2	Drinking Water	GC-ECD	0.01	0.1			2.19E-1		6.48E+0	
79-34-5	tetrachloroethane;1,1,2,2-	524.1	Drinking Water	GC/MS	0.4	4			2.19E-1	♿*	6.48E+0	
79-34-5	tetrachloroethane;1,1,2,2-	524.2	Drinking Water	GC/MS	0.05	0.5			2.19E-1	♿*	6.48E+0	
79-34-5	tetrachloroethane;1,1,2,2-	601	Wastewater	GC/MS	0.03	0.3			2.19E-1	♿*	6.48E+0	
79-34-5	tetrachloroethane;1,1,2,2-	624	Wastewater	GC/MS	6.9	69			2.19E-1	♿*	6.48E+0	♿*
79-34-5	tetrachloroethane;1,1,2,2-	8010	Groundwater	GC-Hall	0.03	0.3		0.3 - 2	2.19E-1	♿*	6.48E+0	
79-34-5	tetrachloroethane;1,1,2,2-	8240	Groundwater	GC/MS		5		0.2 - 10	2.19E-1	♿*	6.48E+0	
127-18-4	tetrachloroethylene (PCE)	502.1	Drinking Water	GC-Hall	0.001	0.01			8.58E-1		4.15E+0	
127-18-4	tetrachloroethylene (PCE)	502.2	Drinking Water	GC-ECD	0.04	0.4			8.58E-1		4.15E+0	
127-18-4	tetrachloroethylene (PCE)	503.1	Drinking Water	GC-PID	0.01	0.1			8.58E-1		4.15E+0	
127-18-4	tetrachloroethylene (PCE)	524.1	Drinking Water	GC/MS	0.3	3			8.58E-1	♿*	4.15E+0	
127-18-4	tetrachloroethylene (PCE)	524.2	Drinking Water	GC/MS	0.14	1			8.58E-1	♿*	4.15E+0	
127-18-4	tetrachloroethylene (PCE)	601	Wastewater	GC-Hall	0.03	0.3			8.58E-1		4.15E+0	

n/c = not calculated

pqlh2o.xls

TABLE I: WATER

MDLs, PQLs, and Comparison of Method B Values (µg/L)

♦ Lab PQL Range < Published PQL

CAS	Chemical	Method	Matrix	Detector	MDL (µg/L)	PQL (µg/L)	♦	LABORATORY PQL RANGE ug/L	Method B GW Value (µg/L) - C	♦* PQL > GW Method B (flag = nel)	Method B SW Value (µg/L) - C	♦* PQL > SW Method B (flag = nel)
127-18-4	tetrachloroethylene (PCE)	624	Wastewater	GC/MS	4.1	41			8.58E-1	♦*	4.15E+0	♦*
127-18-4	tetrachloroethylene (PCE)	8010	Groundwater	GC-Hall	0.03	0.3		0.2 - 10	8.58E-1		4.15E+0	
127-18-4	tetrachloroethylene (PCE)	8240	Groundwater	GC/MS		5		0.2 - 10	8.58E-1	♦*	4.15E+0	♦*
5216-25-1	tetrachlorotoluene;P,a,a,a-								4.38E-3			
961-11-5	tetrachlorvinphos	8140	Groundwater	GC-FPD		2		0.25 - 2	3.65E+0			
108-88-3	toluene	502.2	Drinking Water	GC-PID	0.01	0.1						
108-88-3	toluene	503.1	Drinking Water	GC-PID	0.02	0.2						
108-88-3	toluene	524.1	Drinking Water	GC/MS	0.1	1						
108-88-3	toluene	524.2	Drinking Water	GC/MS	0.11	1						
108-88-3	toluene	602	Wastewater	GC-PID	0.2	2						
108-88-3	toluene	624	Wastewater	GC/MS	6	60						
108-88-3	toluene	8020	Groundwater	GC-PID	0.2	2						
108-88-3	toluene	8240	Groundwater	GC/MS		5		0.5 - 10				
95-80-7	toluene-2,4-diamine								2.73E-2			
95-53-4	toluidine;o-	8270	Groundwater	GC/MS		10		1 - 10	3.65E-1	♦*		
8001-35-2	toxaphene	505	Drinking Water	GC	1	10			7.95E-2	♦*	4.50E-4	♦*
8001-35-2	toxaphene	608/8080	Waste/Groundwater	GC-ECD	0.24	2			7.95E-2	♦*	4.50E-4	♦*
93-72-1	TP;2,4,5- (Silvex)	615/8150	Waste/Groundwater	GC-ECD	0.17	2		0.5 - 2				
93-72-1	TP;2,4,5- (Silvex)	515.1	Water	GC-ECD	0.075	0.8						
120-82-1	trichlorobenzene;1,2,4-	502.2	Drinking Water	GC-PID	0.02	0.2						
120-82-1	trichlorobenzene;1,2,4-	503.1	Drinking Water	GC-PID	0.03	0.3						
120-82-1	trichlorobenzene;1,2,4-	524.2	Drinking Water	GC/MS	0.04	0.4						
120-82-1	trichlorobenzene;1,2,4-	625	Wastewater	GC/MS	1.9	19						
120-82-1	trichlorobenzene;1,2,4-	8270	Groundwater	GC/MS		10		1 - 10				
120-82-1	trichlorobenzene;1,2,4-	612/8120	Waste/Groundwater	GC-ECD	0.05	0.5		0.5 - 1				
71-55-6	trichloroethane;1,1,1-	502.1	Drinking Water	GC	0.003	0.03						
71-55-6	trichloroethane;1,1,1-	502.2	Drinking Water	GC-PID	0.03	0.3						
71-55-6	trichloroethane;1,1,1-	524.1	Drinking Water	GC/MS	0.3	3						
71-55-6	trichloroethane;1,1,1-	524.2	Drinking Water	GC/MS	0.08	0.8						
71-55-6	trichloroethane;1,1,1-	601	Wastewater	GC	0.03	0.3						
71-55-6	trichloroethane;1,1,1-	624	Wastewater	GC/MS	3.8	38						
71-55-6	trichloroethane;1,1,1-	8010	Groundwater	GC	0.03	0.3		0.2 - 2				
71-55-6	trichloroethane;1,1,1-	8240	Groundwater	GC/MS		5		0.2 - 10				
79-00-5	trichloroethane;1,1,2-	502.1	Drinking Water	GC	0.007	0.07			7.68E-1		2.53E+1	
79-00-5	trichloroethane;1,1,2-	502.2	Drinking Water	GC-PID	0.04	0.4			7.68E-1		2.53E+1	
79-00-5	trichloroethane;1,1,2-	524.1	Drinking Water	GC/MS					7.68E-1		2.53E+1	

n/c = not calculated

pqlh2o.xls

10/12/93

T/ I: WATER

MDLs, PQLs, and Comparison of Method B Values (µg/L)

◆ Lab PQL Range < Published PQL

CAS	Chemical	Method	Matrix	Detector	MDL (µg/L)	PQL (µg/L)	◆	LABORATORY PQL RANGE ug/L	Method B GW Value (µg/L) - C	◆ PQL > GW Method B (flag = na)	Method B SW Value (µg/L) - C	◆ PQL > SW Method B (flag = na)
79-00-5	trichloroethane;1,1,2-	524.2	Drinking Water	GC/MS	0.1	1			7.68E-1	◆	2.53E+1	
79-00-5	trichloroethane;1,1,2-	601	Wastewater	GC	0.02	0.2			7.68E-1		2.53E+1	
79-00-5	trichloroethane;1,1,2-	624	Wastewater	GC/MS	5	50			7.68E-1	◆	2.53E+1	◆
79-00-5	trichloroethane;1,1,2-	8010	Groundwater	GC	0.02	0.2		0.2 - 10	7.68E-1		2.53E+1	
79-00-5	trichloroethane;1,1,2-	8240	Groundwater	GC/MS		5		0.5 - 10	7.68E-1	◆	2.53E+1	
79-01-6	trichloroethylene (TCE)	502.1	Drinking Water	GC	0.001	0.01			3.98E+0		5.56E+1	
79-01-6	trichloroethylene (TCE)	502.2	Drinking Water	GC-ECD	0.01	0.1			3.98E+0		5.56E+1	
79-01-6	trichloroethylene (TCE)	503.1	Drinking Water	GC-PID	0.01	0.1			3.98E+0		5.56E+1	
79-01-6	trichloroethylene (TCE)	524.1	Drinking Water	GC/MS	0.4	4			3.98E+0	◆	5.56E+1	
79-01-6	trichloroethylene (TCE)	524.2	Drinking Water	GC/MS	0.19	2			3.98E+0		5.56E+1	
79-01-6	trichloroethylene (TCE)	601	Wastewater	GC	0.12	1			3.98E+0		5.56E+1	
79-01-6	trichloroethylene (TCE)	624	Wastewater	GC/MS	1.9	19			3.98E+0	◆	5.56E+1	
79-01-6	trichloroethylene (TCE)	8010	Groundwater	GC-Hall	0.12	1		1 - 5	3.98E+0		5.56E+1	
79-01-6	trichloroethylene (TCE)	8240	Groundwater	GC/MS		5		2 - 5	3.98E+0	◆	5.56E+1	
75-69-4	trichlorofluoromethane	502.1	Drinking Water	GC-Hall								
75-69-4	trichlorofluoromethane	502.2	Drinking Water	GC-ECD	0.03	0.3						
75-69-4	trichlorofluoromethane	524.1	Drinking Water	GC/MS	0.2	2						
75-69-4	trichlorofluoromethane	524.2	Drinking Water	GC/MS	0.08	0.8						
75-69-4	trichlorofluoromethane	601	Wastewater	GC-Hall								
75-69-4	trichlorofluoromethane	624	Wastewater	GC/MS								
75-69-4	trichlorofluoromethane	8010	Groundwater	GC-Hall								
95-95-4	trichlorophenol;2,4,5-	8270	Groundwater	GC/MS		10		0.1 - 10				
88-06-2	trichlorophenol;2,4,6-	625	Wastewater	GC/MS	2.7	27		8 - 27	7.95E+0	◆	3.93E+0	◆
88-06-2	trichlorophenol;2,4,6-	8270	Groundwater	GC/MS		10		8 - 10	7.95E+0	◆	3.93E+0	◆
88-06-2	trichlorophenol;2,4,6-	604/8040	Waste/Groundwater	GC-FID	0.64	6		0.1 - 10	7.95E+0		3.93E+0	◆
88-06-2	trichlorophenol;2,4,6-			GC-ECD	0.58	6		2 - 8	7.95E+0		3.93E+0	◆
93-76-5	trichlorophenoxyacetic acid;2,4,5-	515.1	Water	GC-ECD	0.08	0.8						
93-76-5	trichlorophenoxyacetic acid;2,4,5-	615/8150	Waste/Groundwater	GC-ECD	0.2	2		0.5 - 2				
512-56-1	trimethyl phosphate	8270	Groundwater	GC/MS		10		1 - 10	2.36E+0	◆		
108-05-4	vinyl acetate	8240	Groundwater	GC/MS		50		1 - 50				
75-01-4	vinyl chloride	502.1	Drinking Water	GC	0.01	0.1			2.30E-2	◆	2.92E+0	
75-01-4	vinyl chloride	502.2	Drinking Water	GC-PID	0.02	0.2			2.30E-2	◆	2.92E+0	
75-01-4	vinyl chloride	524.1	Drinking Water	GC/MS	0.3	3			2.30E-2	◆	2.92E+0	◆
75-01-4	vinyl chloride	524.2	Drinking Water	GC/MS	0.17	2			2.30E-2	◆	2.92E+0	
75-01-4	vinyl chloride	624	Wastewater	GC/MS		10		1 - 10	2.30E-2	◆	2.92E+0	◆
75-01-4	vinyl chloride	8240	Groundwater	GC/MS		10		1 - 10	2.30E-2	◆	2.92E+0	◆

n/c = not calculated

pqlh2o.xls

10/12/93

TABLE I: WATER
MDLs, PQLs, and Comparison of Method B Values (µg/L)

♦ Lab PQL Range < Published PQL

CAS	Chemical	Method	Matrix	Detector	MDL (µg/L)	PQL (µg/L)	♦	LABORATORY PQL RANGE ug/L	Method B GW Value (µg/L) - C	♦* PQL > GW Method B (flag = na)	Method B SW Value (µg/L) - C	♦* PQL > SW Method B (flag = na)
75-01-4	vinyl chloride	601/8010	Waste/Groundwater	GC	0.18	2		2 - 10	2.30E-2	♦*	2.92E+0	
1330-20-7	xylene (total)	8020	Groundwater	GC-PID		5		0.5 - 10				
1330-20-7	xylene (total)	8240	Groundwater	GC/MS		5		0.5 - 10				
108-38-3	xylene;m-	502.2	Drinking Water	GC-PID	0.01	0.1						
108-38-3	xylene;m-	503.1	Drinking Water	GC-PID	0.004	0.04						
108-38-3	xylene;m-	524.1	Drinking Water	GC/MS								
108-38-3	xylene;m-	524.2	Drinking Water	GC/MS	0.05	0.5						
95-47-6	xylene;o-	502.2	Drinking Water	GC-PID	0.02	0.2						
95-47-6	xylene;o-	503.1	Drinking Water	GC-PID	0.004	0.04						
95-47-6	xylene;o-	524.1	Drinking Water	GC/MS	0.2	2						
95-47-6	xylene;o-	524.2	Drinking Water	GC/MS	0.11	1						
106-42-3	xylene;p-	502.2	Drinking Water	GC-PID	0.01	0.1			n/c		n/c	
106-42-3	xylene;p-	503.1	Drinking Water	GC-PID	0.002	0.02			n/c		n/c	
106-42-3	xylene;p-	524.1	Drinking Water	GC/MS	0.3	3			n/c		n/c	
106-42-3	xylene;p-	524.2	Drinking Water	GC/MS	0.13	1			n/c		n/c	
7440-66-6	zinc	200.7/6010	Water/Groundwater	ICP	2	20		0.5 - 50				
7440-66-6	zinc	289.1/7950	Water/Groundwater	FAA	5	50						
7440-66-6	zinc	289.2/7951	Water/Groundwater	GFAA	0.05	0.5						

AR 034012

n/c = not calculated

pqlh2o.xls

TABLE SOIL

MDLs, PQLs, and Comparison of Method B Values

Lab PQL Range < Published PQL

CAS	Chemical	Method	Detector	MDL (mg/kg)	PQL (mg/kg)		LABORATORY PQL RANGE (mg/kg)	10e-6 Method B Soil Value (mg/kg)	PQL > Soil Method B (flag=na)
83-32-9	acenaphthene	8270	GC/MS		0.66		0.013 - 0.66		
83-32-9	acenaphthene	8310	HPLC	0.0018	1.2		0.017 - 1.2		
208-96-8	acenaphthylene	8270	GC/MS		0.66		0.017 - 0.66	n/c	
208-96-8	acenaphthylene	8310	HPLC	0.0023	1.5		0.017 - 1.5	n/c	
67-64-1	acetone	8240	GC/MS		0.01		0.001 - 0.05		
107-02-8	acrolein	8030	GC-FID	0.0007	0.007		0.001 - 0.01		
79-06-1	acrylamide	8015	GC-FID					2.22E-1	
107-13-1	acrylonitrile	8030	GC-FID	0.0005	0.005		0.001 - 0.05	1.85E+0	
15972-60-8	alachlor	505.2	GC-ECD		0.01			1.23E+1	
116-06-3	aldicarb	531.1	HPLC		0.5				
309-00-2	aldrin	8080	GC-ECD	4E-06	0.003		0.0017 - 0.003	5.88E-2	
62-53-3	aniline	8270	GC/MS		0.66		0.067 - 0.66	1.75E+2	
120-12-7	anthracene	8270	GC/MS		0.66		0.017 - 0.66		
120-12-7	anthracene	8310	HPLC	1.3E-05	0.009		0.005 - 0.009		
7440-36-0	antimony	6010	ICP	1.6	16		1.5 - 10		
7440-36-0	antimony	7041	AA	0.15	1.5		0.00025 - 1		
140-57-8	aramite	8270	GC/MS					4.00E+1	
12674-11-2	Aroclor 1016 (PCB)	8080	GC-ECD		0.044		0.017 - 0.1		
11104-28-2	Aroclor 1221 (PCB)	8080	GC-ECD		0.044		0.017 - 0.1	n/c	
11141-16-5	Aroclor 1232 (PCB)	8080	GC-ECD		0.044		0.017 - 0.1	n/c	
53469-21-9	Aroclor 1242 (PCB)	8080	GC-ECD		0.044		0.017 - 0.1	n/c	
12672-29-6	Aroclor 1248 (PCB)	8080	GC-ECD		0.044		0.017 - 0.1	n/c	
11097-69-1	Aroclor 1254 (PCB)	8080	GC-ECD		0.088		0.017 - 0.1	n/c	
11096-82-5	Aroclor 1260 (PCB)	8080	GC-ECD		0.088		0.017 - 0.1	n/c	
7440-38-2	arsenic	6010	ICP	2.5	25		2.5 - 10	1.43E+0	
7440-38-2	arsenic	7060	GFAA	0.05	0.5		0.00025 - 0.5	1.43E+0	
7440-38-2	arsenic	7061	GHAA	0.1	1			1.43E+0	
1332-21-4	asbestos								
1912-24-9	atrazine	619	GC/NP		0.05			4.55E+0	
103-33-3	azobenzene	8270	GC/MS		0.33		0.033 - 0.33	9.09E+0	
56-55-3	benz[a]anthracene	8270	GC/MS		0.66		0.0055 - 0.66	1.37E-1	
56-55-3	benz[a]anthracene	8310	HPLC	1.3E-05	0.009		0.005 - 0.009	1.37E-1	
71-43-2	benzene	8020	GC-PID	0.0002	0.002		0.001 - 0.04	3.45E+1	

n/c = not calculated

TABLE II: SOIL

MDLs, PQLs, and Comparison of Method B Values

Lab PQL Range < Published PQL

CAS	Chemical	Method	Dectector	MDL (mg/kg)	PQL (mg/kg)		LABORATORY PQL RANGE (mg/kg)	10e-6 Method B Soil Value (mg/kg)	PQL > Soil Method B (flag=na)
71-43-2	benzene	8240	GC/MS		0.005		0.001 - 0.01	3.45E+1	
92-87-5	benzidine	8250	GC/MS	0.044	29		0.8 - 29	4.35E-3	
50-32-8	benzo[a]pyrene	8270	GC/MS		0.66		0.005 - 0.66	1.37E-1	
50-32-8	benzo[a]pyrene	8310	HPLC	2.3E-05	0.015		0.005 - 0.015	1.37E-1	
205-99-2	benzo[b]fluoranthene	8270	GC/MS		0.66		0.005 - 0.66	1.37E-1	
205-99-2	benzo[b]fluoranthene	8310	HPLC	1.8E-05	0.012		0.005 - 0.012	1.37E-1	
191-24-2	benzo[g,h,i]perylene	8270	GC/MS		0.66		0.01 - 0.66	n/c	
191-24-2	benzo[g,h,i]perylene	8310	HPLC	7.6E-05	0.051		0.01 - 0.051	n/c	
207-08-9	benzo[k]fluoranthene	8270	GC/MS		0.66		0.005 - 0.66	1.37E-1	
207-08-9	benzo[k]fluoranthene	8310	HPLC	1.7E-05	0.011		0.005 - 0.011	1.37E-1	
65-85-0	benzoic acid	8270	GC/MS		3.3		0.1 - 3.3		
98-07-7	benzotrichloride	8270/8010	GC-MS/GC-Hall		0.05		0.05 - 0.33	7.69E-2	
100-51-6	benzyl alcohol	8270	GC/MS		1.3		0.033 - 1.7		
100-44-7	benzyl chloride	8240	GC/MS		0.1		0.1 - 0.33	5.88E+0	
7440-41-7	beryllium	6010	ICP	0.015	0.15		0.125 - 0.25	2.33E-1	
7440-41-7	beryllium	7091	GFAA	0.01	0.1		0.125 - 0.25	2.33E-1	
111-91-1	bis(2-chloroethoxy)methane	8270	GC/MS		0.66		0.033 - 0.66	n/c	
111-44-4	bis(2-chloroethyl)ether (BCEE	8270	GC/MS		0.66		0.017 - 0.66	9.09E-1	
39638-32-9	bis(2-chloroisopropyl)ether	8270	GC/MS		0.66		0.067 - 0.66		
117-81-7	bis(2-ethylhexyl) phthalate (B	8270	GC/MS		0.66		0.017 - 0.66	7.14E+1	
542-88-1	bis(chloromethyl)ether (BCME	8270	GC/MS		0.66		0.01 - 0.66	4.55E-3	
75-27-4	bromodichloromethane (THM	8010	GC-Hall	0.0001	0.001		0.001 - 0.1	1.61E+1	
75-27-4	bromodichloromethane (THM	8240	GC/MS		0.005		0.001 - 0.01	1.61E+1	
75-25-2	bromoform (THM)	8010	GC-Hall	0.0002	0.002		0.001 - 0.5	1.27E+2	
75-25-2	bromoform (THM)	8240	GC/MS		0.005		0.001 - 0.01	1.27E+2	
101-55-3	bromophenyl phenyl ether;4-	8270	GC/MS		0.66		0.017 - 0.66	n/c	
85-68-7	butyl benzyl phthalate	8060	GC-FID	0.015	10				
85-68-7	butyl benzyl phthalate	8270	GC/MS		0.66		0.033 - 0.66		
85-68-7	butyl benzyl phthalate		GC-ECD	0.00034	0.23				
7440-43-9	cadmium	6010	ICP	0.2	2		0.01 - 1		
7440-43-9	cadmium	7130	GFAA	0.005	0.05		0.05 - 0.25		
86-74-8	carbazole	8270	GC/MS		0.33			5.00E+1	
1563-66-2	carbofuran	632	HPLC		0.83				

n/c = not calculated

TABLE SOIL

MDLs, PQLs, and Comp[illegible]on of Method B Values

Lab PQL Range < Published PQL

CAS	Chemical	Method	Detector	MDL (mg/kg)	PQL (mg/kg)		LABORATORY PQL RANGE (mg/kg)	10e-6 Method B Soil Value (mg/kg)	PQL > Soil Method B (flag=na)
75-15-0	carbon disulfide	8240	GC/MS		0.1		0.001 - 0.05		
56-23-5	carbon tetrachloride	8010	GC-Hall	0.00012	0.001		0.001 - 0.01	7.69E+0	
56-23-5	carbon tetrachloride	8240	GC/MS		0.005		0.001 - 0.01	7.69E+0	
57-74-9	chlordane	8080	GC-ECD	1.4E-05	0.009		0.009 - 0.05	7.69E-1	
	chlordane; alpha	8080	GC-ECD		0.01		0.0017 - 0.01	n/c	
	chlordane; gamma	8080	GC-ECD		0.01		0.0017 - 0.01	n/c	
3165-93-3	chloro-2-methylaniline hydroch	8270	GC/MS		0.66		0.33 - 0.66	2.17E+0	
95-69-2	chloro-2-methylaniline;4-	8270	GC/MS		0.66		0.66 - 1.7	1.72E+0	
59-50-7	chloro-3-methylphenol;4-	8040	GC-ECD	0.0018	1.2			n/c	
59-50-7	chloro-3-methylphenol;4-	8040	GC-FID	0.00036	0.24			n/c	
106-47-8	chloroaniline;4-	8270	GC/MS		0.33		0.067 - 0.33		
108-90-7	chlorobenzene	8010	GC-Hall	0.00025	0.003		0.001 - 0.025		
108-90-7	chlorobenzene	8020	GC-PID	0.0002	0.002		0.001 - 0.01		
108-90-7	chlorobenzene	8240	GC/MS		0.005		0.001 - 0.01		
124-48-1	chlorodibromomethane	8010	GC-Hall		0.002		0.001 - 0.1	1.19E+1	
75-00-3	chloroethane	8010	GC-Hall	0.00052	0.005		0.001 - 0.5		
75-00-3	chloroethane	8240	GC/MS		0.01		0.001 - 0.01		
110-75-8	chloroethyl vinyl ether;2-	8010	GC-Hall	0.00013	0.001		0.001 - 0.5	n/c	
110-75-8	chloroethyl vinyl ether;2-	8240	GC/MS		0.01		0.001 - 0.01	n/c	
67-66-3	chloroform	8010	GC-Hall	0.00005	0.0005		0.0005 - 0.05	1.64E+2	
67-66-3	chloroform	8240	GC/MS		0.005		0.001 - 0.01	1.64E+2	
74-87-3	chloromethane	8010	GC-Hall	0.00008	0.0008		0.0008 - 0.5	7.69E+1	
74-87-3	chloromethane	8240	GC/MS		0.01		0.001 - 0.01	7.69E+1	
91-58-7	chloronaphthalene;2-	8120	GC-Hall	0.00094	0.63		0.33 - 0.63	n/c	
91-58-7	chloronaphthalene;2-	8270	GC/MS		0.66		0.017 - 0.66	n/c	
88-73-3	chloronitrobenzene;o-	8270	GC/MS		0.66		0.33 - 0.66	4.00E+1	
100-00-5	chloronitrobenzene;p-	8270	GC/MS		0.66		0.33 - 0.66	5.56E+1	
95-57-8	chlorophenol;2-	8040	GC-FID	0.00031	0.21		0.33 - 1.5		
95-57-8	chlorophenol;2-	8270	GC/MS		0.66		0.17 - 0.66		
95-57-8	chlorophenol;2-		GC-ECD	0.00058	0.39		0.067 - 0.39		
7005-72-3	chlorophenyl phenyl ether;4-	8270	GC/MS		0.66		0.017 - 0.66	n/c	
1897-45-6	chlorthalonil	8080	GC-ECD		0.01		0.0083 - 0.01	9.09E+1	
16065-83-1	chromium(III) (**)	3050/7190	FAA	2.5	25		0.25 - 1		

n/c = not calculated

TABLE II: SOIL

MDLs, PQLs, and Comparison of Method B Values

Lab PQL Range < Published PQL

CAS	Chemical	Method	Detector	MDL (mg/kg)	PQL (mg/kg)		LABORATORY PQL RANGE (mg/kg)	10e-6 Method B Soil Value (mg/kg)	PQL > Soil Method B (flag=na)
16065-83-1	chromium(III) (**)	3050/7191	GFAA	0.05	0.5		0.25 - 0.5		
7440-47-3	chromium(VI) (**)							n/c	
218-01-9	chrysene	8270	GC/MS		0.66		0.01 - 0.66	1.37E-1	
218-01-9	chrysene	8310	HPLC	0.00015	0.1		0.01 - 0.1	1.37E-1	
7440-50-8	copper	6010	ICP	0.3	3		0.5 - 1		
7440-50-8	copper	7211	GFAA	0.05	0.5				
108-39-4	cresol;m-	8270	GC/MS		0.66		0.033 - 0.66		
95-48-7	cresol;o-	8270	GC/MS		0.66		0.033 - 0.66		
106-44-5	cresol;p-	8270	GC/MS		0.66		0.033 - 0.66		
57-12-5	cyanide	SM4500-CN	color		5		0.5 - 5		
75-99-0	dalapon, sodium salt	8150	GC-ECD	0.0058	1.2		0.1 - 1.2		
94-82-6	DB;2,4-	8150	GC-ECD	0.00091	0.18				
72-54-8	DDD;p,p'-	8080	GC-ECD	1.1E-05	0.007		0.0017 - 0.007	4.17E+0	
72-55-9	DDE;p,p'-	8080	GC-ECD	4E-06	0.003		0.0017 - 0.1	2.94E+0	
50-29-3	DDT;p,p'-	8080	GC-ECD	1.2E-05	0.008		0.0017 - 0.1	2.94E+0	
84-74-2	di-n-butyl phthalate	8060	GC-ECD	0.00036	0.004				
84-74-2	di-n-butyl phthalate	8270	GC/MS	0.0025	1.7		0.033 - 1.7		
117-84-0	di-n-octyl phthalate	8060	GC-ECD	0.003	0.03				
117-84-0	di-n-octyl phthalate	8270	GC/MS		0.66		0.017 - 0.66		
2303-16-4	diallate	8150	GC-ECD		0.15			1.64E+1	
333-41-5	diazinon	8140	GC-FPD	0.0006	0.12		0.0017 - 0.033		
53-70-3	dibenz[a,h]anthracene	8270	GC/MS		0.66		0.01 - 0.66	1.37E-1	
53-70-3	dibenz[a,h]anthracene	8310	HPLC	0.00003	0.02		0.01 - 0.66	1.37E-1	
132-64-9	dibenzofuran	8270	GC/MS		0.33		0.033 - 0.33		
124-48-1	dibromochloromethane (THM	8010	GC-Hall	0.00009	0.0009		0.0009 - 0.1	1.19E+1	
124-48-1	dibromochloromethane (THM	8240	GC/MS		0.005		0.001 - 0.01	1.19E+1	
124-48-1	dibromochloromethane (THM	8240	GC/MS		0.005		0.001 - 0.01	1.19E+1	
1918-00-9	dicamba	8150	GC-ECD	0.00027	0.054		0.01 - 0.3		
95-50-1	dichlorobenzene;1,2-	8010	GC-Hall	0.00015	0.0015		0.0015 - 0.1		
95-50-1	dichlorobenzene;1,2-	8020	GC-PID	0.0004	0.004		0.004 - 0.01		
95-50-1	dichlorobenzene;1,2-	8120	GC-ECD	0.00114	0.76		0.01 - 0.76		
95-50-1	dichlorobenzene;1,2-	8270	GC/MS		0.66		0.017 - 0.66		
541-73-1	dichlorobenzene;1,3-	8010	GC-Hall	0.00032	0.0032		0.0032 - 0.33	n/c	

n/c = not calculated

TABLE SOIL

MDLs, PQLs, and Comp[illegible]on of Method B Values

Lab PQL Range < Published PQL

CAS	Chemical	Method	Dectector	MDL (mg/kg)	PQL (mg/kg)		LABORATORY PQL RANGE (mg/kg)	10e-6 Method B Soil Value (mg/kg)	PQL > Soil Method B (flag=na)
541-73-1	dichlorobenzene;1,3-	8020	GC-PID	0.0004	0.004		0.004 - 0.33	n/c	
541-73-1	dichlorobenzene;1,3-	8120	GC-ECD	0.00119	0.8		0.01 - 0.8	n/c	
541-73-1	dichlorobenzene;1,3-	8270	GC/MS		0.66		0.017 - 0.66	n/c	
106-46-7	dichlorobenzene;1,4-	8010	GC-Hall	0.00024	0.0024		0.0024 - 0.33	4.17E+1	
106-46-7	dichlorobenzene;1,4-	8020	GC-PID	0.0003	0.003		0.003 - 0.33	4.17E+1	
106-46-7	dichlorobenzene;1,4-	8120	GC-ECD	0.00134	0.9		0.33 - 0.9	4.17E+1	
106-46-7	dichlorobenzene;1,4-	8270	GC/MS		0.66		0.01 - 0.66	4.17E+1	
91-94-1	dichlorobenzidine;3,3-	8270	GC/MS		1.3		0.033 - 1.3	2.22E+0	
75-71-8	dichlorodifluoromethane	8010	GC-Hall		0.002		0.001 - 0.02		
75-71-8	dichlorodifluoromethane	8240	GC/MS		0.005		0.001 - 0.05		
75-34-3	dichloroethane;1,1-	8010	GC-Hall	0.00007	0.0007		0.0007 - 0.01		
75-34-3	dichloroethane;1,1-	8240	GC/MS		0.005		0.001 - 0.1		
107-06-2	dichloroethane;1,2-	8010	GC-Hall	0.00003	0.0003		0.0003 - 0.01	1.10E+1	
107-06-2	dichloroethane;1,2-	8240	GC/MS		0.005		0.001 - 0.1	1.10E+1	
156-60-5	dichloroethene;1,2-trans-	8010	GC-Hall	0.0001	0.001		0.001 - 0.05		
156-60-5	dichloroethene;1,2-trans-	8240	GC/MS		0.005		0.001 - 0.01		
75-35-4	dichloroethylene;1,1-	8010	GC-Hall	0.00013	0.001		0.001 - 0.05	1.67E+0	
75-35-4	dichloroethylene;1,1-	8240	GC/MS		0.005		0.001 - 0.01	1.67E+0	
540-59-0	dichloroethylene;1,2-	8010	GC-Hall	0.00013	0.001		0.001 - 0.01	n/c	
540-59-0	dichloroethylene;1,2-	8240	GC/MS		0.005		0.001 - 0.01	n/c	
156-59-2	dichloroethylene;1,2-cis-	8010	GC-Hall	0.00013	0.001		0.001 - 0.01		
156-59-2	dichloroethylene;1,2-cis-	8240	GC/MS		0.005		0.001 - 0.01		
120-83-2	dichlorophenol;2,4-	8040	GC-FID	0.00039	0.26		0.033 - 0.33		
120-83-2	dichlorophenol;2,4-	8270	GC/MS		0.66		0.033 - 1.7		
120-83-2	dichlorophenol;2,4-		GC-ECD	0.00068	0.46				
94-75-7	dichlorophenoxyacetic acid;2,4	8150	GC-ECD	0.0012	0.24		0.04 - 1		
78-87-5	dichloropropane;1,2-	8010	GC-Hall	0.00004	0.0004		0.0004 - 0.1	1.47E+1	
78-87-5	dichloropropane;1,2-	8240	GC/MS		0.005		0.001 - 0.01	1.47E+1	
542-75-6	dichloropropene;1,3- (total)	8010	GC-Hall	0.00034	0.003		0.001 - 0.01	5.56E+0	
542-75-6	dichloropropene;1,3- (total)	8240	GC/MS		0.005		0.001 - 0.01	5.56E+0	
	dichloropropene;1,3-cis-	8010	GC-Hall	0.00034	0.003		0.001 - 0.2	n/c	
	dichloropropene;1,3-cis-	8240	GC/MS		0.005		0.001 - 0.01	n/c	
	dichloropropene;1,3-trans	8240	GC/MS		0.005		0.001 - 0.1	n/c	

AR 034017

n/c = not calculated

TABLE II: SOIL

MDLs, PQLs, and Comparison of Method B Values

Lab PQL Range < Published PQL

CAS	Chemical	Method	Detector	MDL (mg/kg)	PQL (mg/kg)		LABORATORY PQL RANGE (mg/kg)	10e-6 Method B Soil Value (mg/kg)	PQL > Soil Method B (flag = na)
	dichloropropene;1,3-trans-	8010	GC-Hall	0.00034	0.003		0.001 - 0.01	n/c	
60-57-1	dieldrin	8080	GC-ECD	2E-06	0.001		0.001 - 0.01	6.25E-2	
84-66-2	diethyl phthalate	8060	GC-FID	0.031	21				
84-66-2	diethyl phthalate	8270	GC/MS		0.66		0.033 - 0.66		
84-66-2	diethyl phthalate		GC-ECD	0.00049	0.33				
119-90-4	dimethoxybenzidine;3,3'-	8270	GC/MS		1		0.33 - 1	7.14E+1	
131-11-3	dimethyl phthalate	8060	GC-FID	0.019	13				
131-11-3	dimethyl phthalate	8270	GC/MS		0.66		0.01 - 0.66		
131-11-3	dimethyl phthalate		GC-ECD	0.00029	0.19		0.19 - 0.33		
119-93-7	dimethylbenzidine;3,3'-	8270	GC/MS		1		0.33 - 1	1.09E-1	
540-73-8	dimethylhydrazine;1,2-	8270	GC/MS		1		1 - 1.7	7.14E-4	
105-67-9	dimethylphenol;2,4-	8040	GC-FID	0.00032	0.21				
105-67-9	dimethylphenol;2,4-	8270	GC/MS		0.66		0.033 - 0.66		
105-67-9	dimethylphenol;2,4-		GC-ECD	0.00063	0.42				
534-52-1	dinitro-o-cresol;4,6-	8270	GC/MS		3.3		0.033 - 3.3	n/c	
51-28-5	dinitrophenol;2,4-	8040	GC-FID	0.013	8.7		0.067 - 8.7		
51-28-5	dinitrophenol;2,4-	8270	GC/MS		3.3		0.067 - 3.3		
121-14-2	dinitrotoluene;2,4-	8090	GC-ECD	0.00002	0.013		0.013 - 0.33		
121-14-2	dinitrotoluene;2,4-	8270	GC/MS		0.66		0.013 - 0.66		
606-20-2	dinitrotoluene;2,6-	8090	GC-ECD	0.00001	0.007		0.007 - 0.66		
606-20-2	dinitrotoluene;2,6-	8270	GC/MS		0.66		0.013 - 0.66		
88-85-1	dinoseb	8150	GC-ECD	0.00007	0.014		0.0017 - 0.05		
88-85-1	dinoseb	8270	GC/MS						
123-91-1	dioxane;1,4-	8240	GC/MS		0.01		0.01 - 0.5	9.09E+1	
122-66-7	diphenylhydrazine;1,2-	8270	GC/MS		0.66		0.067 - 0.66	1.25E+0	
298-04-4	disulfoton	8140	GC-FPD	0.0002	0.13		0.0017 - 0.13		
298-04-4	disulfoton	8270	GC/MS						
	endosulfan (alpha, beta)	8080	GC-ECD					n/c	
	endosulfan I	8080	GC-ECD	1.4E-05	0.009		0.0017 - 0.1	n/c	
	endosulfan II	8080	GC-ECD	4E-06	0.003		0.0017 - 0.1	n/c	
1031-07-8	endosulfan sulfate	8080	GC-ECD	6.6E-05	0.044		0.0017 - 0.1	n/c	
145-73-3	endothall								
72-20-8	endrin	8080	GC-ECD	6E-06	0.004		0.0017 - 0.1		

AR 034018

n/c = not calculated

TABLE SOIL

MDLs, PQLs, and Comp[illegible]on of Method B Values

Lab PQL Range < Published PQL

CAS	Chemical	Method	Declector	MDL (mg/kg)	PQL (mg/kg)		LABORATORY PQL RANGE (mg/kg)	10e-6 Method B Soil Value (mg/kg)	PQL > Soil Method B (flag=na)
53494-70-5	endrin ketone	8250	GC/MS					n/c	
106-89-8	epichlorohydrin							1.01E+2	
140-88-5	ethyl acrylate	8020	GC-PID		0.1		0.1 - 0.33	2.08E+1	
100-41-4	ethylbenzene	8020	GC-PID	0.0002	0.002		0.001 - 0.04		
100-41-4	ethylbenzene	8240	GC/MS		0.005		0.001 - 0.01		
106-93-4	ethylene dibromide (EDB)	8011	GC/ECD		0.002		0.002 - 0.005	1.18E-2	
107-21-1	ethylene glycol	8240	GC-FID		10		0.33 - 10		
96-45-7	ethylene thiourea	*632	HPLC					2.78E+1	
206-44-0	fluoranthene	8270	GC/MS		0.66		0.005 - 0.66		
206-44-0	fluoranthene	8310	HPLC	0.00021	0.14		0.01 - 0.14		
86-73-7	fluorene	8270	GC/MS		0.66		0.005 - 0.66		
86-73-7	fluorene	8300	HPLC	0.00021	0.14		0.005 - 0.14		
133-07-3	folpet							2.86E+2	
67-45-8	furazolidone							2.63E-1	
531-82-8	furium							2.00E-2	
76-44-8	heptachlor	8080	GC-ECD	3E-06	0.002		0.0017 - 0.1	2.22E-1	
1024-57-3	heptachlor epoxide	8080	GC-ECD	8.3E-05	0.056		0.0017 - 0.1	1.10E-1	
118-74-1	hexachlorobenzene	8120	GC-ECD	0.00005	0.034		0.034 - 0.33	6.25E-1	
118-74-1	hexachlorobenzene	8270	GC/MS		0.66		0.017 - 0.66	6.25E-1	
87-68-3	hexachlorobutadiene	8120	GC-ECD	0.00034	0.23		0.23 - 0.33	1.28E+1	
87-68-3	hexachlorobutadiene	8270	GC/MS		0.66		0.033 - 0.66	1.28E+1	
319-84-6	hexachlorocyclohexane;alpha	8080	GC-ECD	3E-06	0.002		0.0017 - 0.002	1.59E-1	
319-85-7	hexachlorocyclohexane;beta	8080	GC-ECD	6E-06	0.004		0.0017 - 0.004	5.56E-1	
319-86-8	hexachlorocyclohexane;delta	8080	GC-ECD	9E-06	0.006		0.0017 - 0.006		
58-89-9	hexachlorocyclohexane;gamm	8080	GC-ECD	4E-06	0.003		0.0017 - 0.008	7.69E-1	
58-89-9	hexachlorocyclohexane;gamm	8270	GC/MS					7.69E-1	
77-47-4	hexachlorocyclopentadiene	8120	GC-ECD	0.0004	0.27		0.27 - 0.33		
77-47-4	hexachlorocyclopentadiene	8270	GC/MS		0.66		0.033 - 0.66		
67-72-1	hexachloroethane	8120	GC-ECD	0.00003	0.02		0.02 - 0.33	7.14E+1	
67-72-1	hexachloroethane	8270	GC/MS		0.66		0.033 - 0.66	7.14E+1	
591-78-6	hexanone;2-	8240	GC/MS		0.05		0.001 - 0.05	n/c	
302-01-2	hydrazine sulfate	8270	GC/MS		1.3			3.33E-1	
193-39-5	indeno[1,2,3-c,d]pyrene	8270	GC/MS		0.66		0.01 - 0.66		

AR 034019

n/c = not calculated

TABLE II: SOIL

MDLs, PQLs, and Comparison of Method B Values

Lab PQL Range < Published PQL

CAS	Chemical	Method	Dectector	MDL (mg/kg)	PQL (mg/kg)		LABORATORY PQL RANGE (mg/kg)	10e-6 Method B Soil Value (mg/kg)	PQL > Soil Method B (flag=na)
193-39-5	indeno[1,2,3-c,d]pyrene	8310	HPLC	4.3E-05	0.029		0.01 - 0.029		
78-59-1	isophorone	8090	GC-FID	0.0057	3.8		0.33 - 3.8	1.05E+3	
78-59-1	isophorone	8270	GC/MS		0.66		0.033 - 0.66	1.05E+3	
78-59-1	isophorone		GC-ECD	0.0157	11			1.05E+3	
7439-92-1	lead	6010	ICP	2.1	21		1.25 - 8		
7439-92-1	lead	7420	FAA	5	50		0.125 - 0.5		
7439-92-1	lead	7421	GFAA	0.05	0.5		0.125 - 0.5		
121-75-5	malathion	8150	GC-FPD	0.0055	0				
7439-97-6	mercury (inorganic)	7470	AA	0.0002	0.002		0.125 - 0.5		
7439-97-6	mercury (inorganic)	7471	AA	0.0002	0.002		0.1 - 1		
72-43-5	methoxychlor	8080	GC-ECD	0.00018	0.12		0.0017 - 0.12		
72-43-5	methoxychlor	8270	GC/MS						
74-83-9	methyl bromide	9011	GC-ECD		0.01		0.001 - 0.01		
78-93-3	methyl ethyl ketone (MEK)	8015	GC-FID		0.1		0.001 - 0.05		
78-93-3	methyl ethyl ketone (MEK)	8240	GC/MS		0.01		0.001 - 0.05		
108-10-1	methyl isobutyl ketone (MIBK	8015	GC-FID		0.1		0.001 - 0.05		
108-10-1	methyl isobutyl ketone (MIBK	8240	GC/MS		0.01		0.001 - 0.05		
298-00-0	methyl parathion	8140	GC-FPD	0.00003	0.02		0.005 - 0.02		
94-74-6	methyl-4-chlorophenoxy-acetic	8150	GC-ECD	0.249	50		5 - 50		
636-21-5	methylanaline hydrochloride;2-	8270	GC/MS		0.66		0.33 - 0.66	5.56E+0	
	methylanaline;2-	8270	GC/MS		0.66		0.33 - 0.66	n/c	Pb
75-09-2	methylene chloride	8010	GC-Hall				0.001 - 0.01	1.33E+2	
75-09-2	methylene chloride	8240	GC/MS		0.005		0.001 - 0.01	1.33E+2	
	methylnaphthalene;2-	8270	GC/MS		0.66		0.017 - 0.66	n/c	Pb
2385-85-5	mirex	8270	GC/MS					5.56E-1	
91-20-3	naphthalene	8100	GC-FID		0.66		0.05 - 0.66		
91-20-3	naphthalene	8270	GC/MS		0.66		0.005 - 0.66		
91-20-3	naphthalene	8310	HPLC	0.0018	1.2		0.05 - 1.2		
unavailable03	nickel, refinery dust (*)	6010	ICP	0.75	7.5		1 - 4		
7440-02-0	nickel, sol. salts	7520	FAA	2	20				
88-74-4	nitroaniline;2-	8270	GC/MS		3.3		0.1 - 33	n/c	Pb
99-09-2	nitroaniline;3-	8270	GC/MS		3.3		0.1 - 33	n/c	Pb
100-01-6	nitroaniline;4-	8270	GC/MS		1.6		0.1 - 33	n/c	Pb

AR 034020

n/c = not calculated

TABLE SOIL

MDLs, PQLs, and Comparison of Method B Values

Lab PQL Range < Published PQL

CAS	Chemical	Method	Declector	MDL (mg/kg)	PQL (mg/kg)		LABORATORY PQL RANGE (mg/kg)	10e-6 Method B Soil Value (mg/kg)	PQL > Soil Method B (flag=na)
98-95-3	nitrobenzene	8090	GC-FID	0.0036	2.4		1.7 - 2.4		
98-95-3	nitrobenzene	8270	GC/MS		0.66		0.033 - 0.66		
98-95-3	nitrobenzene		GC-ECD	0.0137	9.2		0.33 - 9.2		
59-87-0	nitrofurazone							6.67E-1	
	nitrophenol;2-	8040	GC-FID	0.00045	0.3			n/c	
	nitrophenol;2-	8270	GC/MS		0.66			n/c	
	nitrophenol;2-		GC-ECD	0.00077	0.52		0.033 - 0.52	n/c	
	nitrophenol;4-	8040	GC-FID	0.0028	1.9			n/c	
	nitrophenol;4-	8270	GC/MS		3.3			n/c	
	nitrophenol;4-		GC-ECD	0.0007	0.47			n/c	
924-16-3	nitroso-di-n-butylamine;N-	8070	GC-Hall/GC-NP					1.85E-1	
924-16-3	nitroso-di-n-butylamine;N-	8250	GC/MS		1.3		0.33 - 1.3	1.85E-1	
621-64-7	nitroso-di-n-propylamine;N-	8070	GC-Hall/GC-NP					1.43E-1	
621-64-7	nitroso-di-n-propylamine;N-	8250	GC/MS		1.3		0.033 - 1.3	1.43E-1	
1116-54-7	nitrosodiethanolamine;N-	8070	GC-Hall/GC-NP					3.57E-1	
1116-54-7	nitrosodiethanolamine;N-	8270	GC/MS		1.3		0.33 - 1.3	3.57E-1	
55-18-5	nitrosodiethylamine;N-	8070	GC-Hall/GC-NP					6.67E-3	
55-18-5	nitrosodiethylamine;N-	8270	GC/MS		1.3		0.33 - 1.3	6.67E-3	
62-75-9	nitrosodimethylamine;N- (DMN	8070	GC-Hall/GC-NP	0.00015	0.002			1.96E-2	
62-75-9	nitrosodimethylamine;N- (DMN	8270	GC/MS		1.3		0.33 - 1.3	1.96E-2	
86-30-6	nitrosodiphenylamine;N-	8070	GC-Hall/GC-NP	0.00081	0.008			2.04E+2	
86-30-6	nitrosodiphenylamine;N-	8270	GC/MS		0.66		0.033 - 0.66	2.04E+2	
10595-95-6	nitrosomethylethylamine;N-	8070	GC-Hall/GC-NP					4.55E-2	
10595-95-6	nitrosomethylethylamine;N-	8270	GC/MS		1.3		0.33 - 1.3	4.55E-2	
930-55-2	nitrosopyrrolidine;N-	8070	GC-Hall/GC-NP					4.76E-1	
930-55-2	nitrosopyrrolidine;N-	8270	GC/MS		1.3		0.33 - 1.3	4.76E-1	
56-38-2	parathion	8141	GC		0.06		0.0033 - 0.06		
608-93-5	pentachlorobenzene	8270	GC/MS						
87-86-5	pentachlorophenol (PCP)	8040	GC-FID	0.0074	5		0.067 - 5	8.33E+0	
87-86-5	pentachlorophenol (PCP)	8270	GC/MS		3.3			8.33E+0	
87-86-5	pentachlorophenol (PCP)		GC-ECD	0.00059	0.4			8.33E+0	
85-01-8	phenanthrene	8270	GC/MS		0.66		0.005 - 0.66	n/c	
85-01-8	phenanthrene	8310	HPLC	0.00064	0.43		0.0083 - 0.43	n/c	

n/c = not calculated

TABLE II: SOIL

MDLs, PQLs, and Comparison of Method B Values

Lab PQL Range < Published PQL

CAS	Chemical	Method	Detector	MDL (mg/kg)	PQL (mg/kg)		LABORATORY PQL RANGE (mg/kg)	10e-6 Method B Soil Value (mg/kg)	PQL > Soil Method B (flag=na)
108-95-2	phenol	8040	GC-FID	0.00014	0.094				
108-95-2	phenol	8270	GC/MS		0.66		0.1 - 1.5		
108-95-2	phenol		GC-ECD	0.0022	1.5				
93-65-2	propionic acid;2(2-methyl)-4-cl	8150	GC-ECD	0.192	38		5 - 38		
129-00-0	pyrene	8270	GC/MS		0.66		0.005 - 0.66		
129-00-0	pyrene	8310	HPLC	0.00027	0.18		0.01 - 0.18		
7782-49-2	selenium	6010	ICP	0.075	0.75		2.5 - 20		
7782-49-2	selenium	7740	GFAA	0.5	5		0.125 - 0.5		
7782-49-2	selenium	7741	GHAA	0.1	1				
7440-22-4	silver	6010		0.35	3.5				
7440-22-4	silver	7740		0.5	5		0.25 - 1		
7440-22-4	silver	7741		0.01	0.1		0.05 - 0.25		
122-34-9	simazine	619	GC/NP		0.33		0.033 - 0.33	8.33E+0	
100-42-5	styrene	8240	GC/MS		0.005		0.001 - 0.01	3.33E+1	
1746-01-6	TCDD;2,3,7,8- (dioxin)	8290	GC/MS	3E-07	0.000003			6.67E-6	
	TCDF;2,3,7,8-	8290	GC/MS	3E-07	0.000003			n/c	
95-94-3	tetrachlorobenzene;1,2,4,5-	8270	GC/MS		0.33				
79-34-5	tetrachloroethane;1,1,2,2-	8010	GC-Hall	0.00003	0.0003		0.0003 - 0.1	5.00E+0	
79-34-5	tetrachloroethane;1,1,2,2-	8240	GC/MS		0.005		0.001 - 0.01	5.00E+0	
127-18-4	tetrachloroethylene (PCE)	8010	GC-Hall	0.00003	0.0003		0.0003 - 0.05	1.96E+1	
5216-25-1	tetrachlorotoluene;P,a,a,a-							5.00E-2	
961-11-5	tetrachlorvinphos	8141	GC/FPD		0.4		0.005 - 0.4	4.17E+1	
108-88-3	toluene	8020	GC-PID	0.0002	0.002		0.001 - 0.025		
108-88-3	toluene	8240	GC/MS		0.005		0.001 - 0.01		
95-80-7	toluene-2,4-diamine							3.13E-1	
95-53-4	toluidine;o-	8270	GC/MS		0.33			4.17E+0	
8001-35-2	toxaphene	8080	GC-ECD	0.00024	0.16		0.017 - 1	9.09E-1	
93-72-1	TP;2,4,5- (Silvex)	8150	GC-ECD	0.00017	0.034		0.01 - 0.1		
120-82-1	trichlorobenzene;1,2,4-	8120	GC-ECD	0.00005	0.034		0.034 - 0.33		
120-82-1	trichlorobenzene;1,2,4-	8270	GC/MS		0.66		0.017 - 0.66		
71-55-6	trichloroethane;1,1,1-	8010	GC-Hall	0.00003	0.0003		0.0003 - 0.05		
71-55-6	trichloroethane;1,1,1-	8240	GC/MS		0.005		0.001 - 0.01		
79-00-5	trichloroethane;1,1,2-	8010	GC-Hall	0.00002	0.0002		0.0002 - 0.1	1.75E+1	

AR 034022

n/c = not calculated

TABLE SOIL

MDLs, PQLs, and Compa...on of Method B Values

Lab PQL Range < Published PQL

CAS	Chemical	Method	Dectector	MDL (mg/kg)	PQL (mg/kg)		LABORATORY PQL RANGE (mg/kg)	10e-6 Method B Soil Value (mg/kg)	PQL > Soil Method B (flag=na)
79-00-5	trichloroethane;1,1,2-	8240	GC/MS		0.005		0.001 - 0.01	1.75E+1	
79-01-6	trichloroethene (TCE)	8010	GC-Hall	0.00012	0.001		0.001 - 0.01	9.09E+1	
75-69-4	trichlorofluoromethane	8010	GC-Hall		0.002		0.001 - 0.025		
75-69-4	trichlorofluoromethane	8240	GC/MS		0.005		0.001 - 0.01		
95-95-4	trichlorophenol;2,4,5-	8270	GC/MS		0.66		0.033 - 1.7		
88-06-2	trichlorophenol;2,4,6-	8040	GC-FID	0.00064	0.43		0.033 - 1.7	9.09E+1	
88-06-2	trichlorophenol;2,4,6-	8270	GC/MS		0.66			9.09E+1	
88-06-2	trichlorophenol;2,4,6-		GC-ECD	0.00058	0.39			9.09E+1	
93-76-5	trichlorophenoxyacetic acid;2,4	8150	GC-ECD	0.0002	0.04		0.01 - 0.2		
512-56-1	trimethyl phosphate	8270	GC/MS					2.70E+1	
108-05-4	vinyl acetate	8240	GC/MS		0.05		0.001 - 0.05		
75-01-4	vinyl chloride	8010	GC-Hall	0.00018	0.002		1	5.26E-1	
75-01-4	vinyl chloride	8240	GC/MS		0.02		0.001 - 0.01	5.26E-1	
1330-20-7	xylene (total)	8020	GC-PID		0.002		0.001 - 0.04		
1330-20-7	xylene (total)	8240	GC/MS		0.005		0.001 - 0.01		
108-38-3	xylene;m-	8020	GC-PID		0.002		0.001 - 0.01		
108-38-3	xylene;m-	8240	GC/MS	0.00013	0.005		0.001 - 0.01		
95-47-6	xylene;o-	8020	GC-PID		0.002		0.001 - 0.01		
95-47-6	xylene;o-	8240	GC/MS	0.00013	0.005		0.001 - 0.01		
106-42-3	xylene;p-	8020	GC-PID		0.002		0.001 - 0.01	n/c	
106-42-3	xylene;p-	8240	GC/MS	0.00013	0.005		0.001 - 0.01	n/c	
7440-66-6	zinc	6010	ICP	0.1	1		0.5 - 2		
7440-66-6	zinc	7951	AA	0.003	0.03				

AR 034023

n/c = not calculated

APPENDIX

MEANING OF QUANTITATION LIMITS

This guidance is Part IV of a four parts. They are:

Part I:	*Implementation Memo No. 3--PQLs as Cleanup Standards*
Part II:	*Guidance For The Use of Tables*
Part III:	*MDL, PQL, and Comparisons Tables*
Part IV:	*Appendix--Meaning of Quantitation Limits (this document)*

In Part II, Guidance For The Use of Tables, an overview was given of the need for a site manager to have information on the lowest levels which can be routinely quantified and reported by a laboratory. These lowest levels are known as the "practical quantitation limits" (PQLs). The "method detection limit" (MDL) is mostly used by the laboratory analyst and not usually reported but can provide useful information to the site manager.

This document discusses the meaning of these two terms, PQL and MDL.

The MDL is defined by the EPA in Appendix B of 40 CFR 136 as "the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero." The Appendix B includes detailed procedures for determining the MDL either in lab reagent water or in the sample matrix.

Detection should be based on the variability of the response of the measurement system (such as a gas chromatograph) to a sample with zero concentration of the analyte (blank response). Detection limits should account for the probabilities of false positives and false negatives. The MDL is based on the variability of the response of the measurement system to a low level standard or spiked sample and accounts only for false positives.

Concentrations of chemicals that exceed the MDL but do not exceed the PQL are often reported as estimates.

There is no single accepted method for defining or determining the PQL. Some documents, including some by EPA, refer to "detection limits" without explanation of how they were derived. Many PQLs listed in federal regulations are based on consensus rather than rigorous technical assessments. The following is an excerpt from guidance for statistical regulations (U.S. EPA 1988):

> *"The PQLs listed were EPA's best estimate of the practical sensitivity of the applicable method for RCRA ground water monitoring purposes. However, some of the PQLs may be unattainable because they are based on general estimates for the specific substance. Furthermore, due to site-specific factors, these limits may not be reached. For these reasons, the agency feels that the PQLs listed in Appendix IX are not appropriate for establishing a national baseline value for each constituent for determining whether a release to ground water has occurred. Instead, the PQLs are viewed as target levels that chemical laboratories should try to achieve in their analysis of ground water."*

Soils usually present even more difficulty for analysis than groundwater because they have a more complex matrix to separate the contaminants from, often there are more contaminants present, and usually a smaller analytical sample is used. There is also often a wider range of contaminant concentrations to deal with. For these reasons, PQLs for soils are even more subject to variation than for ground water.

The Model Toxics Control Act (MTCA) defines Practical Quantitation Limits:

> *"The lowest concentration that can be reliable measured within specified limits of precision, accuracy, representativeness, completeness, and comparability during routine laboratory operating condition, using department approved methods"* (WAC 173-340-200 Definitions).

Or more simply, the minimum level of a substance for which the question of how much of that substance is present can be answered with a high degree of certainty. PQLs are often determined by evaluating performance results of inter-laboratories studies where artificial samples are analyzed to test each laboratory's ability to accurately measure a substance using a specific method.

Practical quantitation limits are expected to provide a lower bound on the technical feasibility of cleanup levels. Important factors that influence the quantitation limits include sample size, analytical method, instrument limits, and the analytical uncertainties in the sample matrix. Unfortunately, inter-laboratory studies cannot duplicate every matrix, especially those most difficult to analyze.

Ecology has put a threshold on the PQL in WAC 173-340-707 (2) Analytical considerations. The PQL must be the more stringent of the following conditions:

(a) The PQL may be no greater than ten times the method detection limit; or

(b) The PQL for a particular hazardous substance, medium, and analytical procedure may be no greater than the PQL established by the United States Environmental Protection Agency and used to establish requirements in 40 CFR 136, 40 CFR 141 through 143, or 40 CFR 260 through 270.

PQLs As Cleanup Levels

- Method A may use PQLs as the compliance levels. See WAC 173- 340-704 (2)(c) Use of method A.

- Methods B or C may use PQLs as compliance levels for substances when the risk based cleanup standard is below the PQL. See WAC 173-340-700 (6) Measuring compliance; WAC 173-340-707 (2) Analytical considerations; and Part I, Technical Information Memo No. 3--PQLs As Cleanup Standards for further discussion.

Survey Of Analytical Laboratories

A survey of analytical laboratories was conducted by the Department of Ecology in March of 1992. The purpose of the survey was to assess the performance capabilities of analytical laboratories in support of investigations under MTCA.

The survey data was used, in part, to develop the tables in Part III: MDL, PQL, and Comparisons Tables.

The purpose of the survey was to identify MDLs and PQLs that could be achieved by commercial laboratories on a regular basis. Laboratories have not been identified because the individual responses were considered confidential. Ecology does not recommend any specific laboratory. Someone requesting the services of a laboratory should ascertain the qualifications and ability of the laboratory to perform the desired work. These tables should help provide a comparison for MDLs or PQLs the laboratory may provide.

pqlappen.sr