SUBSTANTIVE POLICY STATEMENT

This Substantive Policy statement is advisory only. A substantive policy statement does not include internal procedural documents that only affect the internal procedures of the agency and does not impose additional requirements or penalties on regulated partied or include confidential information or rules made in accordance with the Arizona Administrative Procedure Act. If you believe that this substantive policy statement does impose additional requirements or penalties on regulated parties, you may petition the agency under Arizona Revised Statutes section 41-1033 for a review of the statement.

Arizona Department of Environmental Quality (ADEQ)

Inorganic, Volatile Organic, and Synthetic Organic Chemical Monitoring Waiver Program

January 1996

DATE: January 25, 1996

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The Arizona Department of Environmental Quality shall preserve, protect and enhance the environment and public health and shall be a leader in the development of public policy to maintain and improve the quality of Arizona's air, land and water resources.

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TABLE 1. SUMMARY OF PHASE II & V INITIAL MONITORING REQUIREMENTS, SAMPLING LOCATIONS, AND WAIVER PROVISIONS.

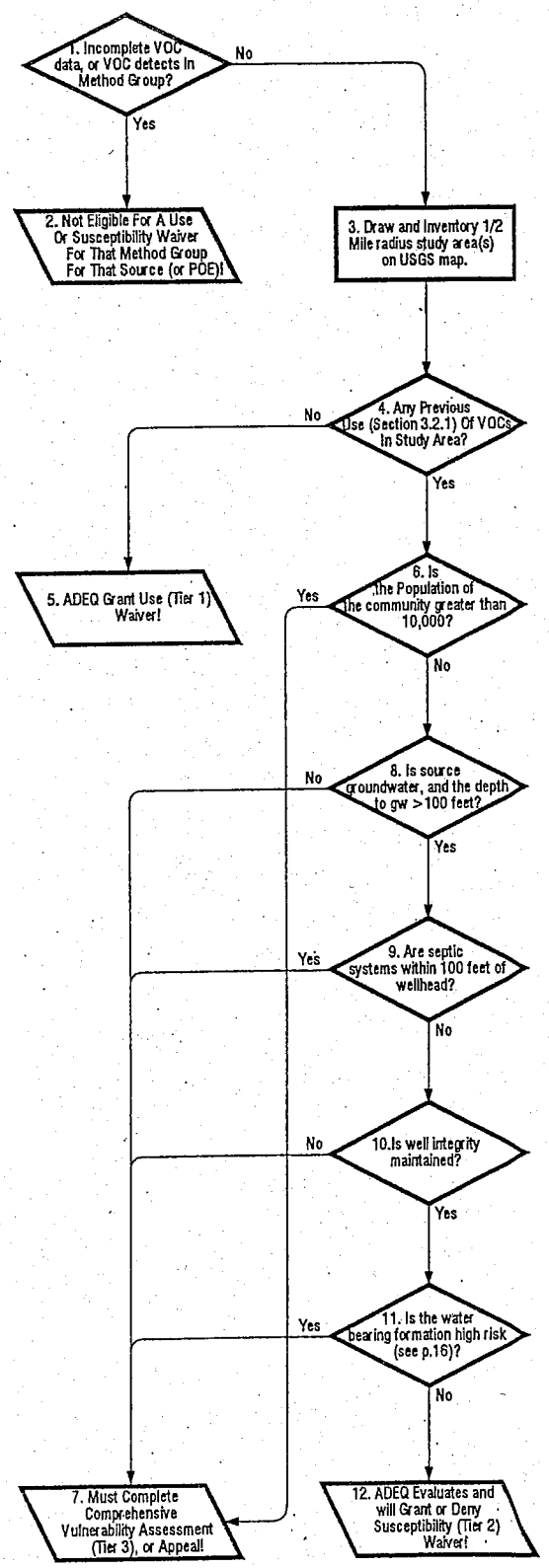
CONTAMINANT	INITIAL MONITORING REQUIREMENTS		REDUCED MONITORING REQUIREMENTS	WAIVER PROVISIONS
	SURFACE WATER	GROUNDWATER		
Asbestos	once every 9 years	once every 9 years	once every 9 years	yes, 9 year waiver(s): 1) source water waiver and 2) distribution system at tap. No waiver for initial asbestos monitoring.
Inorganic Chemicals*	once per year	once every 3 years	once every 3 years	yes, 9 year waiver, need 3 sets of sample results with no MCL exceedances, including one set of results after 1/90.
Nitrate	Quarterly	Annually	Annually, but ADEQ may reduce surface water monitoring frequency from quarterly to annual if 4 consecutive quarters are < 5 mg/l	no, but ADEQ may reduce surface water monitoring frequency from quarterly to annual if 4 consecutive quarters are < 5 mg/l
Nitrite	one time; additional monitoring at ADEQ discretion	one time; additional monitoring at ADEQ discretion	once every 9 years	no
Synthetic Organic Chemicals	4 consecutive Quarterly samples	4 consecutive Quarterly samples	systems serving ≤ to 3300 persons, one sample every 3 years: systems serving > 3300 persons, two non-consecutive quarterly samples in one year, every 3 years	yes, 3 year waiver based on use or susceptibility. Systems must update their waiver application every three years. No sampling required during waiver effective period.
Volatile Organic Chemicals*	4 consecutive Quarterly samples	4 consecutive Quarterly samples 1 annual sample for unregulated VOCs	Groundwater systems: 3 years annual sampling: if no detections then one sample every 3 years Surface water systems: annually	yes, 6 year waiver for GW; 3 year for SW; based on use or susceptibility. Systems must update their waiver application every three years and take one sample during the waiver effective period (one sample every 6 years).

* Listing of individual contaminants included in these groups can be found in Appendix A.

TABLE 1A. SUMMARY TABLE: OTHER GENERAL MONITORING REQUIREMENTS.

CONTAMINANT	SURFACE WATER	GROUNDWATER	SAMPLING LOCATION	WAIVER PROVISIONS
Total Coliform Bacteria	one set per month	one set per month	according to site sampling plan	no
Radiochemicals	every 4 years	every 4 years	At the source	no
Turbidity	continuous recording or grab sample every 4 hours	not required unless under the influence of SW	after water leaves treatment plant	no, but ADEQ may reduce to once per day for systems serving < 500 people
Total Trihalomethanes (TTHM) for systems with populations greater than 10,000	4 samples per quarter for each treatment plant	4 samples per quarter for each treatment plant	within distribution system	no, but ADEQ may reduce to one sample per treatment plant
Chlorine residual	continuous recording or every 4 hours	not required unless under the influence of SW	each entry point to distribution system after treatment	no
Lead and Copper	Per Lead and Copper Rule	Per Lead and Copper Rule	At interior taps, per Lead and Copper Rule	no

FIG. 1: VOC WAIVER FLOWCHART (for each source)



Explanation of Fig. 1, VOC Waiver Flowchart.

This flowchart shows the process a system takes in applying for drinking water VOC monitoring waivers.

1. Incomplete VOC data, or VOC detects in Method Group? In order to apply for any VOC waiver, a system must have completed initial monitoring for each point of entry (grandfathered data or a Chafee Lautenberg sample, can satisfy initial monitoring). All VOC initial monitoring results must be non-detect. Detects of disinfection byproducts (bromodichloromethane, bromoform, chloroform, chlorodibromomethane) however, do not disqualify a system from applying for a waiver. If detects are the result of a lab contaminant, please provide documentation to ADEQ.

> *2. **Not Eligible for a Use or Susceptibility Waiver for that Method Group for that Source (or POE).** If a POE, or the source(s) comprising a POE, do not have complete data or has detects as describe above, that POE is not eligible for a waiver.*
> Reminder: Waivers are granted on a per POE basis, based on the "worst case" well.

3. For each eligible source, draw and inventory 1/2 Mile waiver study area(s) on USGS map. The study area, and each source must be identified on a 7.5 or 15 minute USGS map. An inventory of any type of facility or operation related to VOC use, as specified on pages 11 and 12, must be indicated by number on the map (see Figure 3).

4. Any previous Use (Section 3.2.1) of VOCs in Study Area? If none of the facilities or operation indicated in Step 3. above are located in the study area, then ADEQ will grant a use waiver for the VOCs, on a per POE basis.

> *5. ADEQ Grant Use (Tier 1) Waiver.*

Only if there has been use of VOCs in the study area, as defined in step 4, does a system have to further evaluate their POE by answering a series of questions:

6. Is the population of the community where the source is located greater than 10,000? (If answer is yes, go to Step 7.) Systems with water sources in communities with a population of greater than 10,000 persons must complete a Comprehensive vulnerability assessment for those sources. Sources in locations of greater than 10,000 people may be subject to the cumulative impact of VOCs from home use.

> *7. **Must Complete a Comprehensive Vulnerability Assessment or Appeal.** Contact ADEQ for applications for the comprehensive vulnerability assessment. Instead of completing a comprehensive vulnerability assessment, a system may appeal to ADEQ any particular circumstances associated with a particular study area that make the screening criteria in Flowchart Steps 6, 8, 9, 10, or 11 not applicable to that study area in assessing susceptibility.*

8. Is the source groundwater, and the depth to groundwater greater than 100 feet? (If answer is no, go to Step 7.) Surface water sources, or sources with a depth to groundwater of 100 feet or less, must complete a Comprehensive vulnerability assessment.

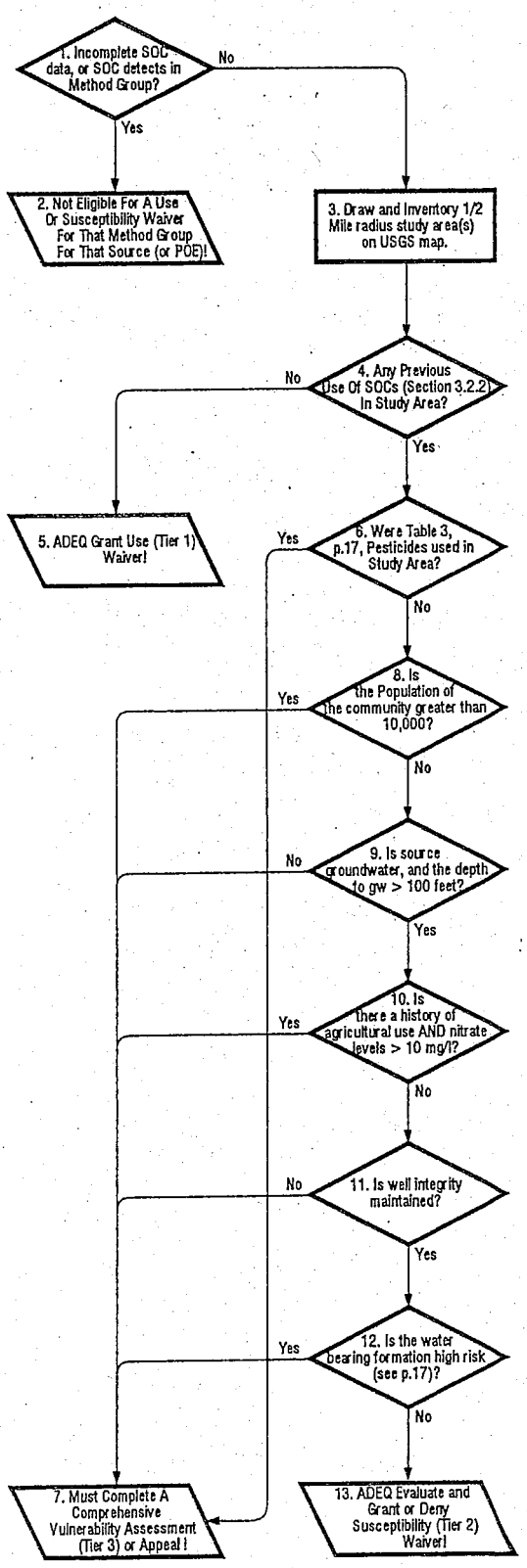
9. Are septic systems within 100 feet of wellhead? (If answer is yes, go to step 7.) A Comprehensive vulnerability assessment must be completed for all sources that have septic systems within 100 feet of the well.

10. Is well integrity maintained? (If answer is no, go to step 7.) Are there any physical deficiencies with the well, either noted during the last sanitary survey and not corrected or otherwise?

11. Is the water bearing formation a high risk aquifer, as indicated on p.16?
(If answer is yes, go to Step 7.) Use your well driller's log or other available resources to determine the water bearing formation. If it is listed on page 16 as a high risk formation, a Comprehensive Vulnerability Assessment must be completed for this source.

12. ADEQ Evaluates and will Grant or Deny Susceptibility (Tier 2) waiver. *ADEQ will notify systems in writing when a waiver is granted or denied.*

FIG. 2: SOC WAIVER FLOWCHART (for each source)



Explanation of Fig. 2, SOC Waiver Flowchart.

This flowchart shows the process a system takes in applying for drinking water SOC monitoring waivers.

1. Incomplete SOC data, or SOC detects in Method Group? In order to apply for any SOC waiver, a system must have completed initial monitoring for each point of entry (grandfathered data, a Chafee Lautenberg sample, unregulated contaminant waivers, and dioxin and glyphosate waivers can satisfy initial monitoring, as applicable). All SOC initial monitoring results must be non-detect.

> ***2. Not Eligible for a Use or Susceptibility Waiver for that Method Group for that Source (or POE).*** *If a POE, or the source(s) comprising a POE, do not have complete data or has detects as describe above, that POE is not eligible for a waiver.*
> Reminder: Waivers are granted on a per POE basis, based on the "worst case" well.

3. Draw and Inventory 1/2 Mile waiver study area(s) on USGS map. The study area, and each source must be identified on a 7.5 or 15 minute USGS map. An inventory of agricultural activities, land use activities, and SOC use, as indicated on pages 13-17 of the waiver package, must occur with the number corresponding to the activity indicated on the map (see Figure 3.).

4. Any previous Use (see Section 3.2.2) of SOCs in Study Area? If no entries were made on the map in response to the inventory of uses, then ADEQ will grant a use waiver for the SOCs, on a per POE basis.

> ***5. ADEQ Grant Use (Tier 1) Waiver.***

<u>Only if there has been use of SOCs in the study area, as defined above, does a system have to further evaluate their POE by answering a series of questions:</u>

6. Were Table 3, pg. 17, mobile and persistent pesticides used in Study Area? (If answer is yes, go to Step 7.) Table 3. is a subset of the most persistent and soluble pesticides. If any of these pesticides were used in the Study Area, a comprehensive vulnerability assessment must be completed. See Appendix F. for a list of common sources of these contaminants.

> ***7. Must Complete a Comprehensive Vulnerability Assessment or Appeal.*** *Contact ADEQ for applications for the comprehensive vulnerability assessment. In lieu of completing a comprehensive vulnerability assessment, a system may appeal to ADEQ any particular circumstances associated with a particular study area that make the screening criterion in Flowchart Steps 6, 8, 9, 10, 11, or 12 not applicable to that study area in assessing vulnerability.*

8. Is the population of the community greater than 10,000? (If answer is yes, go to Step 7.) Systems with water sources in communities with a population of greater than 10,000 persons must complete a Comprehensive vulnerability assessment for those sources.

9. Is the source groundwater, and the depth to groundwater greater than 100 feet? (If the answer is no, go to Step 7.) Systems with surface water sources, or sources with a depth to groundwater of 100 feet or less, must complete a Comprehensive vulnerability assessment for those sources.

10. Is there a history of agricultural use AND nitrate levels greater than 10 mg/l? (If answer is yes, go to Step 7.) If a study area has both historical agricultural use, and its associated source has nitrate levels greater than 10 mg/l, a comprehensive vulnerability assessment must be completed.

11. Is well integrity maintained? (If answer is no, go to Step 7.) Are there any physical deficiencies with the well, either noted during the last sanitary survey and not corrected or otherwise? If well integrity is not maintained, a comprehensive vulnerability assessment must be completed.

12. Is the water bearing formation a high risk aquifer, as indicated on p. 17?
(If answer is yes, go to Step 7.) Use your well driller's log or other available resources to determine the water bearing formation. If it is listed on page 17 as a high risk formation, a Comprehensive Vulnerability Assessment must be completed for this source.

*13. **ADEQ Evaluates and will Grant or Deny Susceptibility (Tier 2) waiver.** ADEQ will notify systems in writing when a waiver is granted or denied.*

1.0 INTRODUCTION

The Safe Drinking Water Act as amended in 1986 requires certain regulated public drinking water systems to monitor for inorganic chemicals (IOCs), volatile organic chemicals (VOCs), and synthetic organic chemicals (SOCs). The initial monitoring requirements for these chemicals are listed in Table 1. Table 1.A lists contaminants for which waivers are unavailable. These tables serve only as a summary of the monitoring requirements. Systems should always refer to A.A.C., Chapter 4, Articles 1-5, for complete State drinking water rules.

Provisions to the State drinking water rules allow ADEQ to develop a monitoring waiver program designed to set monitoring frequencies based on a systems vulnerability to contamination. ADEQ's waiver program has been developed to allow systems with little or no vulnerability to certain sources of contamination to reduce or eliminate their monitoring and transfer these savings to facility upgrades or improvements. The monitoring waiver program is also intended to increase a system's understanding of where their water comes from, how it can become contaminated, and what measures can be taken to protect it.

All community and non-transient non-community water systems are eligible to apply for these monitoring waivers. Waivers apply to the monitoring requirements for volatile organic, synthetic organic, and certain inorganic chemicals only. **WAIVERS WILL BE ISSUED ON A POINT OF ENTRY BASIS, BASED ON WORST CASE SOURCE SPECIFIC DATA. If a point of entry is comprised of more than one source, and one of the sources is not granted a waiver, the POE to which that source is associated will be denied the waiver.**

The flowcharts (Figure 1 and Figure 2) provide an overview of the VOC and SOC waiver processes. As the flowcharts show, ADEQ's waiver program consists of three tiers. The first tier is a use assessment, the second tier is a screening susceptibility assessment, and the third tier is a comprehensive vulnerability assessment. ADEQ anticipates that a large percentage of public drinking water systems will qualify for monitoring waivers under the criteria for the first or second tiers of the waiver process. This will prevent systems from having to complete a comprehensive vulnerability assessment where one is not warranted.

This document describes the types of monitoring waivers available and the process for applying. Systems that are denied waivers or do not apply for waivers must sample at the required monitoring frequencies as specified in the State drinking water rules.

2.0 OVERVIEW OF WAIVER PROGRAM

2.1 MONITORING AND WAIVER SCHEDULE

ADEQ's drinking water rules established nine-year compliance "cycles". The first compliance cycle began on January 1, 1993. A nine-year compliance cycle contains three three-year compliance periods. The first compliance period extends from 1993 to 1995, the second from 1996 to 1998, and the third from 1999 to 2001. Each public water system was assigned an initial monitoring year within the first compliance period. The time in which a monitoring waiver takes effect will be based on your system's assigned initial monitoring year (i.e. 1993, 1994, or 1995).

The waivers should be filled out and submitted according to the schedule in Table 2.

Table 2. Schedule for submitting waiver applications during the second compliance period based on system's assigned initial monitoring year.

ASSIGNED INITIAL PHASE II MONITORING YEAR	ADEQ MAILS WAIVER APPLICATION	SYSTEM COMPLETES AND SENDS APPLICATION TO ADEQ[1]	ADEQ MAKES DECISION ON GRANTING OR DENYING[2] WAIVERS	SYSTEM WHICH RECEIVES VOC WAIVER TAKES ONE VOC SAMPLE/POE[3]	SYSTEM WHICH RECEIVES WAIVERS SUBMITS NEXT VOC/SOC APPLICATIONS[4]
1993	January 1996	April 1, 1996	May 1, 1996	1996	1999
1994	July 1996	September 1, 1996	November 1, 1996	1997	2000
1995	July 1997	September 1, 1997	November 1, 1997	1998	2001

1. Extensions to this deadline must be requested in writing.
2. See Appendix D for appeal procedure.
3. One VOC sample per POE is required to update a VOC waiver, i.e., one sample per 6 years. No samples are required to renew the SOC waiver.
4. This schedule helps synchronize the VOC and SOC application processes. VOC waiver applications must be updated after 3 years. SOC waivers must be renewed every 3 years.

2.2 CONTAMINANTS FOR WHICH WAIVERS ARE NOT AVAILABLE

Waivers are not allowed for total and fecal coliform bacteria, nitrate, nitrite, turbidity, free chlorine residual, lead and copper, total trihalomethanes, and radiochemicals. All systems are required to monitor for these contaminants at the frequency specified in the drinking water rules.

2.3 TYPES OF WAIVERS AVAILABLE

2.3.1 USE WAIVER

These waivers apply to VOC and SOC only and are based on the use of the chemical

within the waiver study area. To obtain a use waiver a system will need to delineate the study area on a map, as described in section 2.5. This waiver will evaluate VOCs as a contaminant group. SOCs will be evaluated as sub groups which are determined by the analytical method. The use waiver requires completion of the Part 1 General Application (3.1), (matrix, map, and certification) in addition to the Part 2 use waiver applications (see Section 3.2.1 and 3.2.2)

2.3.2 SUSCEPTIBILITY WAIVER

Susceptibility waivers apply to VOCs and SOCs only and are based on the degree of susceptibility a system's source and/or the aquifer from which the source draws water has to contamination. Please note that groundwater sources receiving use waivers do not need to apply for susceptibility waivers. This waiver requires completion of the Part 1 General Application (matrix and map) in addition to the susceptibility application (see Section 3.3.1 and 3.3.2). To obtain a susceptibility waiver, a system will need to delineate the study area on a map, as described in section 2.5.

Characteristics that will be evaluated by ADEQ in determining a system's eligibility for a VOC susceptibility waiver will include but are not limited to: previous analytical results, environmental persistence and mobility of the compound, proximity of the water system to potential sources of contamination, and number of persons served by the system. VOCs will be evaluated as a contaminant group.

ADEQ will evaluate the following in determining a system's eligibility for an SOC susceptibility waiver: previous analytical results, previous vulnerability assessments, proximity of the system to potential sources of contamination, environmental persistence and mobility of the compound, number of persons served by the system, methods in place to control contaminant sources, potential worst case contaminant release in the study area, and source construction including depth to groundwater, soil type, and hydrogeologic setting. SOCs will be evaluated as sub groups which are determined by the analytical method.

2.3.3 WAIVER BY RULE

Waivers by Rule apply only to (IOCs), except those described in section 2.2. These waivers are based on previous monitoring results of three complete sets of inorganic data, with one set of data being taken after January 1, 1990. This waiver will be granted on a contaminant group basis and only if the analytical results for all three sets of data are at or below 75% of the Maximum Contaminant Level (MCL). This waiver requires systems to submit the IOC matrix and analytical data.

Waivers by Rule are also allowed for two contaminants which have special monitoring requirements, cyanide and sulfate. See Section 3.4.1 and 3.4.2 for application requirements.

2.3.4 TREATMENT TECHNIQUE WAIVER

This waiver applies to one contaminant only, glyphosate. It is available for systems that continuously chlorinate sources or POEs. See Section 3.5.1.

2.4 WAIVER DURATION AND SAMPLING REQUIREMENTS

The duration of monitoring waivers, and sampling requirements as a condition of the waiver, vary dependent on the contaminant group as follows:

VOC - The waiver duration is a maximum of 6 years. Systems are required to take one sample during the waiver effective period.

SOC - The waiver duration is a maximum of 3 years. Systems are not required to sample during the waiver effective period.

IOC - Except for the contaminants in section 2.2, the waiver duration is a maximum of 9 years. Systems are not required to sample during the waiver effective period.

2.5 WAIVER STUDY AREAS

2.5.1 VOC/SOC Groundwater Study Area

The waiver study area for groundwater sources for use waiver (tier 1) or screening susceptibility assessment (tier 2) waivers is a circular radius of ½ mile around each groundwater source of the system. This study area has been determined for the water systems by ADEQ and is designed to consider the diversity of land uses which could adversely impact the groundwater drawn by each source.

2.5.2 Surface Water/Groundwater Under the Direct Influence of Surface Water Waiver Study Area

All surface water sources, and groundwater sources determined by the State to be under the influence of surface water, must have a comprehensive (tier 3) vulnerability assessment performed. Certain groundwater sources are also required to be evaluated under the comprehensive vulnerability assessment (see the flowcharts in Figure 1 and 2). The Tier 3 waiver application is not included in this packet; please contact ADEQ for this application.

2.6 SYSTEMS WITH STATE RECOGNIZED WELLHEAD PROTECTION PROGRAMS

Systems with a Wellhead Protection Program which is recognized by ADEQ can use the delineated Wellhead Protection Area (WHPA) in lieu of the study area specified in this section. In many cases a comprehensive Wellhead Protection Program will substitute for the waiver application process. Contact your compliance officer if a Wellhead Protection Program is in place for your system.

3.0 APPLYING FOR WAIVERS - PROCEDURES

To apply for any waiver, systems must complete the appropriate applications and mail them to ADEQ. The applications must be postmarked, or hand delivered no later than **April 1, 1996. Extensions to this deadline must be requested in writing.**

The application forms on the following pages are intended to "walk" water system owners through the process of providing ADEQ with the information needed to make a decision on the system's eligibility for waivers.

ADEQ Compliance Officers are available to answer any questions you may have on completing the waiver applications. **If you have any questions, please contact your ADEQ Compliance Officer at 1-800-234-5677, extension 4644 or directly at (602) 207-4644. Eligibility for waivers cannot be determined with incomplete applications.**

3.1

Part 1: GENERAL APPLICATION: Submit matrix and map(s).

Step 1. Identify Water Source(s). ADEQ has listed the source(s) and associated Point of Entry (POE) numbers for your system from the Department's database on the attached matrix. Confirm this information and where information is incorrect, make necessary changes on this form and submit supporting documentation.

Step 2. ADEQ has evaluated all source(s) and points of entry for your system to determine eligibility for waivers. **Source(s) and/or points of entry are not eligible for waivers if one or more of the following conditions exist: initial monitoring (see table 1) was not completed, a nitrate sample was not taken during the last calendar year, or an SOC or VOC was detected.** Systems are encouraged to confirm this information and where information is incorrect, make necessary changes on the matrix and submit supporting documentation.

Step 3. Identify waiver study area(s) as follows:

Groundwater Sources

A. Obtain United States Geologic Survey (USGS) map(s) on which you can identify the location of each groundwater well. The USGS map must be either a 7.5 minute or 15 minute scale and must show topography. Photo copies are acceptable, however, they must show section lines and be a one to one copy (NO ENLARGEMENTS OR REDUCTIONS). Sketches are not acceptable. Aerial photographs may also be used in addition to the topographic maps, but may not be submitted in lieu of the topographic maps.

USGS maps may be found at your local library, or may be purchased at stores specializing in maps. (You may wish to check the yellow pages in your telephone book under "Maps-Dealers"). USGS quad maps may also be obtained from the U.S. Geological Survey at the following address and telephone number (there is a charge for these maps, and for shipping):

U. S. Geological Survey
Earth Sciences Information Center
345 Middlefield Road, Mail Stop 532
Menlo Park, CA 94025
(415) 329-4390

B. On the map(s), locate and label each groundwater well source with the Department of Water Resources number, as listed in Step 1 above (see figure 3).

C. VOC/SOC study area radius. Each well will have its own waiver study area, which will be a ½ mile radius circular area centered from the wellhead. Please mark this area on the map(s) (see figure 3).

D. Attach map(s) to the back of the matrix.

Surface Water Sources

Systems using surface water sources, including canals, are required to complete the Tier 3 comprehensive vulnerability assessment for those sources and associated POEs.

3.2.1

USE WAIVER APPLICATION
PART 2: Volatile Organic Chemicals

Step 1. For each facility or operation identified below that is within the ½ mile waiver study area mark the approximate location on the map and label it with the corresponding number (see figure 3). Also, include the corresponding numbers under the appropriate category on the matrix. This information must be field verified by the system. If the activity never occurred, or the water system owner could find no evidence that the activity occurred in the waiver study area, please continue with Step 2.

	Type of Facility or Operation
1	Buried or aboveground gasoline and fuel storage tanks, including sites of known VOC (fuels/solvents) contamination or VOC spills and/or leaks
2	Diesel or other fuel operated pumps or generators for water system operation
3	Heating oil storage and pipelines
4	Vehicle and equipment service and repair shops
5	Fuel pipelines (excluding natural gas lines)
6	Aircraft maintenance and fueling
7	State Highways, Interstates, and railroads
8	Residential or community septic systems or sewage disposal lagoons (only indicate those within 100 feet of well).
9	Hazardous waste storage, transport, and disposal facilities
10	Dumps and landfills containing hazardous materials
11	Military installations
12	Abandoned, uncapped wells, or dry wells
13	Underground injection wells or disposal pits
14	Stormwater infiltration ponds
15	Drycleaners
16	Car Washes which do not discharge to sewer systems
17	Asphalt and tar manufacture
18	Mining operations or logging operations
19	Junk and salvage yards; autowrecking yards
20	Commercial furniture stripping or painting and refinishing
21	Photographic processing utilizing chemicals
22	Printing (excluding photocopying)

23	Appliance and small engine repair
24	Boat repair, service, and refinishing
25	Electronics and chemical manufacturing; Pharmaceutical research or production
26	Oiled dirt roads

If one or more of the above facilities are located within the ½ mile waiver study, you will likely be denied a VOC use waiver for that POE. You may wish to appeal the decision (see appendix D) or immediately apply for a Susceptibility Waiver for those POE's which are not granted a use waiver. To apply for a VOC Susceptibility waiver complete 3.3.1 Part 4.

Step 2. Certification - Fill out the certification form (Appendix E) and submit with the waiver map and matrix. Copies of Appendix E may need to be made as each type of waiver for which the system applies requires certification.

3.2.2 USE WAIVER APPLICATION

PART 3: SYNTHETIC ORGANIC CHEMICALS (SOCs)

Step 1. Agricultural and Land Use Activity. For each activity identified below that is within the ½ mile waiver study area mark the approximate location on the map and label it with the corresponding number (see figure 3). Also, include the corresponding numbers under the appropriate category on the matrix. If these activities never occurred, or the water system owner could find no evidence that the activity occurred in the waiver study area, please continue with Step 2.

	Activity
27	Animal Feedlots (> 100 animals)*
28	Golf Courses
29	Livestock Delousing
30	Pesticide Mixing or Storage
31	Pesticide Spills
32	Wholesale Nurseries
33	Agricultural Activity (crops, orchards)

* Animal Feedlots located within the ½ mile waiver study area will not result in a waiver denial. Animal Feedlots will be evaluated as a source of nitrates.

	Activity (indicate on map only if within 1000 feet of wellhead
34	Pulp and paper manufacturing
35	Disposal site of past production of herbicides containing 2,4,5-trichlorphenol (2,4,5-TP or Silvex).
36	Wood treatment plants
37	Chemical manufacturing plants that produce or have produced 2,4,5-trichlorphenol (2,4,5-TP or Silvex) or hexachlorophene.
38	Municipal or industrial waste incineration facilities.
39	Municipal or industrial landfills.
40	Road and highway easements where dioxin was used as a defoliant.

Step 2. SOC Use. For each contaminant that is or was used, stored, or transported (this includes pesticide manufacturing or mixing facilities) in the ½ mile waiver study area in the past 10 years, mark the approximate location on the map and label it with the corresponding number (see Figure 3). Also, include the corresponding numbers under the appropriate category on the matrix. If these activities never occurred, or the water system owner could find no evidence that the activity occurred in the waiver study area, please continue with Step 3. (Synthetic organic chemical and PCB use are included in this matrix in addition to pesticides since these chemicals may be tested for in conjunction with the pesticides. These chemicals are marked by **. Trade names of pesticides which contain a regulated contaminant as an active ingredient are listed in parentheses).

	Contaminant Groups
	Group 41 (Analyzed by EPA Method 504)
41	Dibromochloropropane (DBCP, Nemafume)
41	Ethylene dibromide (EDB, Bromofume, Aquacide)
	Group 42 (Analyzed by partial EPA Methods 505, 506, 507, 525.1, 550, 550.1)
42	Alachlor (Cropstar GB, Lasso, Micro-Tech, Parner WDG, Bullet, Bronco, Lariat, Freedom)
42	Aldrin (Aldrex, Octalene, Drinox)
42	Atrazine (Aatrex 4L or Accu-pak or Nine-O, Guardsmen)

42	Benzo(a)Pyrene
42	Butachlor
42	Chlordane (Dow Klor, Orthochlor, Oktaterr)
42	Dieldrin (Octalox, SD 3417)
42	**Di(ethylhexyl)-adipate (Production of plastisizers; compounding vinyl resins).
42	**Di(ethylhexyl)-phthalate (Plasticizer for resins; used in manufacture of organic pump fluids).
42	Endrin (Hexadrin, Endrex)
42	Heptachlor (H-34, Heptox)
42	Heptachlor Epoxide
42	Hexachlorobenzene (Amatin, Bunt-cure, Sanocide)
42	**Hexachlorocyclopentadiene (Production of flame retardants)
42	Lindane (Gamaphex, Forlin, Isoton, Lindagam)
42	Methoxychlor (DMDT, Marlate, Chemform)
42	Metolachlor
42	Metribuzin (Sencor, Lexone, Canopy)
42	PCBs (Hazardous waste sites, transformer stations, or PCBs in water production/distribution equipment)
42	Propachlor (Ramrod and Atrazine DF, Bexton, Aatram, Niticid)
42	Simazine (Princep, Primatol, Amizine)
42	Toxaphene
42	Pentachlorophenol (Dowicide) 525.1
	Group 43 (Analyzed by EPA Method 508.A)
43	PCBs
	Group 44 (Analyzed by EPA Method 515.1)
44	Dalapon (Dowpon, Radapon)
44	Dicamba (Resolve, Banvel, Mondak, Velsicol, Banex)
44	Dinoseb (Dinitro, DNBP, Sevtox)
44	Pentachlophenol (Dowicide)

44	Picloram (Chloramp, Tordon, Pecloram)
44	2,4-D (Weedone, Formula 40, Weedar 64, Weed Broom)
44	2,4-DB (Butyrac)
44	2,4,5-T
44	2,4,5-TP (Silvex)
	Group 45 (Analyzed by EPA Method 531.1)
45	Aldicarb, Aldicarb Sulfone, Aldicarb Sulfoxide (Temik)
45	Carbaryl (Adios, Sevin, Slam, Dicarbam, Carbamine)
45	Carbofuran (Furadan 4F, Curaterr, Pillarfuran)
45	Methomyl (Lannate, Lanox, Dupont 1179)
45	Oxamyl (Vydate, Dioxymal, Thioximal)
45	3-Hydroxycarbofuran
	Group 46 (Analyzed by EPA Method 547)
46	Glyphosate (Accord, Ranger, Landmaster, Round Up, Rondo, Rodeo, Glycel)
	Group 47 (Analyzed by EPA Method 549)
47	Diquat (Weedtrine, Reglox, Reglone, Aquacide)
	Group 48 (Analyzed by EPA Method 548)
48	Endothall (Aquathol, Herbicide 2 3, Hydrothol, Hydout, Ripenthol)
	Group 49 (Analyzed by EPA Method 1613)
49	Dioxin

If any of the above activities under Step 1 or contaminants under Step 2 are located within the ½ mile waiver study area, you will likely be denied a SOC use waiver for that POE. You may wish to appeal the decision (see appendix D) or immediately apply for a Susceptibility Waiver for those POE's which are not granted a use waiver.

Step 3. Certification - Fill out the certification form (Appendix E) and submit with the waiver map and matrix. Copies of Appendix E may need to be made as each type of waiver for which the system applies requires certification.

3.3 SUSCEPTIBILITY WAIVERS

If your system, or some of your system's POEs, do not qualify for a use waiver, follow the steps in Part 4 and Part 5 below to see if you qualify for a waiver based on susceptibility. Surface water sources, or ground water sources under the direct influence of surface water, are not eligible for a part 4 or part 5 susceptibility waiver; a comprehensive vulnerability assessment waiver application is required for these source types.

3.3.1 Part 4: Susceptibility SCREENING ASSESSMENT, VOCs

Step 1. Indicate yes or no to each of the following on the matrix.

1. Is the population of the community in which the source is located greater than 10,000?

2. Is the depth to groundwater greater than 100 feet for each groundwater source?

3. Are septic systems located within 100 feet of the wellhead?

4. Is the well integrity (the surface and sub-surface physical structure) maintained for each well?

5. Is the water bearing formation a high vulnerability formation such as soluble and fractured bedrock aquifer, fractured igneous and metamorphic rocks, karst limestone, or permeable basalt?

If you answered no to questions 2 or 4 above, or yes to questions 1, 3, or 5 above, you must complete a Comprehensive Vulnerability Assessment for those sources, or appeal to ADEQ. (For appeal procedures see Appendix D)

Step 3. Certification - Fill out the certification form (Appendix E) and submit with the waiver map and matrix. Copies of Appendix E may need to be made as each type of waiver for which the system applies requires certification.

3.3.2 Part 5: Susceptibility SCREENING ASSESSMENT, SOCs

This application should be completed for those sources which did not receive a use waiver. This application ONLY applies to groundwater sources, not surface water sources or groundwater sources which are under the direct influence of surface water.

Step 1. Complete questions 1-6 for EACH source on the Matrix.

1. Were any of the Table 3. Contaminants used in the Study Area?

Table 3. List of most persistent and mobile SOC Contaminants

DBCP	EDB	Alachlor	Atrazine
Hexachlorobenzene	Simazine	Pentachlorophenol	Dalapon
Dinoseb	Picloram	Carbofuran	Diquat

2. Is the population of the community in which the source is located greater than 10,000?

3. Is depth to groundwater greater than 100 feet for each groundwater source?

4. Is there a history of agricultural use in the study area, and nitrate levels greater than 10 mg/l?

A tier 3 comprehensive vulnerability assessment in required for any source which has a nitrate level in excess of 10mg/l, if there has been historical agricultural land use in the study area.

5. Is well integrity (the surface or sub-surface physical structure) maintained for each well.

6. Is the water bearing formation a high vulnerability formation such as soluble and fractured bedrock aquifer, such as fractured igneous and metamorphic rocks, karst limestone, or permeable basalt?

If you answered yes to questions 1, 2, 4, or 6 above, or no to questions 3, or 5, you will likely be denied a SOC screening susceptibility waiver for that POE. You may wish to appeal the decision (see appendix D) or immediately apply for a Comprehensive vulnerability waiver for those POE's which are not granted screening susceptibility waivers.

Step 2. Certification -Fill out the certification form (Appendix E) and submit with the waiver map and matrix. Copies of Appendix E may need to be made as each type of waiver which the system applies for requires a certification.3.4

3.4 WAIVER-BY-RULE FOR INORGANIC CHEMICALS

A source or point of entry qualifies for an inorganic waiver by rule only if all three of the following conditions are met:

1. The source or point of entry must have three sets of inorganic chemical laboratory compliance results (Groundwater systems--at least once every three years for nine years, and surface water systems three consecutive years);
2. At least one sample must have been taken after 1/1/1990, and;
3. All the results must be less than or equal to 75% of the applicable MCL.

Inorganic waivers will be granted on a group basis. The table below lists the inorganic chemicals for each group. If your system is granted a waiver for either or both of the inorganic groups you will not be required to monitor for those inorganic chemicals for nine years. A source or point of entry must qualify under all three of the above criteria for each inorganic chemical in the group to receive a waiver for that group.

Inorganic Group 1	Inorganic Group 2
Arsenic	Antimony
Barium	Beryllium
Cadmium	Cyanide
Chromium	Thallium
Selenium	Nickel
Fluoride	
Mercury	

ADEQ has evaluated the source(s) and points of entry for your system to determine whether all of the results from your initial monitoring year are less than or equal to 75% of the applicable MCL (a list of samples that <u>do not meet</u> this criterion and are not eligible for waivers is attached).

Step 1. For eligible sources/POEs, submit copies of the three sets of analytical data (one taken after 1/1/90).

Step 2. Sign and submit the certification.

3.4.1 Cyanide Waiver

Step 1. ADEQ's drinking water rules (R18-4-206.L) provide for a cyanide use waiver, based on the absence of industrial sources of cyanide in the ½ mile radius waiver study area. For each activity listed below identified within the ½ mile waiver study area, mark the approximate location on the map and label it with the corresponding number on the map (see Figure 3) and matrix. If these activities never occurred, or the water system owner could find no evidence that the activity occurred in the waiver study area, please continue with Step 2.

	Type of Facility or Operation
50	Metallurgical operations, metal plating plants, metal cleaning
51	Steel mills, steel processing Iron works
52	Electroplating operations
53	Chemical Industries; Organic and Inorganic chemical plants
54	Petroleum refining
55	Coal-powered industries, power plants
56	Municipal waste incinerators Burning of silk, wool, plastics
57	Mining operations
58	Use, storage, transport of cyanide-containing pesticides
59	Laboratory and photographic processes
60	Landfills, dumps, disposal sites
61	Tanneries, hide processing operations
62	Waste-water treatment operations
63	Storage, disposal, use of firefighting chemicals, equipment

Step 2. Certification - Fill out the certification form (Appendix E) and submit with the waiver map and matrix. Copies of Appendix E may need to be made as each type of waiver for which the system applies requires a certification.

3.4.2 Sulfate Waiver

ADEQ's drinking water rules (R18-4-401.D.) allow a waiver from the special monitoring requirements for sulfate based on previous analytical results. To qualify for a sulfate waiver all monitoring results collected after January 1, 1990 must indicate that the concentration of sulfate does not exceed 250 mg/l.

ADEQ has evaluated all source(s) and points of entry for your system to determine eligibility for a sulfate waiver. Those source(s) or points of entry which do qualify for sulfate waivers are indicated on the inorganic waiver matrix with a "Y". Those source(s) or points of entry which do not qualify for sulfate waivers are indicated on the inorganic waiver matrix with a "N".

Step 1. **Certification** - Fill out the certification form (Appendix E) and submit with the waiver matrix. Copies of Appendix E may need to be make as each type of waiver which the system applies for requires a certification.

3.5 TREATMENT TECHNIQUE WAIVER

3.5.1 Glyphosate Waiver

If you were not eligible for a glyphosate use or susceptibility waiver, you may receive a treatment technique waiver if all sources or points of entry are continuously chlorinated. Continuous chlorination is defined as a chlorinator that is permanently installed and operated continuously at each source or point of entry.

Step 1. Indicate on the matrix which sources or points of entry are continuously chlorinated.

Step 2. **Certification** - Fill out the certification form (Appendix E) and submit with the waiver matrix. Copies of Appendix E may need to be make as each type of waiver which the system applies for requires a certification.

APPENDIX A. INORGANIC CHEMICALS

Contaminant	MCL - mg/l
Antimony	0.006
Arsenic	0.05
Barium	2.0
Beryllium	0.004
Cadmium	0.005
Chromium	0.1
Cyanide	0.2
Fluoride	4.0
Mercury	0.002
Nickel	0.1
Selenium	0.05
Thallium	0.002

APPENDIX B. VOLATILE ORGANIC CHEMICALS (VOCs)

Contaminant	MCL - mg/l
Benzene	0.005
Carbon tetrachloride	0.005
1,2-Dichloroethane	0.005
1,1-Dichloroethylene	0.007
para-Dichlorobenzene	0.075
1,1,1-Trichloroethane	0.20
Trichloroethylene	0.005
Vinyl chloride	0.002
cis-1,2-Dichloroethylene	0.07
1,2-Dichloropropane	0.005
Ethylbenzene	0.7
Monochlorobenzene	0.1
o-Dichlorobenzene	0.6
Styrene	0.1
Tetrachloroethylene	0.005
Toluene	1.0
Trans-1,2-Dichloroethylene	0.1
Xylenes (total)	10.0
Dichloromethane	0.005
1,2,4-Trichlorobenzene	0.07
1,1,2-Trichloroethane	0.005

APPENDIX B. (CONT.) UNREGULATED VOLATILE ORGANIC CHEMICALS (VOCs)

Contaminant
bromobenzene
bromodichloromethane
bromoform
bromomethane
chlorobenzene
chlorodibromomethane
chloroethane
chloroform
chloromethane
o-chlorotoluene
p-chlorotoluene
dibromomethane
m-dichlorobenzene
1,1-dichloroethane
1,1-dichloropropene
1,3-dichloropropane
1,3-dichloropropene
2,2-dichloropropane
1,1,1,2-tetrachloroethane
1,1,2,2-tetrachloroethane
1,2,3-trichloropropane

Group 41 (Analyzed by EPA Method 504)	MCL mg/l
Dibromochloropropane (DBCP)	0.0002
Ethylene dibromide (EDB)	0.00005
Group 42 (Analyzed by partial EPA Methods 505, 506, 507, 508A, 525.1, 550, 550.1)	
Alachlor	0.002
Aldrin	-----
Atrazine	0.003
Benzo(a)Pyrene	0.0002
Butachlor	-----
Chlordane	0.002
Dieldrin	-----
Di(ethylhexyl)-adipate	0.4
Di(ethylhexyl)-phthalate	0.006
Endrin	0.002
Heptachlor	0.0004
Heptachlor Epoxide	0.0002
Hexachlorobenzene	0.001
Hexachlorocyclopentadiene	0.05
Lindane	0.0002
Methoxychlor	0.04
Metolachlor	-----
Metribuzin	-----
PCBs	0.0005
Propachlor	-----
Simazine	0.004
Toxaphene	0.003
Pentachlorophenol	0.001

Group 43 (Analyzed by EPA Method 508.A)	
PCBs	0.0005
Group 44 (Analyzed by EPA Method 515.1)	
Dalapon	0.2
Dicamba	-----
Dinoseb	0.007
Pentachlophenol Picloram	0.5
2,4-D	0.07
2,4-DB	-----
2,4,5-T	-----
2,4,5-TP (Silvex)	0.05
Group 45 (Analyzed by EPA Method 531.1)	
Aldicarb, Aldicarb Sulfone, Aldicarb Sulfoxide	----
Carbaryl	----
Carbofuran	0.04
Methomyl	----
Oxamyl	0.2
3-Hydroxycarbofuran	----
Group 46 (Analyzed by EPA Methods 547)	
Glyphosate	0.7
Group 47 (Analyzed by EPA Method 549)	
Diquat	0.02
Group 48 (Analyzed by EPA Method 548)	
Endothall	0.1
Group 49 (Analyzed by EPA Method 1613)	
Dioxin	3 x 10-8

APPENDIX D. APPEAL PROCEDURES

A water system may appeal a waiver denial decision made by ADEQ for sections 3.3.1 part 4 and 3.3.2 part 5 of this document. **A written appeal from the system must be submitted to ADEQ within 30 days of receipt of the waiver denial letter**, and contain the following information:

1. The reason or condition for which the waiver was denied.

2. A detailed explanation as to why that particular reason or condition should not apply to this source or POE.

3. Any documentation which supports the basis for the appeal. (previous geologic reports or studies, analytical results, scientific reports or studies, technical reports or studies, or any other form of documentation which supports the appeal)

4. All submittals will be reviewed by ADEQ. ADEQ shall make the final determination on the acceptability and technical merit of submitted supporting documentation.

ADEQ will respond to all appeals within 30 days of receipt of a complete appeal request.

Mail appeals at the following address:

Arizona Department of Environmental Quality
Monitoring Waiver Approving Official
WQD, DWS, PDOU
3033 N. Central Avenue
Phoenix, AZ 85012

APPENDIX E. CERTIFICATION AND SOURCES OF INFORMATION USED

CERTIFICATION

Place a check (✓) in the box next to the type of waiver your system is applying for. For systems with multiple points of entry, photocopy this form and indicate which type of waiver for each point of entry you are applying for. Be sure to sign the certification on the next page--any waiver applications received without the certification completed will be denied.

System ID Number:_____

System Name:_____

Point of entry number(s):_____

- ☐ Applying for a VOC use waiver
- ☐ Applying for a SOC use waiver
- ☐ Applying for a VOC screening susceptibility waiver
- ☐ Applying for a SOC screening susceptibility waiver
- ☐ Applying for an IOC waiver by rule
- ☐ Applying for a Cyanide use waiver
- ☐ Applying for a Sulfate waiver
- ☐ Applying for a Glyphosate treatment technique waiver

SOURCES OF INFORMATION USED

The following sources were used for information in completing the waiver application matrix:_____

I hereby certify that the above information provided on the waiver application and waiver matrix, to the best of my knowledge, is complete and correct, and has been verified to the fullest extent possible.

Name of Water System Owner (type or print)	Signature	Date
Title		

Name of Application Preparer (type or print)	Signature	Date
Title		

Name of Field Verification Person (type or print)	Signature	Date
Title		

APPENDIX F. COMMON USES FOR CONTAMINANTS IN TABLE 3

Below is a list of the common uses for the pesticides and herbicides found on table 3, 3.3.2 Part 5.

1. DBCP:	Chemical used as a soil fumigant, nematocide, and pesticide.
2. Alachlor:	Herbicide for control of annual grasses and many broad-leaved weeds in: cotton, brassicas, maize, oilseed rape, peanuts, radish, soybeans, and sugarcane.
3. Hexachlorobenzene:	Fungicide for control of tilletia caries on wheat, also as fumigant against dwarf bunt and bunt spore.
4. Pentachlorophenol:	Pesticide for control of termites, and to protect wood from fungal rots and wood-boring insects; as a pre-harvest defoliant and as a general herbicide. Also used as a general disinfectant (example - trays in mushroom houses).
5. Dinoseb:	Herbicide for post emergence weed control in cereals, undersown cereals, seedling lucerne, and peas. Solutions in oil are used for pre-emergence control of annual weeds in beans, peas, potatoes, hops, legume (bean) seed crops, raspberries, and strawberries.
6. Carbofuran:	Insecticide for control of mites and insects on maize (corn), brassicas, and rice.
7. EDB:	Insecticide for control of pests on fruit and vegetables; also for spot treatment of flour mills.
8. Atrazine:	Herbicide for pre- and post-emergence weed control on asparagus, forestry, grasslands, grass crops, maize (corn), pineapple, sorghum, sugarcane, and non-crop areas.
9. Simazine:	Herbicide for pre-emergence control of broad-leaved and grass weeds in deep rooted crops such as artichokes, asparagus, berry crops, broad beans, citrus, cocoa, coffee, forestry, hevea, hops, oil palms, olives, orchards, ornamentals, sisal, sugarcane, tea, tree nurseries, turf, vineyards, maize (corn; most common use). Also used to control vegetation and algae in farm ponds, fish hatcheries, etc.
10. Dalapon:	Herbicide for control of annual grasses and perennial grasses on non crop areas.
11. Picloram:	Herbicide for control of annual weeds, deep rooted perennials on non crop areas, and for brush control.
12. Diquat:	Herbicide for potato stems, seed crop desiccation (drying), and aquatic weed control.