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AQUIFER PROTECTION PERMITS
APPLICATION GUIDANCE MANUAL

PREPARED BY:
ARIZONA DEPARTMENT OF
ENVIRONMENTAL QUALITY
Modified September 11, 1991

APPLICATION GUIDANCE MANUAL

TABLE OF CONTENTS

Page #

Chapter I: Introduction.....2
Purpose and Use of the Manual.....2
Applicable Rules and Statutes.....3
Major Requirements for an Aquifer Protection Permit.....4

Chapter II: Aquifer Protection Permit Process.....7
Steps in the Permit Process.....7
Permit Actions.....17
Other Permits and Regulations.....19

Chapter III: Information Requirements.....23
Facility Data.....23
Applicant Information.....26
Owner Information.....27
Operator Information.....28
Existing Environmental Permits.....29
Required Attachments.....29

Chapter IV: Supplemental Information.....47
Site Hydrology.....48
Contingency Plan Requirement.....74
Remedial Action Plan.....76
Closure Plan.....76

Figures

Figure 1: ADEQ Aquifer Protection Permit Process.....8
Figure 2: Well Numbering System in Arizona.....53

Tables

Table 1: Fee Schedule.....12
Table 2: Other Permits and Approvals.....19
Table 3: Summary of Monitoring Well Construction.....67

Appendices

Appendix A: Aquifer Water Quality Standards
Appendix B: Single Coordinate Lat/Long Interpretation
Appendix C: Hazardous Substances List

Date: September 11, 1991

I. INTRODUCTION

A. PURPOSE AND USE OF THE MANUAL

The purpose of this manual is to provide the regulated community with information to help complete a permit application and guide them through the Aquifer Protection Permit (APP) process. It describes the permitting process, outlines specific information requirements for the individual permit application and provides technical information to guide the applicant in designing acceptable monitoring, contingency, and closure plans.

By the fact that you are using this guidance manual, it must be assumed that you are required to obtain an Individual Aquifer Protection Permit (APP). If you are uncertain, the DEQ has a simple form ("Determination of Applicability") which may be submitted to determine if the APP rules apply to your operation, or if you qualify for a general permit. A general permit is written into the regulations, and does not require the submission of an application, but there are criteria listed in the regulations to which a facility must adhere to maintain compliance with a particular general permit.

Each discharge facility or practice will present a unique situation and the specific requirements will depend on that

situation. Content presented here is not intended to be all inclusive. Furthermore, not every applicant will have to address everything in this document. This manual is to be used as a general guide by the permit applicant to facilitate the permitting process. It can not substitute for direct communications with the Arizona Department of Environmental Quality, Office of Water Quality, Water Permits Unit (257-2270).

B. APPLICABLE STATUTES AND RULES

The Environmental Quality Act of 1986 (Arizona Revised Statutes, or A.R.S. Title 49) established the requirement to develop the Aquifer Protection Permit program. Throughout this manual, statutory references will be in the form: A.R.S. 49-xxx, where xxx stands for the specific section of the statute; and regulatory references will be in the form: A.A.C. R18-9-xxx, which stands for Arizona Administrative Code, Title 18, Chapter 9, and xxx represents the specific section or rule.

The legal basis for this program are the following statutes and regulations:

- A.R.S. Title 49, specific sections including:
  - 201 (Definitions)

greatest degree of discharge reduction achievable through the application of the best available demonstrated control technology, processes, operating methods or other alternatives. This requirement, commonly referred to as "BADCT", is described in A.R.S. 49-243.B.1.

2. The second demonstration is that the discharge will not cause or contribute to a violation of an aquifer water quality standard (see Appendix A) at the applicable point of compliance, (A.R.S. 49-243.B.2.), or if an aquifer water quality standard is already exceeded at the point of compliance, that the discharge will not cause further degradation of the aquifer with respect to the parameter which exceeds the standard (A.R.S. 49-243.B.3.).

One exception to these requirements is applicants for recharge or underground storage and recovery projects. Applicants for permits for these projects are not required to demonstrate compliance with BADCT. The requirements for permitting recharge or underground storage and recovery projects are given in A.R.S. 49-243.C. Applicants for these projects must show that it will be so designed, constructed and operated as to

- 203 (Powers and Duties of Director)
- 221 & 223 (Water Quality Standards)
- 224 (Aquifer Identification, Classification)
- 241-251 (Aquifer Protection Permits)

- Arizona Administrative Code:
  - Title 18, Chapter 9, Article 1 (Aquifer Protection Permits)
  - Title 18, Chapter 11, Article 4 (Aquifer Water Quality Standards)
  - Title 18, Chapter 11, Article 5 (Aquifer Boundaries and Protected Use Classification)

For more specific information concerning this program, not contained in this manual, you are directed to consult any of the above. These documents may be obtained from the Secretary of State, State Capital, 7th Floor, West Wing, 1700 W. Washington, Phoenix, AZ 85007 or (602) 542-4086.

C. MAJOR REQUIREMENTS FOR AN AQUIFER PROTECTION PERMIT

In order to obtain an Aquifer Protection Permit for a discharging facility, the applicant must make two demonstrations:

1. The first demonstration is that "the facility will be so designed, constructed and operated as to ensure the

CHEMICAL NAME	OTHER PARAMETER NAMES	CASRN	CWA 311(b)(4)	CWA 307(a)	CERCLA 302.4	RCRA 261.33e	USCODE 241b.4	ARS 243D
Pink/red water from TNT operations								
K048			N	N	Y	N	N	N
Dissolved air flotation (DAF) float from the petroleum refining industry								
K049			N	N	Y	N	N	N
Slop oil emulsion solids from the petroleum refining industry								
K050			N	N	Y	N	N	N
Heat exchanger bundle cleaning sludge from the petroleum refining industry								
K051			N	N	Y	N	N	N
API separator sludge from the petroleum refining industry								
K052			N	N	Y	N	N	N
Tank bottoms (leaded) from the petroleum refining industry								
K060			N	N	Y	N	N	N
Ammonia still lime sludge from coking operations								
K061			N	N	Y	N	N	N
Emission control dust/sludge from the primary production ofsteel in electric furnaces								
K062			N	N	Y	N	N	N
Spent pickle liquor from steel finishing operations								
K069			N	N	Y	N	N	N
Emission control dust/sludge from secondary lead smelting								
K071			N	N	Y	N	N	N
Brine purification muds from the mercury cell process in chlorine production, where seperately prepurified brine is not used								
K073			N	N	Y	N	N	N
Chlorinated hydroarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production								
K083			N	N	Y	N	N	N
Distillation bottoms from aniline extraction								
K084			N	N	Y	N	N	N
Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds								
K085			N	N	Y	N	N	N
Distillation or fractionation column bottoms from the production of chlorobenzenes								
K086			N	N	Y	N	N	N
Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead								
K087			N	N	Y	N	N	N

CHEMICAL NAME	OTHER PARAMETER NAMES	CASRN	CWA 311(b)(4)	CWA 307(a)	CERCLA 302.4	RCRA 261.33e	USCODE 241b.4	ARS 243D
By-product salts generated in the production of MSMA and cacodylic acid								
K032			N	N	Y	N	N	N
Wastewater treatment sludge from the production of chlordane								
K033			N	N	Y	N	N	N
Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane								
K034			N	N	Y	N	N	N
Filter solids from the filtration of Hexachlorocyclopentadiene in the produciton of chlordane								
K035			N	N	Y	N	N	N
Wsatewater treatment sludges generated in the production of creosote								
K036			N	N	Y	N	N	N
Still bottoms from toluene reclamation distillation in the production of disulfoton								
K037			N	N	Y	N	N	N
Wastewater treatment sludges from the production of disulfoton								
K038			N	N	Y	N	N	N
Wastewater from the washing adn stripping of phorate production								
K039			N	N	Y	N	N	N
Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate								
K040			N	N	Y	N	N	N
Wastewater treatment sludge from the production of phorate								
K041			N	N	Y	N	N	N
Wastewater treatment sludge from the production of toxaphene								
K042			N	N	Y	N	N	N
Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the produciton of 2,4,5-T								
K043			N	N	Y	N	N	N
2,6-Dichlorophenol waste from, the production of 2,4-D								
K044			N	N	Y	N	N	N
Wastewater treatment sludges from the manufacturing and processing of explosives								
K045			N	N	Y	N	N	N
Spent carbon from the treatment of wastewater containing explosives								
K046			N	N	Y	N	N	N
Wastewater treatment sludges from the manufacturing formulation and loading of lead-based initiating compounds								
K047			N	N	Y	N	N	N

CHEMICAL NAME	OTHER PARAMETER NAMES	CASRN	CWA 311(b)(4)	CWA 307(a)	CERCLA 302.4	RCRA 261.33e	USCODE 241b.4	ARS 243D
K112 Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene			N	N	Y	N	N	N
K113 Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene			N	N	Y	N	N	N
K114 Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene			N	N	Y	N	N	N
K115 Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene			N	N	Y	N	N	N
K116 Organic condensate form the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine			N	N	Y	N	N	N
K117 Wastewater from the reaction vent gas scrubber in the production of ethylene bromide via bromination of ethene			N	N	Y	N	N	N
K118 Spent absorbent solids from the puification of ethylene bromide in the production of ethylene bromide			N	N	Y	N	N	N
K136 Still bottoms from the purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene			N	N	Y	N	N	N

CHEMICAL NAME	OTHER PARAMETER NAMES	CASRN	CWA 311(b)(4)	CWA 307(a)	CERCLA 302.4	RCRA 261.33e	USCODE 241b.4	ARS 2430
Decanter tank tar sludge from coking operations								
K093			N	N	Y	N	N	N
Distillation light ends from the production of phthalic anhydride from ortho-xylene								
K094			N	N	Y	N	N	N
Distillation bottoms from the produciton of phthalic anhydride from ortho-xylene								
K095			N	N	Y	N	N	N
Distillation bottoms from the production of 1,1,1-trichloroethane								
K096			N	N	Y	N	N	N
Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane								
K097			N	N	Y	N	N	N
Vacuum stripper dicharge from the chlordane chlorinator in the production of chlordane								
K098			N	N	Y	N	N	N
Untreated process wastewater from the production of toxaphene								
K099			N	N	Y	N	N	N
Untreated wastewater from the production of 2,4-D								
K100			N	N	Y	N	N	N
Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting(Components of this waste are identical with those of K069)								
K101			N	N	Y	N	N	N
Distillation tar residues from the distillation of aniline-bsed compounds of veterinary pharmaceuticals from arsenic of organo-arsenic compounds								
K102			N	N	Y	N	N	N
Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic of organo-arsenic compounds								
K103			N	N	Y	N	N	N
Process residues from aniline extraction from the production of aniline								
K104			N	N	Y	N	N	N
Combined wastewater streams generated from nitrobenzene/anniline chlorobenzenes								
K105			N	N	Y	N	N	N
Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes								
K106			N	N	Y	N	N	N
Wastewater treatment sludge from the mercury cell process in chlorine production								
K111			N	N	Y	N	N	N
Product washwaters from the production of dinitrotoluene via nitration of toluene								

CHEMICAL NAME	OTHER PARAMETER NAMES	CASRN	CWA 311(b)(4)	CWA 307(a)	CERCLA 302.4	RCRA 261.33e	USCODE 241b.4	ARS 243D
conditions.								
F027			N	N	Y	N	N	N
Discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulations containing compounds derived from these chlorophenols. (This listing does not include formulations containing hexachlorophene synthesized from prepurified 2,4,5-trichlorophenol as the sole component.)								
F028			N	N	Y	N	N	N
Residues resulting from the incineration or thermal treatment of soil contaminated with EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, and F027.								
K001			N	N	Y	N	N	N
Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use cresote and/or pentachlorophenol								
K002			N	N	Y	N	N	N
Wastewater treatment sludge from the production of chrome yellow and orange pigments								
K003			N	N	Y	N	N	N
Wastewater treatment sludge from the production of molybdate orange pigments								
K004			N	N	Y	N	N	N
Wastewater treatment sludge from the production of zinc yellow pigments								
K005			N	N	Y	N	N	N
Wastewater treatment sludge from the production of chrome green pigments								
K006			N	N	Y	N	N	N
Wastewater treatment sludge from the production of chrome green pigments (anhydrous and hydrated)								
K007			N	N	Y	N	N	N
Wastewater treatment sludge from the production of iron blue pigments								
K008			N	N	Y	N	N	N
Oven residue from the production of chrome oxide green pigments								
K009			N	N	Y	N	N	N
Distillation bottoms from the production of acetaldehyde from ethylene								
K010			N	N	Y	N	N	N
Distillation side cuts from the production of acetaldehyde from ethylene								
K011			N	N	Y	N	N	N
Bottom stream from the wastewater stripper in production of acrylonitrile								
K013			N	N	Y	N	N	N
Bottom stream from the acetonitrile column in the production of acrylonitrile								

CHEMICAL NAME	OTHER PARAMETER NAMES	CASRN	CWA 311(b)(4)	CWA 307(a)	CERCLA 302.4	RCRA 261.33e	USCODE 241b.4	ARS 2430
K014 Bottoms from the acetonitrile purification column in the production of acrylonitrile			N	N	Y	N	N	N
K015 Still bottoms from the distillation of benzyl chloride			N	N	Y	N	N	N
K016 Heavy ends or distillation residues from the production of carbon tetrachloride			N	N	Y	N	N	N
K017 Heavy ends(still bottoms) from the purification column in the production of epichlorohydrin			N	N	Y	N	N	N
K018 Heavy ends from the fractionation column in ethyl chloride production			N	N	Y	N	N	N
K019 Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production			N	N	Y	N	N	N
K020 Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production			N	N	Y	N	N	N
K021 Aqueous spent antimony catalyst waste from fluoromethanes production			N	N	Y	N	N	N
K022 Distillation bottom tars from the production of phenol/acetone from cumene			N	N	Y	N	N	N
K023 Distillation light ends from the production of phthalic anhydeide from naphthalene			N	N	Y	N	N	N
K024 Distillation bottoms from the production of phthalic anhydride from naphthalene			N	N	Y	N	N	N
K025 Distillationbottoms fromthe production of nitrobenzene by the nitration of benzene			N	N	Y	N	N	N
K026 Stripping still tails from the production of methyl ethyl pyridines			N	N	Y	N	N	N
K027 Centrifuge and distillation residues from toluene diisocyanate production			N	N	Y	N	N	N
K028 Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane			N	N	Y	N	N	N
K029 Waste from the product steam stripper in the production of 1,1,1-trichloroethane			N	N	Y	N	N	N
K030 Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene			N	N	Y	N	N	N
K031			N	N	Y	N	N	N

CHEMICAL NAME	OTHER PARAMETER NAMES	CASRN	CWA 311(b)(4)	CWA 307(a)	CERCLA 302.4	RCRA 261.33e	USCODE 241b.4	ARS 243D
production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tri- or tetrachlorophenol, or of intermediates used to produce their pesticide derivatives (This listing does not include wastes from the production of hexachlorophene from highly purified 2,4,5-trichlorophenol)								
F021			N	N	Y	N	N	N
Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, of component in a formulating process) of pentachlorophenol or of intermediates used to produce its derivatives								
F022			N	N	Y	N	N	N
Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the manufacturing use (as a reactant, chemical intermediate, or component in aformulating process) of tetra-, penta-, or hexachlorobenzenes under alkaline conditions								
F023			N	N	Y	N	N	N
Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the production or manufacturing use (as a reactant, chemical intermediate, or component in a process) of tri- and tetrachlorophenols (This listing does not include wastes from equipment used only for the production or use of hexachlorophene from highly purified 2,4,5-trichlorophenol)								
F024			N	N	Y	N	N	N
Wastes, including but not limited to distillation residues, heavy ends, tars, and reactor cleanout wastes, from the production of chlorinated aliphalic hydrocarbons, having carbon content from one to five, utilizing free radical catalyzed processes. (This listing does not include light ends, spent filters aand filter aids, spent dessicants(sic), wastwater,wastewater treatment sludges, spent catayists, and wastes listed in 261.32)								
F026			N	N	Y	N	N	N
Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexachlorobenzene under alkaline								

CHEMICAL NAME	OTHER PARAMETER NAMES	CASRN	CWA 311(b)(4)	CWA 307(a)	CERCLA 302.4	RCRA 261.33e	USCODE 241b.4	ARS 243D
e) Pyridine								
F006			N	N	Y	N	N	N
Wastewater treatment sludges from electroplating operations except from the following processes 1) Sulfuric acid anodizing of aluminum 2) tin plating on carbon steel; 3) zinc plating (segregated basis) on carbon steel; 4) aluminum or zinc-aluminum plating on carbon steel; 5)cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and 6) chemical etching and milling of aluminum								
F007			N	N	Y	N	N	N
Spent cyanide plating bath solutions from electroplating operations (except for precious metals electroplating spent cyanide plating bath solutions)								
F008			N	N	Y	N	N	N
Plating bath sludges from the bottom of plating baths from electroplating operations where cyanides are used in the process (except for precious metals electroplating plating bath sludges)								
F009			N	N	Y	N	N	N
Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process (except for precious metals electroplating spent stripping and cleaning bath solutions)								
F010			N	N	Y	N	N	N
Quenching bath sludge from oil baths frommetal heat treating operations where cyanides are used in the process (except for precious metal heat treating quenching bath sludges)								
F011			N	N	Y	N	N	N
Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations (except for precious metals heat treating spent cyanide solutions from salt bath pot cleaning)								
F012			N	N	Y	N	N	N
Quenching wastewater treatment sludges from metal heat treating operations where cyanides used in the process (except for precious metals heat treating quenching wastewater treatment sludges)								
F019			N	N	Y	N	N	N
Wastewater treatment sludges from the chemical conversion coating of aluminum								
F020			N	N	Y	N	N	N
Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the								

CHEMICAL NAME	OTHER PARAMETER NAMES	CASRN	CWA 311(b)(4)	CWA 307(a)	CERCLA 302.4	RCRA 261.33e	USCODE 241b.4	ARS 243D
ZIRCONIUM NITRATE	NONE	13746899	Y	N	Y	N	N	N
ZIRCONIUM POTASSIUM FLUORIDE	NONE	16923958	Y	N	Y	N	N	N
ZIRCONIUM SULFATE	NONE	14644612	Y	N	Y	N	N	N
ZIRCONIUM TETRACHLORIDE	NONE	10026116	Y	N	Y	N	N	N
F001			N	N	Y	N	N	N
The following spent halogenated solvents used in degreasing and sludges from the recovery of these solvents in degreasing operations:								
a) Tetra chloroethylene		127184						
b) Trichloroethylene		79016						
c) Methylene chloride		75092						
d) 1,1,1-Trichloroethane		71556						
e) Carbon tetrachloride		56235						
f) Chlorinated fluorocarbons		(N.A.)						
F002			N	N	Y	N	N	N
The following spent halogenated solvents and the still bottoms from the recovery of these solvents:								
a) Tetrachloroethylene		127184						
b) Methylene Chloride		75092						
c) Trichloroethylene		79016						
d) 1,1,1-Trichloroethane		71556						
e) Chlorobenzene		108907						
f) 1,1,2-Trichloro-1,2,2-trifluoroethane		76131						
g) o-dichlorobenzene		106467						
h) trichlorofluoromethane		75694						
F003			N	N	Y	N	N	N
The following spent non-halogenated solvents and the still bottoms from the recovery of these solvents:								
a) Xylene		1330207						
b) Acetone		67641						
c) Ethyl acetate		141786						
d) Ethylbenzene		100414						
e) Ethyl ether		60297						
f) Methyl isobutyl ketone		108101						
g) n-Butyl alcohol		71363						
h) Cyclohexanone		108941						
i) Methanol		67561						
F004			N	N	Y	N	N	N
The following spent non-halogenated slovents and still bottoms from the recovery of these solvents: a) Cresols/Cresylic acid b) Nitrobenzene								
F005			N	N	Y	N	N	N
The following spent non-halogenated solvents and the still bottoms from the recovery of these solvents:								
a) Toluene								
b) Methyl ethyl ketone								
c) Carbon disulfide								
d) Isobutanol								

CHEMICAL NAME	OTHER PARAMETER NAMES	CASRN	CWA 311(b)(4)	CWA 307(a)	CERCLA 302.4	RCRA 261.33e	USCODE 241b.4	ARS 243D
Characteristic of EP Toxicity			N	N	Y	N	N	N
Arsenic			N	N	Y	N	N	N
Barium			N	N	Y	N	N	N
Cadmium			N	N	Y	N	N	N
Chromium			N	N	Y	N	N	N
Lead			N	N	Y	N	N	N
Mercury			N	N	Y	N	N	N
Selenium D010			N	N	Y	N	N	N
Silver			N	N	Y	N	N	N
Endrin			Y	N	Y	N	N	N
Lindane			Y	N	Y	N	N	N
Methoxychlor			Y	N	Y	N	N	N
Toxaphene			Y	N	Y	N	N	N
2,4-D			Y	N	Y	N	N	N
2,4,5-TP			Y	N	Y	N	N	N
URACIL, 5-[BIS(2-CHLOROETHYL)AMINO-,	see URACIL MUSTARD							
URACIL MUSTARD	URACIL, 5-[BIS(2-CHLOROETHYL)AMINO]-,	66751	N	N	Y	N	N	N
URANYL ACETATE	NONE	541093	Y	N	Y	N	N	N
URANYL NITRATE	NONE	10102064	Y	N	Y	N	N	N
URETHANE	ETHYL CARBAMATE	51796	N	N	N	N	Y	Y
VANADIC ACID, AMMONIUM SALT	see AMMONIUM VANADATE							
VANADIUM(V)OXIDE	see VANADIUM PENTAOXIDE							
VANADIUM PENTAOXIDE	VANADIUM(V) OXIDE	1314621	Y	N	Y	N	N	N
VANADYL SULFATE	NONE	2774136	Y	N	Y	N	N	N
VINYL ACETATE	ETHENYLETHANOTE	108054	Y	N	Y	N	N	N
VINYL CHLORIDE	ETHANE, CHLORO-,; MVC	75014	N	Y	Y	N	Y	Y
VINYLIDENE CHLORIDE	see 1,1-DICHLOROETHYLENE							
WARFARIN	3-(ALPHA-ACETANYLBENZYL)-4-HYDROXYCOUMARIN AND SALTS	81812	N	N	Y	Y	N	Y
XYLENE (MIXED)	BENZENE, DIMETHYL	1330207	Y	N	Y	N	N	N
m-	m-	108383						
o-	o-	95476						
p-	p-	106423						
XYLENOL	NONE	1300716	Y	N	Y	N	N	N
XENYLAMINE	see 4-AMINOBIPHENYL							
YOHIMBAN-16-CARBOXYLIC ACID, 11,17-DIMETHOXY-18-[(3,4,5-TRIMETHOXY-BENZOYL)OXY]-METHYL ESTER	see RESERPINE							
ZINC	NONE	7440666	N	Y	Y	N	N	N
ZINC AND COMPOUNDS			N	Y	Y	N	N	N
ZINC ACETATE	NONE	557346	Y	N	Y	N	N	N
ZINC AMMONIUM CHLORIDE	NONE	52625258	Y	N	Y	N	N	N
ZINC BORATE	NONE	1332076	Y	N	Y	N	N	N
ZINC BROMIDE	NONE	7699458	Y	N	Y	N	N	N
ZINC CARBONATE	NONE	3486359	Y	N	Y	N	N	N
ZINC CHLORIDE	NONE	7646857	Y	N	Y	N	N	N
ZINC CYANIDE	NONE	557211	Y	N	Y	N	N	N
ZINC FLUORIDE	NONE	7783495	Y	N	Y	N	N	N
ZINC FORMATE	NONE	557415	Y	N	Y	N	N	N
ZINC HYDROSULFITE	NONE	7779864	Y	N	Y	N	N	N
ZINC NITRATE	NONE	7779886	Y	N	Y	N	N	N
ZINC PHENOSULFONATE	NONE	127822	Y	N	Y	N	N	N
ZINC PHOSPHIDE	NONE	1314847	Y	N	Y	N	N	N
ZINC SILCOFLUORIDE	NONE	16871719	Y	N	Y	N	N	N
ZINC SULFATE	NONE	7733020	Y	N	Y	N	N	N

CHEMICAL NAME	OTHER PARAMETER NAMES	CASRN	CWA 311(b)(4)	CWA 307(a)	CERCLA 302.4	RCRA 261.33e	USCODE 241b.4	ARS 243D
THIOUREA, (2-CHLOROPHENYL)-	see 1-(o-CHLOROPHENYL) THIOUREA							
THIOUREA, 1-NAPHTHALENL	see alpha-NAPHTHYLTHIOUREA							
THIOUREA, PHENYL	see N-PHENYLTHIOUREA							
THIRAM	BIS(DIMETHYLTHIOCARBAMOYL) DISULFIDE	137268	N	N	Y	N	N	N
THORIUM DIOXIDE			N	N	N	N	Y	N
TOLUENE	BENZENE, METHYL-,	108883	Y	Y	Y	N	N	N
TOLUENEDIAMINE	DIAMINOTOLUENE	95807	N	N	Y	N	N	N
		25376458						
		496720						
		823405						
TOLUENE DIISOCYANATE	BENZENE, 2,4-DIISOCYANATOMETHYL	584849	N	N	Y	N	Y	Y
		91087						
		26471625						
O-TOLUIDINE	see 2-AMINO-1-METHYL BENZENE							
o-TOLUIDINE HYDROCHLORIDE	see BENZENAMINE, 2-METHYL-, HYDROCHLORIDE							
p-TOLUIDINE	see 4-AMINO-1-METHYL BENZENE							
TOXAPHENE	see CAMPHENE, OCTACHLORO							
2,4,5-TP ACID ESTERS	NONE	32534955	Y	N	Y	N	N	N
1H-1,2,4-TRIAZOL-3-AMINE	see AMITROLE							
TRICHLORFON	NONE	52686	Y	N	Y	N	N	N
1,2,4-TRICHLOROBENZENE	NONE	120821	N	Y	Y	N	N	N
TRICHLOROETHANAL	ACETALDEHYDE, TRICHLORO-; CHLORAL	75876	N	N	Y	N	N	N
1,1,1-TRICHLOROETHANE	see METHYL CHLOROFORM							
1,1,2-TRICHLOROETHANE	see ETHANE 1,1,2-TRICHLORO-							
TRICHLOROETHENE	TRICHLORETHYLENE; ETHYLENETRICHLORIDE	79016	Y	Y	Y	N	N	N
TRICHLOROETHYLENE	see TRICHLOROETHENE							
TRICHLORMETHANESULFENYL CHLORIDE	METHANESULFENYL CHLORIDE, TRICHLORO-	594423	N	N	Y	N	N	N
TRICHLOROMETHANETHIOL	NONE		N	N	N	Y	N	Y
TRICHLOROMONOFLUORO-METHANE	METHANE, TRICHLOROFLUORO-	75694	N	N	Y	N	N	N
TRICHLOROPHENOL	NONE	25167822	Y	N	Y	N	Y	Y
2,3,4-		15950660						
2,3,5-		933788						
2,3,6-		933755						
2,4,5-	PHENOL, 2,4,5-TRICHLORO-	95954						
2,4,6-	PHENOL, 2,4,6-TRICHLORO-	88062						
3,4,5-		609198						
2,4,5-TRICHLOROPHENOXY-ACETIC ACID	see 2,4,5-T ACID							
TRIETHANOLAMINE DODECYLBENZENESULFONATE	NONE	27323417	Y	N	Y	N	N	N
TRIETHYLAMINE	NONE	121448	Y	N	Y	N	N	N
TRIGLYCINE	see NITRILOTRIACETIC ACID							
TRIMETHYLAMINE	NONE	75503	Y	N	Y	N	N	N
sym-TRINITROBENZENE	see BENZENE, 1,3,5-TRINITRO-							
1,3,4-TRIOXANE, 2,4,6-TRIMETHYL	see PARALDEHYDE							
TRIS(1-AZIRIDINYL) PHOSPHINE SULFIDE	THIOEPTA	52240	N	N	N	N	Y	Y
TRIS(2,3-DIBROMOPROPYL) PHOSPHATE	1-PROPANOL, 2,3-DIBROMO- PHOSPHATE (3:1)	126727	N	N	Y	N	Y	Y
TRYPAN BLUE	2,7-NAPHTHALENEDISULFONIC ACID,3,3'-[3,3'-DIMETHYL-(1,1'-BIPHENYL)-4,4'-DIYL)-BIS(AZO)]BIS(5-AMINO-4-HYDROXY)-TETRASODIUM SALT	72571	N	N	Y	N	N	N
UNLISTED HAZARDOUS WASTES CHARACTERISTIC OF EP TOXICITY.			N	N	Y	N	N	N
Characteristic of Ignitability			N	N	Y	N	N	N
Characteristic of Corrosivity			N	N	Y	N	N	N
Characteristic of Reactivity			N	N	Y	N	N	N

CHEMICAL NAME	OTHER PARAMETER NAMES	CASRN	CWA 311(b)(4)	CWA 307(a)	CERCLA 302.4	RCRA 261.33e	USCODE 241b.4	ARS 2430
SULFURIC ACID	NONE	7664939	Y	N	Y	N	N	N
SULFURIC ACID, DIMETHYL ESTER	see DIMETHYL SULFATE							
SULFURIC ACID, THALLUM(1)SALT	THALLIUM(1)SULFATE	7446186	Y	N	Y	N	N	N
SULFUROUS ACID 2-(p-TERT-BUTYLPHENOXY)-1-METHYLETHYL-2-CHLOROETHYL ESTER	see ARAMITE	10031591						
2,4,5-T	see 2,4,5-T ACID							
2,4,5-T ACID	2,4,5-T; 2,4,5-TRICHLOROPHENOXY-ACETIC ACID							
2,4,5-T AMINES	NONE	93765	Y	N	Y	N	N	N
		2008460	Y	N	Y	N	N	N
		6369966						
		6369977						
		1319728						
2,4,5-T ESTERS	NONE	3813147						
		93798	Y	N	Y	N	N	N
		2545597						
		61792072						
		1928478						
2,4,5-TP ACID	see SILVEX	25168154						
2,4,5-T SALTS	NONE							
TDE	see DICHLORODIPHENYL TRICHLOROETHANE	13560991	Y	N	Y	N	N	N
1,2,4,5-TETRACHLOROBENZENE	BENZENE, 1,2,4,5-TETRACHLORO-							
2,3,7,8-TETRACHLORODIBENZO-p-DIOXIN (TCDD)	NONE	95943	N	N	Y	N	N	N
1,1,1,2-TETRACHLOROETHANE	see ETHANE 1,1,1,2-TETRACHLORO-	1746016	N	Y	Y	N	Y	Y
1,1,2,2-TETRACHLOROETHANE	see ETHANE, 1,1,2,2-TETRACHLORO-							
TETRACHLOROETHYLENE	ETHENE,1,1,2,2-TETRACHLORO-							
2,3,4,6-TETRACHLOROPHENOL	see PHENOL, 2,3,4,6-TETRACHLORO-	127184	N	Y	Y	N	N	N
TETRAETHYLDITHIOPYRPHOSPHATE	see DITHIOPYRPHOSPORIC ACID TETERA ESTER							
TETRAETHYL LEAD	PLUMBANE, TETRAETHYL; TEL							
TETRAETHYL PYROPHOSPHATE	PYROPHOSPHORIC ACID, TETRAETHYL ESTER	78002	Y	N	Y	Y	N	Y
TETRAHYDROFURAN	FURAN, TETRAHYDRO-	107493	Y	N	Y	Y	N	Y
TETRAMETHYLDIAMINOBENZOPHENONE	see MICHLER'S KETONE	109999	N	N	Y	N	N	N
TETRANITROMETHANE	METHANE, TETRANITRO-							
TETRAPHOSPHORIC ACID, HEXAETHYL ESTER	see HEXAETHYL TETRAPHOSPHATE	509148	N	N	Y	Y	N	Y
THALLIC OXIDE	THALLIUM OXIDE							
THALLIUM	NONE	1314325	N	N	Y	N	N	N
THALLIUM ACETATE	see ACETIC ACID THALLIUM (1) SALT	7440280	N	Y	Y	N	N	N
THALLIUM AND COMPOUNDS								
THALLIUM(1)CARBONATE	see CARBONIC ACID, DITHALLIUM(L) SALT		N	Y	Y	N	N	Y
THALLIUM(1) CHLORIDE	NONE							
THALLIUM(1) NITRATE	NONE	7791120	N	N	Y	N	N	N
THALLIUM OXIDE	see THALLIC OXIDE	10102451	N	N	Y	N	N	N
THALLIUM(1) SELENIDE	NONE							
THALLIUM(1)SULFATE	see SULFURIC ACID, THALLIUM(1)SALT	12039520	N	N	Y	N	N	N
THIOACETAMIDE	see ETHANETHIOAMIDE							
THIOEPTA	see TRIS]1-AZIRIDINYL) PHOSPHINE SULFIDE							
THIOFANOX	3,3-DIMETHYL-1-(METHYLTHIO)-2-BUTANONE,O-[(METHYLAMINO) CARBONYL] OXIDE	39196184	N	N	Y	Y	N	Y
THIOMETHANOL	see METHANETHIOL							
THIOMIDODICARBONIC DIAMIDE	see 2,4-DITHIOBIURET							
THIOPHENOL	see BENZENETHIOL							
THIOSEMICARBAZIDE	see HYDRAZINECARBOTHIOAMIDE							
THIOUREA	see CARBAMIDE, THIO-							

CHEMICAL NAME	OTHER PARAMETER NAMES	CASRN	CWA 311(b)(4)	CWA 307(a)	CERCLA 302.4	RCRA 261.33e	USCODE 241b.4	ARS 2430
SELENIUM OXIDE	see SELENIUM DIOXIDE							
SELENOUREA	see CARBAMIMIDOSELENOIC ACID							
L-SERINE, DIAZOACETATE (ESTER)	see AZASERINE							
SILVER	NONE	7440224	N	Y	Y	N	N	N
SILVER AND COMPOUNDS			N	Y	Y	N	N	N
SILVER CYANIDE	NONE	506649	Y	N	Y	N	N	N
SILVER NITRATE	NONE	7761888	Y	N	Y	N	N	N
SILVEX	PROPIONIC ACID, 2-(2,4,5-TRICHLOROPHENOXY); 2,4,5-TP ACID	93721	Y	N	Y	N	N	N
SODIUM	NONE	7440235	Y	N	Y	N	N	N
SODIUM ARSENATE	NONE	7631892	Y	N	Y	N	N	N
SODIUM ARSENITE	NONE	7784465	Y	N	Y	N	N	N
SODIUM AZIDE	NONE	26628228	N	N	Y	N	N	N
SODIUM BICHROMATE	NONE	10588019	Y	N	Y	N	N	N
SODIUM BIFLUORIDE	NONE	1333831	Y	N	Y	N	N	N
SODIUM BISULFITE	NONE	7631905	Y	N	Y	N	N	N
SODIUM CHROMATE	NONE	7775113	Y	N	Y	N	N	N
SODIUM CYANIDE	NONE	143339	Y	N	Y	N	N	N
SODIUM DIPHENYL-4,4'-bis-azo-2°, 8°-AMINO-1°-NAPTHOL-3°, 6°DISULFONATE	see DIRECT BLUE 6							
SODIUM DODECYLBENZENE SULFONATE	NONE	25155300	Y	N	Y	N	N	N
SODIUM FLUORIDE	NONE	7681494	Y	N	Y	N	N	N
SODIUM HYDROSULFIDE	NONE	16721805	Y	N	Y	N	N	N
SODIUM HYROXIDE	NONE	1310732	Y	N	Y	N	N	N
SODIUM HYPOCHLORITE	NONE	7681529 10022705	Y	N	Y	N	N	N
SODIUM METHYLATE	NONE	124414	Y	N	Y	N	N	N
SODIUM NITRITE	NONE	7632000	Y	N	Y	N	N	N
SODIUM PHOSPHATE,DIBASIC	NONE	7558794 10039324 10140655	Y	N	Y	N	N	N
SODIUM PHOSPHATE, TRIBASIC	NONE	7601549 7785844 10101890 10361894 7758294 10124568	Y	N	Y	N	N	N
SODIUM SELENITE	NONE	1012188 7782823	Y	N	Y	N	N	N
SOOTS, TARS AND MINERAL OILS			N	N	N	N	Y	Y
STILBENEDIOL, alpha, alpha'-DIETHYL-	see DIETHYLSTILBESTROL							
STREPTOZOTOCIN	D-GLUCOPYRANOSE, 2-DEOXY-2-(3-METHYL-3-NITROSOUREIDO)-	18883664	N	N	Y	N	Y	Y
STRONTIUM CHROMATE	NONE	7789062	Y	N	Y	N	N	N
STRONTIUM SULFIDE	NONE	1314961	N	N	Y	N	N	N
STRYCHNIDIN-10-ONE, AND SALTS	see STRYCHNINE AND SALTS							
STRYCHNIDIN-10-ONE, 2,3-DIMETHOXY	see BRUCINE							
STRYCHNINE AND SALTS	STRYCHNIDIN-10-ONE, AND SALTS	57249	Y	N	Y	Y	N	Y
STYRENE	NONE	100425	Y	N	Y	N	N	N
SUGAR OF LEAD	see ACETIC ACID, LEAD SALT							
SULFALLATE	CDEC; 2-CHLOROALLYL DIETHYLDITHIOCARBAMATE	95067	N	N	N	N	Y	Y
SULFUR HYDRIDE	see HYDROGEN SULFIDE							
SULFUR MONOCHLORIDE	NONE	12771083	Y	N	Y	N	N	N
SULFUR PHOSPHIDE	see PHOSPHORUS SULFIDE							
SULFUR SELENIDE	see SELENIUM DISULFIDE							

CHEMICAL NAME	OTHER PARAMETER NAMES	CASRN	CWA 311(b)(4)	CWA 307(a)	CERCLA 302.4	RCRA 261.33e	USCODE 241b.4	ARS 2430
2-PROPANONE	see ACETONE							
2-PROPANONE, 1-BROMO-	see BORMOACETONE							
PROPARGITE	NONE	2312358	Y	N	Y	N	N	N
PROPARGYL ACHOHOL	2-PROPYN-1-ol	107197	N	N	Y	Y	N	Y
2-PROPENAMIDE	see ACRYLAMIDE							
PROPENE, 1,3-DICHLORO-	see 1,3-DICHLOROPROPENE							
1-PROPENE, 1,1,2,3,3,3-HEXACHLORO-	see HEXACHLOROPROPENE							
2-PROPENENITRILE	see ACRYLONITRILE							
2-PROPENENITRILE, 2-METHYL-	see METHACRYLONITRILE							
PROPENEOXIDE	see PROPYLENE OXIDE							
2-PROPENOIC ACID	see ACRYLIC ACID							
2-PROPENOIC ACID, ETHYL ESTER	see ETHYL ACRYLATE							
2-PROPENOIC ACID, 2-METHYL-, ETHYL ESTER	see ETHYL METHACRYLATE							
2-PROPENOIC ACID, 2-METHYL-, METHYL ESTER	see METHYL METHACRYLATE							
2-PROPEN-1-OL	see ALLYL ALCOHOL							
PROPIOLACTONE	see beta PROIOLACTONE							
PROPIONIC ACID	PROPANOIC ACID	79094	Y	N	Y	N	N	N
PROPIONIC ACID, 2-(2,4,5-TRICHLOROPHENOXY)	see SILVEX							
PROPIONIC ANHYDRIDE	NONE	123626	Y	N	Y	N	N	N
PROPENYLALCOHOL	see ALLYL ALCOHOL							
n-PROPYLAMINE	see 1-PROPANAMINE							
PROPYLENE DICHLORIDE	see 1,2-DICHLOROPROPANE							
PROPYLENE OXIDE	PROPENEOXID	75569	Y	N	Y	N	N	N
1,2-PROPYLENIMINE	see 2-METHYLAZILLRLIDINE							
PROPYLTHIOURACIL	NONE		N	N	N	N	Y	Y
2-PROPYN-1-OL	see PROPARGYL ALCOHOL							
PYRENE	BENZO(def)PHENANTHRENE	129000	N	Y	Y	N	N	N
PYRETHRINS	NONE	121299	Y	N	Y	N	N	N
		121211						
		8003347						
4-PYRIDINAMINE	see 4-AMINOPYRIDINE							
PYRIDINE	BENZO(b)PYRIDINE; 1-BENZAZINE	110861	N	N	Y	N	N	N
PYRIDINE, 2-[(2-(DIMETHYLAMINO)ETHYL)-2-THENYLAMINO]-	see METHAPYRILENE							
PYRIDINE, HEXAHYDOR-N-NITROSO	see N-NITROSOPIPERIDINE							
PYRIDINE, 2-METHYL	see 2-PICOLINE							
PYRIDINE, (S)-3-(1-METHYL-2-PYRROLIDINYL)-, &SALTS	see NICOTINE AND SALTS							
4(1H)-PYRIMIDINONE,2,3-DIHYDRO-6-METHYL-2-THIOXO-	see METHYLTHIOURACIL							
PYROPHOSPHORIC ACID, TETRAETHYL ESTER	see TETRA ETHYL PYROPHOSPHATE							
PYRROLE, TETRAHYDRO-N-NITROSO	see N-NITROSOPYRROLIDINE							
QUINOLINE	NONE	91225	Y	N	Y	N	N	N
RADIONUCLIDES	NONE		N	N	Y	N	N	N
RESERPINE	YOHIMBAN-16-CARBOXYLIC ACID, 11,17-DIMETHYOXY-18-[(3,4,5-TRIMETHYOXY-BENZOYL)OXY]-METHYL ESTER	50555	N	N	Y	N	Y	Y
RESORCINOL	1,3-BENZENEDIOL; m-HYDROXYPHENOL	108463	Y	N	Y	N	N	N
RUBBER INDUSTRY (CERTAIN COMPOUNDS)			N	N	N	N	Y	N
SACCHARIN AND SALTS	1,2-BENZISOTHIAZOLIN-3-ONE,1,1-DIOXIDE, AND SALTS	81072	N	N	Y	N	Y	Y
SAFROLE	BENZENE, 1,2-METHYLENEDIOXY-4-ALLYL-	94597	N	N	Y	N	Y	Y
SELENIOUS ACID	NONE	7783008	N	N	Y	N	N	N
SELENIUM	NONE	7782492	N	Y	Y	N	N	N
SELENIUM AND COMPOUNDS			N	Y	Y	N	N	N
SELENIUM DIOXIDE	SELENIUM OXIDE	7446084	Y	N	Y	N	N	N
SELENIUM DISULFIDE	SULFUR SELENIDE	7488564	N	N	Y	N	Y	N

CHEMICAL NAME	OTHER PARAMETER NAMES	CASRN	CWA 311(b)(4)	CWA 307(a)	CERCLA 302.4	RCRA 261.33e	USCODE 241b.4	ARS 243D
ESTER								
PHOSPHOROTHIOIC ACID, 0,0'DIETHYL o-PYRAZINYLESTER	see 0,0'DIETHYL o-PYRAZINYL PHOSPHOROTHIOATE							
PHOSPHOROTHIOIC ACID, 0,0-DIMETHYL-0-[p-[(DIMETHYLAMINO)-SULFONYL]PHENYL] ESTER	see FAMPHUR							
PHOPHORUS	NONE							
PHOSPHORUS OXYCHLORIDE	NONE	7723140	Y	N	Y	N	N	N
PHOSPHORUS PENTASULFIDE	see PHOPHORUS SULFIDE	10025873	Y	N	Y	N	N	N
PHOSPHORUS SULFIDE	PHOSPHORUS PENTASULFIDE; SULFUR PHOSPHIDE							
PHOSPHORUS TRICHLORIDE	NONE	1314803	Y	N	Y	N	N	N
PHTHALATE ESTERS		7719122	Y	N	Y	N	N	N
PHTHALIC ANHYDRIDE	1,2-BENZENEDICARBOXYLIC ACID ANHYDRIDE		N	Y	Y	N	N	N
2-PICOLINE	PYRIDINE, 2-METHYL-; ALPHA PICOLINE	85449	N	N	Y	N	N	N
PIRIMOPHOSMETHYL	see ADIPIC ACID	109068	N	N	Y	N	N	N
PLUMBANE, TETRAETHYL	see TETRAETHYL LEAD							
POLYBROMINATED BIPHENYLS								
POLYCHLORINATED BIPHENYLS	AROCLORS		N	N	N	N	Y	Y
	AROCLOR 1016	1336363	N	N	N	N	Y	Y
	AROCLOR 1221	12674112						
	AROCLOR 1232	11104282						
	AROCLOR 1242	11141165						
	AROCLOR 1248	53469219						
	AROCLOR 1254	12672296						
	AROCLOR 1260	11097691						
POLYNUCLEAR AROMATIC HYDROCARBONS		11096825						
POTASSIUM ARSENATE	NONE		N	Y	Y	N	N	N
POTASSIUM ARSENITE	NONE	7784410	Y	N	Y	N	N	N
POTASSIUM BICHROMATE	NONE	10124502	Y	N	Y	N	N	N
POTASSUUUIUM CHROMATE	NONE	7778509	Y	N	Y	N	N	N
POTASSIUM CYANIDE	NONE	7789006	Y	N	Y	N	N	N
POTASSIUM HYDROXIDE	NONE	151508	Y	N	Y	N	N	N
POTASSIUM PERMANGANATE	NONE	1310583	Y	N	Y	N	N	N
POTASSIUM SILVER CYANIDE	NONE	7722647	Y	N	Y	N	N	N
PROCARBAZINE	N-ISOPROPYL-ALPHA-(METHYLHYDRAZINE)-p-TOLUAMIDE	506616	Y	N	Y	N	N	N
PROCARBAZINE, HYDROCHLORIDE	NONE	671167	N	N	N	N	Y	Y
PROGESTERONE	NONE	366701	N	N	N	N	Y	Y
beta-PROIOLACTONE	2-OXETANONE; PROPIOLACTONE; BPL		N	N	N	N	Y	Y
PRONAMIDE	3,5-DICHLORO-N-(1,1-DIMETHYL -2-PROPYNYL)BENZAMIDE		N	N	N	N	Y	Y
1-PROPANAL, 2,3 EPOXY-	see GLYCIDYLALDEHYDE	239505585	N	N	Y	N	N	N
PROPANAL, 2-METHYL-2-(METHYLTHIO)-,0-[(METHYLAMINO)CARBONYL]OXIME	see ALDICARB							
1-PROPANAMINE	n-PROPYLAMINE							
1-PROPANAMINE, N-PROPYL-	see DIPROPYLAMINE	107108	N	N	Y	N	N	N
1-PROPANOL, 2,3-DIBROMO-PHOSPHATE (3:1)	see TRIS(2,3-DIBROMOPROPYL) PHOSPHATE							
1-PROPANOL, 2-METHYL-								
PROPANE, 1,2-DIBROMO-3-CHLORO-	see 1,2-DIBROMO-3-CHLOROPROPANE							
PROPANE, 2-NITRO-	2-NITROPROPANE							
PROPANE, 2,2'-OXYBIS(2-CHLORO-	BIS(2-CHLOROISOPROPYL) ETHER	79469	N	N	Y	N	Y	Y
1,3-PROPANE,SULTONE	1,2-OXATHIOLANE, 2,2-DIOXIDE	108601	N	Y	Y	N	N	N
PROPANEDINITRILE	see MALONONNITRILE	1120714	N	N	Y	N	Y	Y
PROPANENITRILE	see ACETONE CYANOHYDRIN							
PROPANENITRILE, 3-CHLORO-	see 3-CHLOROPROPIONITRILE							
1,3-PROPANETRIOL, TRINITRATE-	see NITROGLYCERINE							
PROPANOIC ACID	see PROPIONIC ACID							

CHEMICAL NAME	OTHER PARAMETER NAMES	CASRN	CWA 311(b)(4)	CWA 307(a)	CERCLA 302.4	RCRA 261.33e	USCODE 241b.4	ARS 243D
OXIRANE, 2-(CHLOROMETHYL)-	see EPICHLOROHYDRIN							
OXYMETHOLONE	17BETA-HYDROXY-2-(HYDROXY METHYLENE)-17GAMMA-METHYL DIHYROTESTOSTERONE	434071	N	N	N	N	Y	Y
PARAFORMALDEHYDE	NONE	30525894	Y	N	Y	N	N	N
PARALDEHYDE	1,3,5-TRIOXANE, 2,4,6-TRIMETHYL	123637	N	N	Y	N	N	N
PARATHION	PHOSPHOROTHIOIC ACID,0,0-DIETHYL O-(P-NITROPHENYL) ESTER	56382	Y	N	Y	Y	N	Y
PENTACHLOROBENZENE	BENZENE, PENTACHLORO	608935	N	N	Y	N	N	N
PENTACHLOROETHANE	ETHANE, PENTACHLORO,; PENTALIN	76017	N	N	Y	N	N	N
PENTACHLORONITROBENZENE	BENZENE, PENTACHLORONITRO; PCNB;	82688	N	N	Y	N	N	N
PENTACHLOROPHENOL	PHENOL, PENTACHOLORO-; PCP; PENTA	87865	Y	Y	Y	N	N	N
1,3-PENTADIENE	see 1-METHYLBUTADIENE							
PENTALIN	see PENTACHLOROETHANE							
PERCHLOROCYCLOPENTADIENE	see 1,3-CYCLOPENTADIENE,1,2,3,4,5,5-HEXACHLORO-							
PHENACETIN	ACETAMIDE, N-(4-ETHOXYPHENYL)-	62442	N	N	Y	N	Y	Y
PHENANTHRENE	NONE	85018	N	Y	Y	N	N	N
PHENAZOPYRIDINE HYDROCHLORIDE	NONE	136403	N	N	N	N	Y	Y
PHENOL	BENZENE, HYDROXY-; CARBOLIC ACID; HYDROXYBENZENE	108952	Y	Y	Y	N	N	N
PHENOL, 2-CHLORO-	see 2-CHLOROPHENOL							
PHENOL, 4-CHLORO-3METHYL-	see 4-CHLORO-m-CRESOL							
PHENOL, 2-CYCLOHEXYL-4,6-DINITRO-	see 4,6-DINITRO-o-CYCLOHEXYLPHENOL							
PHENOL, 2,4-DICHLORO-	see 2,4-DICHLOROPHENOL							
PHENOL, 2,6-DICHLORO-	see 2,6-DICHLOROPHENOL							
PHENOL, 2,4-DIMETHYL-2,4-XYLENOL	see 2,4-DIMETHYLPHENOL							
PHENOL, 2,4-DINITRO-	see 2,4-DINITROPHENOL							
PHENOL, 2,4-DINITRO-6-(1-METHYLPROPYL)-	see DINOSEB							
PHENOL, 2,4-DINITRO-6-METHYL- AND SALTS	see 4,6-DINITRO-o-CRESOL AND SALTS							
PHENOL,4-NITRO-	see p-NITROPHENOL							
PHENOL, PENTACHLORO	see PENTACHLOROPHENOL							
PHENOL, 2,3,4,6-TETRACHLORO-	2,3,4,6-TETRACHLOROPHENOL	58902	N	N	Y	N	N	N
PHENOL, 2,4,5-TRICHLORO-	2,4,5-TRICHLOROPHENOL	95954	Y	N	Y	N	N	N
PHENOL, 2,4,6-TRICHLORO-	2,4,6-TRICHLOROPHENOL	88062	Y	Y	Y	N	N	N
PHENOL, 2,4,6-TRINITRO-AMMONIUM SALT	see AMMONIUM PICRATE							
PHENYL DICHLOROARSINE	see DICHLOROPHENYLARSINE							
1,10-(1,2-PHENYLENE)PYRENE	see INDENO(1,2,3-cd)PYRENE							
PHENYLMERCURIC ACETATE	MERCURY, (ACETATO-O)PHENYL-	62384	N	N	Y	Y	N	Y
N-PHENYLTHIOUREA	THIOUREA,PHENYL	103855	N	N	Y	Y	N	Y
P-PHENYLANILINE	see 4-AMINOBIPHENYL							
PHENYTOIN	5,5-DIPHENYL HYDRANTOIN	57410	N	N	N	N	Y	Y
PHENYLTOIN, SODIUM SALT	NONE		N	N	N	N	Y	Y
PHORATE	PHOSPHORODITHIOIC ACID, 0,0-DIETHYL S-(EHTYLTHIO) METHYL ESTER	298022	N	N	Y	Y	N	Y
PHOSGENE	see CARBONYL CHLORIDE							
PHOSPHINE	HYDROGEN PHOSPHIDE	7803512	N	N	Y	N	N	N
PHOSPHORIC ACID	NONE	7664382	Y	N	Y	N	N	N
PHOSPHORIC ACID, DIETHYL p-NITROPHENYL ESTER	see DIETHYL-p-NITROPHENYL PHOSPHATE							
PHOSPHORIC ACID, LEAD SALT	see LEAD PHOSPHATE							
PHOSPHORODITHIOIC ACID, 0,0' DIETHYL s-METHYLESTER	see 0,0'-DIETHYL s-METHYL DITHIOPHOSPHATE							
PHOSPHORODITHIOIC ACID, 0,0-DIETHYL S-(ETHYLTHIO) METHYL ESTER	see PHORATE							
PHOSPHOROTHIOIC ACID, 0,0-DIMETHYL s-[2(METHYL AMINO)-2-OXOETHYL] ESTER	see DIMETHOATE							
PHOSPHOROFLUORIDIC ACID, bis(1-METHYLETHYL) ESTER	see DIISOPROPYL FLUOROPHOSPHATE							
PHOSPHOROTHIOIC ACID, 0,0-DIETHYL O-(P-NITROPHENYL	see PARATHION							

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5-NITRO-o-ANISIDINE	2-AMINO-5-NITROANIOLE	99592	N	N	N	N	Y	Y
NITROBENZENE	BENZENE, NITRO-	98953	Y	Y	Y	N	N	N
NITROFEN	2,4-DICHLORO-1(4-NITROPHENOXY) BENZENE	1836755	N	N	N	N	Y	Y
NITROGEN DIOXIDE	NITROGEN(IV)OXIDE	10102440	Y	N	Y	N	N	N
		10544726						
NITROGEN MUSTARD	see MELPHALAN							
NITROGEN(II)OXIDE	see NITRIC OXIDE							
NITROGEN(IV)OXIDE	see NITROGEN DIOXIDE							
NITROGYLCERINE	1,2,3-PROPANETRIOL, TRINITRATE-	55630	N	N	Y	N	N	N
NITROPHENOL (MIXED)		25154556	Y	N	Y	N	N	N
m-		554847						
o-	2-NITROPHENOL	88755	Y	Y	Y	N	N	N
p-	4-NITROPHENOL; PHENOL, 4-NITRO-	100027						
p-NITROPHENOL	4-NITROPHENOL; PHENOL, 4-NITRO-	100027	Y	Y	Y	N	N	N
2-NITROPHENOL	o-NITROPHENOL	88755	Y	Y	Y	N	N	N
4-NITROPHENOL	see p-NITROPHENOL							
NITROPHENOLS			N	Y	Y	N	N	N
2-NITROPROPANE	see PROPANE, 2-NITRO-,							
NITROSAMINES			N	Y	Y	N	N	Y
N,N-BIS(2-CHLOROETHYL)-2-NAPHTYLAMINE	CHLORNAPHAZINE	494031	N	N	N	N	Y	Y
N-NITROSOARCOSINE	NONE		N	N	N	N	Y	Y
N-NITROSODI-n-BUTYLAMINE	1-BUTANAMINE, N-BUTYL-N-NITROSO-	924163	N	N	Y	N	Y	Y
N-NITROSODIETHANOLAMINE	ETHANOL, 2,2'-(NITROSOIMINO)BIS-	1116547	N	N	Y	N	Y	Y
N-NITROSODIETHYLAMINE	ENTANAMINE, N--ETHYL-N-NITROSO-	55185	N	N	Y	N	Y	Y
N-NITROSODIMETHYLAMINE	see DIMETHYLNITROSAMINE							
N-NITROSODIPHENYLAMINE	NONE	86306	N	Y	Y	N	N	N
N-NITROSO-n-PROPYLAMINE	see DI-n-PROPYLNITROSAMINE							
N-NITROSO-n-ETHYLUREA	see CARBAMIDE, N-ETHYL-N-NITROSO-,							
N-NITROSO-n-METHYLUREA	see CARBAMIDE, N-METHYL-N-NITROSO-,							
N-NITROSO-n-METHYLURETHANE	see CARBAMIC ACID, METHYLNITROSO-ETHYL ESTER							
N-NITROSOMETHYLVINYLAMINE	ETHENAMINE, N-METHYL-N-NITROSO-	4549400	N	N	Y	Y	Y	Y
N-NITROSOMORPHOLINE	NONE		N	N	N	N	Y	Y
N-NITROSONORNICOTINE	NONE		N	N	N	N	Y	Y
N-NITROSOPIPERIDINE	PYRIDINE, HEXAHYDRO-N-NITROSO	100754	N	N	Y	N	Y	Y
N-NITROSOPYRROLIDINE	PYRROLE, TETRAHYDRO-N-NITROSO-	930552	N	N	Y	N	N	Y
p-NITROSODIPHENYLAMINE	NONE		N	N	N	N	Y	N
NITROTOLUENE m-, o-,p-	NONE	1321126	Y	N	Y	N	N	N
m-		99081						
o-		88722						
p-		99990						
5-NITRO-o-TOLUIDINE	see BENZENAMINE, 2-METHYL- 5-NITRO-							
5-NORBORNENE-2,3-DIMETHANOL,1,4,5,6,7,7-HEXACHLORO CYCLIC SULFITE	see ENDOSUFAN							
NORETHISTERONE	NONE		N	N	N	N	Y	Y
OCTAMETHLYLPYRPPHOS-PHORAMIDE	see DIPHOSPHORAMIDE,OCTAMETHYL							
OSMIUM OXIDE	OSMIUM TETROXIDE	20816120	N	N	Y	N	N	N
OSMIUM TETROXIDE	see OSMIUM OXIDE							
7-OXABICYCLO[2,2,1]HEPTANE-2,3-DICARBOXYLIC ACID	ENDOTHALL	145733	N	N	N	Y	N	Y
1,2-OXATHIOLANE, 2,2-DIOXIDE	see 1,3-PROPANE, SULTONE							
2H-1,3,2-OXAZAPHOSPHORINE,2-[BIS(2-CHLOROETHYL) AMINO]TETRAHYDRO-2-OXIDE	see CYCLOPHOSPHAMIDE							
2-OXETANONE	see beta-PROIOACTONE							
OXIRANE	ETHYLENEOXIDE	75218	N	N	Y	N	Y	Y

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METHYL PARATHION	0,0-DIMETHYL 0-P-NITROPHENYL PHOSPHOROTHIOATE; DIMETHYL PARATHION	298000	Y	N	Y	Y	N	Y
4-METHYL-2-PENTANONE	see METHYL ISOBUTAL KETONE							
METHYL PHENYL KETONE	see ACETOPHENONE							
METHYLTHIOURACIL	4(1H)-PYRIMIDINONE,2,3-DIHYDRO-6-METHYL-2-THIOXO-	56042	N	N	Y	N	N	N
METHYL YELLOW	see 4-DIMETHYLAMINOZOBENZENE							
METRONIDAZOLE	NONE		N	N	N	N	Y	Y
MEVINPHOS	NONE	7786347	Y	N	Y	N	N	N
MEXACARBATE	NONE	315184	Y	N	Y	N	N	N
MICHLER'S KETONE	TETRAMETHYLDIAMINOBENZOPHENONE	90948	N	N	N	N	Y	Y
MIREX	DECHLORANE	2385855	N	N	N	N	Y	Y
MITOMYCIN C	AZIRINO(2',3':3,4)PYRROLO(1,2-A)INDOLE-4,7-DIONE, 6-AMINO-8-[((AMINOCARBONYL)OXY)METHYL]-1,1a,2,8,8a,8b-HEXAHYDRO-8a-METHOXY-5-METHYL-	50077	N	N	Y	N	N	N
MONOETHYLAMINE	NONE	75047	Y	N	Y	N	N	N
MONOMETHYLAMINE	METHYAMINE	74895	Y	N	Y	N	N	N
MUSTARD GAS	1,2-DIBROMO-2,2-DICHLORO-ETHYLDIMETHYLPHOSPHATE	505602	N	N	N	N	Y	Y
NALED	NONE	300765	Y	N	Y	N	N	N
5,12-NAPTHACENEDIONE, (8S cis)-8-ACETYL-10-[AMINO][3-AMINO-2,3,6-TRIEOXY-ALPHA-L-LYOXY-HEXOPYRANOSYL)OXY]-7,8,9,10-TETRAHYDRO-6,8,11-TRIHYDROXY-1-METHOXY-	see DAUNOMYCIN							
NAPHTHALENE	NONE	91203	Y	Y	Y	N	N	N
NAPHTHALENE, 2-CHLORO-	see beta-CHLORONAPHTHALENE							
1,4-NAPHTHALENEDIONE	see 1,4-NAPHTHOQUINONE							
2,7-NAPHTHALENEDISULFONIC ACID,3,3'-[3,3'-DIMETHYL-(1,1'-BIPHENYL)-4,4'-DIYL)-BIS(AZO)]BIS(5-AMINO-4-HYDROXY)-TETRASODIUM SALT	see TRYPAN BLUE							
NAPHTHENIC ACID	NONE	1338245	Y	N	Y	N	N	N
1,4-NAPHTHOQUINONE	1,4-NAPHTHALENEDIONE	130154	N	N	Y	N	N	N
1-NAPHTHYLAMINE	alpha-NAPHTHYLAMINE	134327	N	N	Y	N	N	N
2-NAPHTHYLAMINE	beta-NAPHTHYLAMINE	91598	N	N	Y	N	Y	Y
alpha-NAPHTHYLAMINE	see 1-NAPHTHYLAMINE							
beta-NAPHTHYLAMINE	see 2-NAPHTHYLAMINE							
2-NAPHTHYLAMINE, N,N-BIS(2-CHLOROETHYL)-	see CHLORNAPHAZINE							
alpha-NAPHTHYLTHIOUREA	THIOUREA, 1-NAPHTHALENYL	86884	N	N	Y	Y	N	Y
NICKEL	NONE	7440020	N	Y	Y	N	Y	N
NICKEL AND COMPOUNDS			N	Y	Y	N	Y	N
NICKEL AMMONIUM SULFATE	NONE	15699180	Y	N	Y	N	N	N
NICKEL CARBONYL	NICKEL TETRACARBONYL	13463393	N	N	Y	Y	N	Y
NICKEL CHLORIDE	NONE	7718549	Y	N	Y	N	N	N
NICKEL CYANIDE	NICKEL(11)CYANIDE	37211055						
NICKEL(11)CYANIDE	see NICKEL CYANIDE	557197	N	N	Y	Y	N	N
NICKEL HYROXIDE	NONE							
NICKEL NITRATE	NONE	12054487	Y	N	Y	N	N	N
NICKEL SULFATE	NONE	14216752	Y	N	Y	N	N	N
NICKEL TETRACARBONYL	see NICKEL CARBONYL	7786814	Y	N	Y	N	N	N
NICOTINE AND SALTS	PYRIDINE, (S)-3-(1-METHYL-2-PYRROLIDINYL)-, AND SALTS							
NITIRC ACID	NONE	54115	N	N	Y	N	N	N
NITIRC OXIDE	NITROGEN(11)OXIDE	7697372	Y	N	Y	N	N	N
NITRILOTRIACETIC ACID	NTA; TRIGLYCINE; TGA	10102439	N	N	Y	N	N	N
p-NITROANILINE	see BENZENAMINE, 4-NITRO-	139139	N	N	N	N	Y	Y

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METHANE, DICHLORODIFLUORO-,	see DICHLORODIFLUOROMETHANE							
METHANE, IODO-	see METHYL IODIDE							
METHANE, OXYBIS(CHLORO-	see BIS(CHLOROMETHYL) ETHER							
METHANE, TETRACHLORO-,	see CARBON TETRACHLORIDE							
METHANE, TETRANITRO-,	see TETRANITROMETHANE							
METHANE, TRIBROMO-	see BROMOFORM							
METHANE, TRICHLORO-,	see CHLOROFORM							
METHANE, TRICHLOROFLUORO-,	see TRICHLOROMONOFLUORO-METHANE							
METHANESULFONIC ACID,ETHYL ESTER	see ETHYLLMETHANESULFONATE							
METHANETHIOL	METHYLMECAPTAN; THIOMETHANOL	74931	Y	N	Y	Y	N	N
METHANESULFENYL CHLORIDE, TRICHLORO-,	see TRICHLORMETHANESULFENYL CHLORIDE							
4,7-METHANO-1H-INDENE,1,4,5,6,7,8,8-HEPTACHLORO-3a,4,7,7a-TETRAHYDRO-	see HEPTACHLOR							
METHANOIC ACID	see FORMIC ACID							
4,7-METHANOINDAN, 1,2,4,5,6,7,8,8'-OCTACHLORO-3A,4,7,7a-TETRAHYDRO-,	see CHLORDANE							
METHANOL	METHYL ALCOHOL	6756661	N	N	Y	N	N	N
METHAPYRILENE	PYRIDINE, 2-[(2-(DIMETHYLAMINO)ETHYL)-2-THENYLAMINO]-	91805	N	N	Y	N	N	N
2-METHOANILINE	see o-ANISIDINE							
METHOMYL	see ACETIMIDIC ACID, N-[(METHYLCARBAMOYL)OXY] THIO-							
METHOXSALEN WITH ULTRA VIOLET A THEARPY (PUVA)			N	N	N	N	Y	N
METHOXYCHLOR	ETHANE, 1,1,1-TRICHLORO-2,2-BIS(P-METHOXYPHENYL	72435	Y	N	Y	N	N	N
METHYLAMINE	see MONOMETHYLAMINE							
METHYL ALCOHOL	see METHANOL							
METHYL-o-ANISIDINE	see p-CRESIDINE							
beta-METHYLARCOLIEN	see CROTONALDHYDE							
2-METHYLAZIRIDINE	1,2-PROPYLENIMINE	75558	N	N	Y	Y	N	Y
METHYLAZOXYMETHANOL BETA-d-GLUCOIDE	see CYCASIN							
METHYL BROMIDE	METHANE, BROMO	74839	N	Y	Y	N	N	N
1-METHYLBUTADIENE	1,3-PENTADIENE	504609	N	N	Y	N	N	N
METHYL CHLORIDE	METHANE, CHLORO-	74873	N	Y	Y	N	N	N
METHYL CHLOROCARBONATE	see CARBONOCHLORIDIC ACID, METHYL ESTER							
METHYL CHLOROFORM	1,1,1-TRICHLOROETHANE	71556	N	Y	Y	N	N	N
4,4'-METHYLENEBIS(2-CHLOROANILINE)	BENZENAMINE, 4,4'-METHYLENEBIS (2-CHLORO-	101144	N	N	Y	N	N	N
4,4'-METHYLENEBIS(N,N-DIMETHYL) BENZENAMINE	NONE		N	N	N	N	Y	Y
2,2'-METHYLENEBIS(3,4,6-TRICHLOROPHENOL)	see HEXACHLOROPHENE							
3-METHYLCHOLANTHRENE	see BENZ(J)ACEANTHRYLENE,1,2-DIHYDRO-3-METHYL							
METHYLENE BROMIDE	METHANE, DIBROMO	74953	N	N	Y	N	N	N
METHYLENE CHLORIDE	METHANE, DICHLORO-	75092	N	Y	Y	N	N	N
4,4'-METHYLENEDIANILINE AND ITS DIHYDROCHLORIDE	see 4,4' DIAMINODIPHENYLMETHANE							
METHYLENE OXIDE	see FORMALDEHYDE							
METHYL ETHYL KETONE	see 2-BUTANONE							
METHYL ETHYL KETONE PEROXIDE	see 2-BUTANONE PEROXIDE							
METHYL HYDRAZINE	see HYDRAZINE, METHYL							
METHYL IODIDE	METHANE, IODO-	74884	N	N	Y	N	Y	Y
METHYL ISOBUTYL KETONE	4-METHYL-2-PENTANONE	108101	N	N	Y	N	N	N
METHYL ISOCYANATE	see ISOCYANIC ACID, METHYL ESTER							
2-METHYLLACTONITRILE	see ACETONE CYANOHYDRIN							
METHYLMECAPTAN	see METHANETHIOL							
METHYL METHACRYLATE	2-PROPENONIC ACID, 2-METHYL-,METHYL ESTER	80626	Y	N	Y	N	N	N
6-[(1-METHYL-4-NITRO-1H-IMIDAZOL-5-YL)THIO]-1H-PURINE	see AZATHIOPRINE							
N-METHYL-N'-NITRO-N-NITROGUANIDINE	see GUANIDINE, N-NITROSO-N-METHYL-N'-NITRO							

CHEMICAL NAME	OTHER PARAMETER NAMES	CASRN	CWA 311(b)(4)	CWA 307(a)	CERCLA 302.4	RCRA 261.33e	USCODE 241b.4	ARS 243D
3(2H)- ISOXAZOLONE, 5-(AMINOMETHYL)-	see 5-(AMINOMETHYL)-3-ISOAZOLOL							
KELTHANE	NONE	115322	Y	N	Y	N	N	N
KEPONE	DECACHLOROOCTAHYDRO-1,3,4-METHANO-2H-CYCLOBUTA[c,d]-PENTALEN-2-ONE	143500	Y	N	Y	N	Y	Y
LASIOCARPINE	NONE	303344	N	N	Y	N	N	N
LEAD	NONE	7439921	N	Y	Y	N	N	N
LEAD ACETATE	see ACETIC ACID, LEAD SALT							
LEAD AND COMPOUNDS			N	Y	Y	N	N	N
LEAD ARSENATE	NONE	7784409 7645525 10102484	Y	N	Y	N	N	N
LEAD CHLORIDE	NONE	7758954	Y	N	Y	N	N	N
LEAD FLUOBORATE	NONE	13814965	Y	N	Y	N	N	N
LEAD FLUORIDE	NONE	7783462	Y	N	Y	N	N	N
LEAD IODIDE	NONE	10101630	Y	N	Y	N	N	N
LEAD NITRATE	NONE	10099748	Y	N	Y	N	N	N
LEAD PHOSPHATE	PHOSPHORIC ACID, LEAD SALT	7446277	N	N	Y	N	Y	N
LEAD STEARATE	NONE	7428480 1072351 52652592 56189094	Y	N	Y	N	N	N
LEAD SUBACETATE	NONE	1335326	N	N	Y	N	N	N
LEAD SUFLATE	NONE	15739807 7446142	Y	N	Y	N	N	N
LEAD SULFIDE	NONE	1314870	Y	N	Y	N	N	N
LEAD THIOCYANATE	NONE	592870	Y	N	Y	N	N	N
LINDANE	see gamma-BHC							
LITHIUM CHROMATE	NONE	14307358	Y	N	Y	N	N	N
MALATHION	NONE	121755	Y	N	Y	N	N	N
MALEIC ACID	NONE	110167	Y	N	Y	N	N	N
MALEIC ANHYDRIDE	2,5-FURANDINE	108316	Y	N	Y	N	N	N
MALEIC HYDRAZIDE	1,2-DIHYDRO-3,6-PYRIDAZINEDIONE	123331	N	N	Y	N	N	N
MALONONITRILE	PROPANEDINITRILE	109773	N	N	Y	N	N	N
MELPHALAN	ALANINE,3,-[P[BIS(2-CHLOROETHYL)AMINO] PHENYL-,L-	148823	N	N	Y	N	Y	Y
MERCAPTODIMETHUR	NONE	2032657	Y	N	Y	N	N	N
MERCURIC CYANIDE	NONE	592041	Y	N	Y	N	N	N
MERCURIC NITRATE	NONE	10045940	Y	N	Y	N	N	N
MERCURIC SULFATE	NONE	8873359	Y	N	Y	N	N	N
MERCURIC THIOCYANATE	NONE	592858	Y	N	Y	N	N	N
MERCUROUS NITRATE	NONE	10415755	Y	N	Y	N	N	N
MERCURY	NONE	7439976	N	Y	Y	N	N	N
MERCURY AND COMPOUNDS	NONE		N	Y	Y	N	N	N
MERCURY, (ACETATO-O)PHENYL	see PHENYLMERCURIC ACETATE							
MERCURY FULMINATE	see FULMINIC ACID, MERCURY (II)SALT							
MESTRANOL	NOT CONJUGATED ESTROGEN		N	N	N	N	Y	Y
METHACRYLONITRILE	2-PROPENENITRILE, 2-METHYL-	126987	N	N	Y	N	N	N
METHANAMINE, N-METHYL-	see DIMETHYLAMINE							
METHANE, BROMO-	see METHYL BROMIDE							
METHANE CARBOXYLIC ACID	see ACETIC ACID							
METHANE, CHLORO-	see METHYL CHLORIDE							
METHANE, CHLOROMETHOXY	see CHLOROMETHYL METHYL ETHER							
METHANE, DIBROMO-	see METHYLENE BROMIDE							
METHANE, DICHLORO-	see METHYLENE CHLORIDE							

CHEMICAL NAME	OTHER PARAMETER NAMES	CASRN	CWA 311(b)(4)	CWA 307(a)	CERCLA 302.4	RCRA 261.33e	USCODE 241b.4	ARS 2430
DIMETHANONAPHTHALENE								
1,2,3,4,10,10-HEXACHLORO-6,7-EPOXY-1,4,4a,5,6,7,8, 8a-OCTAHYDRO-ENDO EXO-1,4:5,8-DIMETHANONAPHTHALENE	see DIELDRIN							
HEXACHLOROETHANE	ETHANE, 1,1,1,2,2,2-HEXACHLORO-	67721	N	Y	Y	N	N	N
HEXACHLOROHEXAHYDRO-ENDO,ENDO DIMETHANONAPHTHALENE	1,2,3,4,10-10-HEXACHLORO-1,4,4a,5,8,8a-HEXAHYDRO-1,4:5,8-ENDO, ENDO DIMETHYANOPHTHALENE	465736	N	N	Y	Y	N	Y
1,2,3,4,10-10-HEXACHLORO-1,4,4a,5,8,8a-HEXAHYDRO-1,4:5,8-ENDO, ENDO DIMETHYANOPHTHALENE	see HEXACHLOROHEXAHYDRO-ENDO,ENDO DIMETHANONAPHTHALENE							
1,2,3,4,10-10-HEXACHLORO-1,4,4a,5,8,8a-HEXAHYDRO-1,4:5,8-ENDO, EXO DIMETHYANOPHTHALENE	see ALDRIN							
HEXACHLOROPHENE	2,2'-METHYLENEBIS(3,4,6-TRICHLOROPHENOL)	70304	N	N	Y	N	N	N
HEXACHLOROPROPENE	1,-PROPENE, 1,1,2,3,3,3-HEXACHLORO-	1888717	N	N	Y	N	N	N
HEXAETHYL TETRAPHOSPHATE	TETRAPHOSPHORIC ACID, HEXAETHYL ESTER	757584	N	N	Y	Y	N	Y
HEXAMETHYLPHOSPHORAMIDE	see HEXAMETHYLPHOSPHORIC TRIAMIDE							
HEXAMETHYLPHOSPHORIC TRIAMIDE	HEXAMETHYLPHOSPHORAMIDE							
HYDRAZINE	see DIAMINE	680319	N	N	N	N	Y	Y
HYDRAZINE, 1,2-DIETHYL-	see N-N'DIETHYLHYDRAZINE							
HYDRAZINE, 1,1-DIMETHYL-	see 1,1-DIMETHYLHYDRAZINE							
HYDRAZINE, 1,2-DIMETHYL-	see 1,2-DIMETHYLHYDRAZINE							
HYDRAZINE, 1,2-DIPHENYL-	see 1,2-DIPHENOLHYDRAZINE							
HYDRAZINE, METHYL	METHYL HYDRAZINE							
HYDRAZINECARBOTHIOAMIDE	THIOSEMICARBAZIDE	60344	N	N	Y	Y	N	Y
HYDRAZOBENZENE	see 1,2-DIPHENOLHYDRAZINE	79196	N	N	Y	Y	N	Y
1,8-HYDROACENAPHTHYLENE	ACENAPHTHENE; ETHYLENEAPHTHALENE							
HYDROCHLORIC ACID	NONE	83329	N	Y	Y	N	N	N
HYDROCYANIC ACID	HYDROGEN CYANIDE	7647010	Y	N	Y	N	N	N
HYDROFLUORIC ACID	HYDROGEN FLUORIDE	74908	Y	N	Y	Y	N	N
HYDROGEN CYANIDE	see HYDROCYANIC ACID	7664393	Y	N	Y	N	N	N
HYDROGEN FLUORIDE	see HYDROFLUORIC ACID							
HYDROGEN PHOSPHIDE	see PHOSPHINE							
HYDROGEN SULFIDE	HYDROSULFURIC ACID; SULFUR HYDRIDE	7783064	Y	N	Y	N	N	N
HYDROPEROXIDE, 1-METHYL-1-PHENYLETHYL-	alpha,alpha-DIMETHYLBENZYLHYDRO-PEROXIDE	80159	N	N	Y	N	N	N
HYDROSULFURIC ACID	see HYDROGEN SULFIDE							
HYDROXYBENZENE	see PHENOL							
14-HYDROXYDAUNOMYCIN	see ADRIAMYCIN							
HYDROXYDIMETHYLARSINE OXIDE	see CACODYLIC ACID							
17 beta-HYDROXY-2-(HYDROXYMETHYLENE)-17gamma-METHYLDIHYDROTESTOOSTERONE	see OXYMETHOLONE							
2-HYDROXY-2-METHYL	see ACETONE CYANOHYDRIN							
m-HYDROXYPHENOL	see RESORCINOL							
2-IMIDAZOLIDINETHIONE	see ETHYLENETHIOUREA							
INDENO(1,2,3-cd)PYRENE	1,10-(1,2-PHENYENE)PYRENE							
IRON DEXTRAN	FERRIC DEXTRAN	193395	N	Y	Y	N	Y	Y
ISOBUTYL ALCOHOL	1-PROPANOL, 2-METHYL-	9004664	N	N	Y	N	Y	Y
ISOCYANIC ACID, METHYL ESTER	METHYL ISOCYANATE	78831	N	N	Y	N	N	N
ISOPHORONE	NONE	624839	N	N	Y	Y	N	N
ISOPRENE	NONE	78591	N	Y	Y	N	N	N
ISOPROPANOLAMINE DODECYLBENZENESULFONATE	NONE	78795	Y	N	Y	N	N	N
ISOPROPYL ALCOHOL MANUFACTURE (STRONG ACID PROCESS		42504461	Y	N	Y	N	N	N
ISOPROPYLBENZENE	see CUMENE		N	N	N	N	Y	N
N- ISOPROPYL-alpha-(METHYHLHYDRAZINE)-p-TOLUAMIDE	see PROCARBAZINE							
ISOSAFROLE	BENZENE, 1,2-METHYLENEDIOXY-4-PROPENYL	120581	N	N	Y	N	N	N

CHEMICAL NAME	OTHER PARAMETER NAMES	CASRN	CWA 311(b)(4)	CWA 307(a)	CERCLA 302.4	RCRA 261.33e	USCODE 241b.4	ARS 243D
ETHYLENETRICHLORIDE	see TRICHLOROETHENE							
ETHYLENIMINE	see AZIRIDINE							
ETHYL ETHER	ETHANE, 1,1"-OXYBIS	60297	N	N	Y	N	N	N
ETHYLIDENE DICHLORIDE	see 1,1-DICHLOROETHANE							
ETHYL METHACRYLATE	2-PROPENOIC ACID, 2-METHYL-,ETHYL ESTER	97632	N	N	Y	N	N	N
ENTYLMETHANESULFONATE	METHANESULFONIC ACID, ETHYL ESTER	62500	N	N	Y	N	N	N
FAMPHUR	PHOSPHOROTHIOIC ACID, 0,0-DIMETHYL-0-[p-[(DIMETHYLAMINO)-SULFONYL]PHENYL] ESTER	52857	N	N	Y	Y	N	Y
FERRIC AMMONIUM CITRATE	NONE	1185575	Y	N	Y	N	N	N
FERRIC AMMONIUM OXALATE	NONE	2944674 65488874	Y	N	Y	N	N	N
FERRIC CHLORIDE	NONE	7705080	Y	N	Y	N	N	N
FERRIC DEXTRAN	see IRON DEXTRAN							
FERRIC FLUORIDE	NONE	7783508	Y	N	Y	N	N	N
FERRIC NITRATE	NONE	10421484	Y	N	Y	N	N	N
FERRIC SULFATE	NONE	10028225	Y	N	Y	N	N	N
FERROUS AMMONIUM SULFATE	NONE	10045893	Y	N	Y	N	N	N
FERROUS CHLORIDE	NONE	7758943	Y	N	Y	N	N	N
FERROUS SULFATE	NONE	7720787 7782630	Y	N	Y	N	N	N
FLUOROACETIC ACID, SODIUM SALT	see ACETIC ACID, FLUORO-, SODIUM SALT							
FLUORANTHENE	BENZO[j,k]FLUORENE	206440	N	Y	Y	N	N	N
FLUORENE	NONE	86737	N	Y	Y	N	N	N
FLUORINE	NONE	7782414	N	N	Y	N	N	N
FLUOROACETAMIDE	see ACETAMIDE, 2-FLUORO-							
FORMALDEHYDE	METHYLENE OXIDE	50000	Y	N	Y	N	Y	Y
FORMIC ACID	METHANOIC ACID	64186	Y	N	Y	N	N	N
FULMINIC ACID, MERCURY(II)SALT	MERCURY FULMINATE	628864	N	N	Y	Y	N	Y
FULMARIC ACID	NONE	110178	Y	N	Y	N	N	N
FURAN	FURFURAN	110009	N	N	Y	N	N	N
FURAN, TETRAHYDRO-	see TETRAHYDROFURAN							
2,5-FURANDINE	see MALEIC ANHYDRIDE							
FURFURAL	2-FURANCARBOXALDHYDE	98011	Y	N	Y	N	N	N
FURFURAN	see FURAN							
D-GLUCOPYRANOSE, 2-DEOXY-2-(3-METHYL-3-NITROSOUREIDO)-,	see STREPTOZOCIN							
GLYCIDYLALDEHYDE	1-PROPANAL,2,3-EPOXY-	765344	N	N	Y	N	N	N
GUANIDINE, N-NITROSO-N-METHYL-N'-NITRO-	N-METHYL-N'-NITRO-N-NITROGUANIDINE	70257	N	N	Y	N	N	N
GUTHION	NONE	86500	Y	N	Y	N	N	N
HALOETHERS	NONE		N	Y	Y	N	N	N
HALOMETHANES	NONE		N	Y	Y	N	N	N
HEMATITE UNDERGROUND MINING			N	N	N	N	Y	
HEPTACHLOR	4,7-METHANO-1H-INDENE,1,4,5,6,7,8,8-HEPTACHLORO-3a,4,7,7a-TETRAHYDRO-	76448	Y	Y	Y	Y	N	Y
HEPTACHLOR AND METABOLITES			N	Y	Y	N	N	N
HEXACHLORCYCLHEXANE (GAMMA ISOMER)	see gamma-BHC							
HEPTACHLOR EPOXIDE	NONE	1024573	N	Y	Y	N	N	N
HEXACHLOROBENZENE	BENZENE, HEXACHLORO-	118741	N	Y	Y	N	Y	Y
HEXACHLOROBUTADIENE	see 1,3-BUTADIENE, 1,1,2,3,4,4-HEXACHLORO-							
HEXACHLOROCYCLOHEXANE (ALL ISOMERS)		608731	N	Y	Y	N	N	N
HEXACHLOROCYCLOPENTADIENE	see 1,3-CYCLOPENTADIENE,1,23,4,5,5-HEXACHLORO-							
1,2,3,4,10,10-HEXACHLORO-6,7-EPOXY-1,4,4a,5,6,7,8,8a-OCTAHYDRO-ENDO, ENDO-1,4:5,8-	see ENDRIN							

CHEMICAL NAME	OTHER PARAMETER NAMES	CASRN	CWA 311(b)(4)	CWA 307(a)	CERCLA 302.4	RCRA 261.33e	USCODE 241b.4	ARS 243D
ESTRONE	NOT CONJUGATED ESTROGEN		N	N	N	N	Y	Y
ETHANAL	ACETALDEHYDE; ETHYLALDEHYDE	75070	Y	N	Y	N	N	N
ETHANAMINE, 1,1DIMETHYL-2PHENYL	see alpha,alpha-DIMETHYLPHENETHYLAMINE							
ETHANAMINE,N-ETHYL-N-NITROSO-	see N-NITROSODIETHYLAMINE							
1,2-ETHANEDIAMINE	see ETHYLENEDIAMINE							
ETHANE, 1,2-DIBROMO-	see ETHYLENE DIBROMIDE							
ETHANE, 1,1-DICHLORO-	see 1,1-DICHLOROETHANE							
ETHANE, 1,2-DICHLORO-	see 1,2-DICHLOROETHANE							
ETHANE, 1,1,1,2,2,2,-HEXACHLORO-	see HEXACHLOROETHANE							
ETHANE, 1,1'-[METHYLENEBIS(OXY)] BIS(2-CHLORO-	see BIS(2-CHLOROTHOXY) METHANE							
ETHANE, 1,1'-OXYBIS	see ETHYL ETHER							
ETHANE, 1,1'-OXYBIS(2-CHLORO-	see BIS(2-CHLOROETHYL) ETHER							
ETHANE, PENTACHLORO-	see PENTACHLORETHANE							
ETHANE, 1,1,1,2-TETRACHLORO-	1,1,1,2-TETRACHLOROETHANE	630206	N	N	Y	N	N	N
ETHANE, 1,1,2,2-TETRACHLORO-	1,1,2,2-TETRACHLOROETHANE	79345	N	Y	Y	N	N	N
ETHANE, 1,1,2-TRICHLORO-	1,1,2-TRICHLOROETHANE	79005	N	Y	Y	N	N	N
ETHANE, 1,1,1-TRICHLORO-2,2-BIS(P-METHOXYPHENYL	see METHOXYCHLOR							
1,2-ETHANEDIYLBISCARBAMODITHIOIC ACID	see ETHYLENEBIS DITHIOCABAMIC ACID							
ETHANENITRILE	see ACETONITRILE							
ETHANETHIOAMIDE	THIOACETAMIDE	62555	N	N	Y	N	Y	Y
ETHANIC ACID	see ACETIC ACID							
ETHANOL,2,2'-(NITROSOIMINO) BIS	see N-NITROSODIETHANOLAMINE							
ETHANONE, 1-PHENYL	see ACETOPHENONE							
ETHANOYL CHLORIDE	see ACETYL CHLORIDE							
ETHENAMINE, N-METHYL-N-NITROSO-	see N-NITROSOMETHYLVINYLAMINE							
ETHENE, CHLORO-	see VINYL CHLORIDE							
ETHENE,2-CHLOROETHOXY	see 2-CHLOROETHYL VINYL ETHER							
ETHENE, 1,1-DICHLORO-	see 1,1-DICHLOROETHYLENE							
ETHENE,1,1,2,2-TETRACHLORO-	see TETRACHLOROETHYLENE							
ETHENE, trans-1,2-DICHLORO	see 1,2-TRANS-DICHLOROETHYLENE							
ETHENYLETHANOTE	see VINYL ACETATE							
ETHINYLESTRADIOL	NOT CONJUGATED ESTROGEN		N	N	N	N	Y	Y
ETHION	NONE	563122	Y	N	Y	N	N	N
2-ETHOXYETHANOL	see ETHYLENE GLYCOL MONOETHYL ETHER							
ETHYL ACETATE	see ACETIC ACID ETHYL ESTER							
ETHYL ACRYLATE	2-PROPENOIC ACID, ETHYL ESTER	140885	N	N	Y	N	N	N
ETHYLALDEHYDE	ACETALDEHYDE; ETHANAL	75070	Y	N	Y	N	N	N
ETHYLBENZENE	NONE	100414	Y	Y	Y	N	N	N
ETHYLCARBAMATE (URETHAN)	see CARBAMIC ACID, ETHYL ESTER							
ETHYL CYANIDE	PROPANENITRILE	107120	N	N	Y	Y	N	Y
ETHYL 4,4'-DICHLOROBENZILATE	BENZENEACETIC ACID, 4-CHLORO-ALPHA-(4-CHLOROPHENYL)-ALPHA-HYDROXY-, ETHYL ESTER	510156	N	N	Y	N	N	N
ETHYLENEAPHTHALENE	ACENAPHTHENE; 1,8-HYDROACENAPHTHYLENE	83329	N	Y	Y	N	N	N
ETHYLENE BROMIDE	see 1,2-DIBROMOMETHANE							
ETHYLENE DIBROMIDE	ETHANE, 1,2-DIBROMO-	106934	Y	N	Y	N	N	N
ETHYLENE DICHLORIDE	see 1,2-DICHLOROETHANE							
ETHYLENEOXIDE	see OXIRANE							
ETHYLENEBIS (DITHIOCARBAMIC ACID	1,2-ETHANEDIYLBISCARBAMODITHIOIC ACID	111546	N	N	Y	N	N	N
ETHYLENEBISIMINODIACETIC ACID	see ETHYLENDIAMINE TETRAACETUC ACID							
ETHYLENEDIAMINE	DIAMINOETHANE; 1,2-ETHANEDIAMINE	107153	Y	N	Y	N	N	N
ETHYLENEDIAMINE TETRAACETIC ACID (EDTA)	EDTA; ETHYLENEBISIMINODIACETIC ACID	60004	Y	N	Y	N	N	N
ETHYLENE GLYCOL MONOETHYL ETHER	2-ETHOXYETHANOL	110805	N	N	Y	N	N	N
ETHYLENETHIOUREA	2-IMIDAZOLIDINETHIONE	96457	N	N	Y	N	Y	Y

CHEMICAL NAME	OTHER PARAMETER NAMES	CASRN	CWA 311(b)(4)	CWA 307(a)	CERCLA 302.4	RCRA 261.33e	USCODE 241b.4	ARS 243D
ALPHA, ALPHA- DIMETHYLPHENETHYLAMINE	ETHANAMINE, 1,1-DIMETHYL-2PHENYL	122098	N	N	Y	Y	N	Y
2,4-DIMETHYLPHENOL	PHENOL, 2,4-DIMETHYL; 2,4-XYLENOL	105679	N	Y	Y	N	N	N
DIMETHYL PHTHALATE	1,2-BENZENEDICARBOXYLIC ACID, DIMETHYL ESTER	131113	N	Y	Y	N	N	N
DIMETHYL SULFATE	SULFURIC ACID, DIMETHYL ESTER	7781	N	N	Y	N	Y	Y
DINITROBENZENE (MIXED)	NONE	25154545	Y	N	Y	N	N	N
m-		99650						
o-		528290						
p-		100254						
4,6-DINITRO-o CRESOL AND SALTS	PHENOL, 2,4-DINITRO-6-METHYL- AND SALTS	534521	N	Y	Y	Y	N	Y
4,6-DINTRO-o-CYCLOHEXYLPHENOL	PHENOL, 2-CYCLOHEXYL-4,6-DINITRO-	131895	N	N	Y	Y	N	Y
DINITROPHENOL	NONE	25550587	Y	N	Y	N	N	N
2,5-		329715						
2,6-		573568						
2,4-DINITROPHENOL	PHENOL, 2,4-DINITRO-	51285	Y	Y	Y	Y	N	Y
DINITROTOLUENE	NONE	25321146	Y	Y	Y	N	N	N
3,4-		610399						
2,4-DINITROTOLUENE	see BENZENE, 1-METHYL-2,6-DINITRO-							
2,6-DINITROTOLUENE	see BENZENE, 1-METHYL-2,6-DINITRO-							
DINOSEB	PHENOL, 2,4-DINITRO-6-(1-METHYLPROPYL)-	88857	N	N	Y	Y	N	Y
DI-OCTYLPHTHATE	see DI(2-ETHYLHEXLY) PHTHATE							
DI-n-OCTYL PHTHALATE	1,2-BENZENEDICARBOXYLIC ACID, DI-N-OCTYL ESTER	117840	N	Y	Y	N	N	N
1,4-DIOXANE	see 1,4-DIETHYLENE DIOXIDE							
5,5-DIPHENYL HYDRANTOIN	see PHENYTOIN							
DIPHENYLHYDRAZINE	NONE		N	Y	Y	N	N	N
1,2-DIPHENYLHYDRAZINE	HYDRAZINE, 1,2-DIPHENYL; HYDRAZOBENZENE	122667	N	Y	Y	N	N	N
DIPHOSPHORAMIDE,OCTAMETHYL-	OCTAMETHYLPYROPHOS-PHORAMIDE	152169	N	N	Y	Y	N	Y
DIPROPYLAMINE	1-PROPANAMINE, N-PROPYL-	142847	N	N	Y	N	N	N
DI-n-PROPYLNITROSAMINE	N-NITROSODI-n-PROPYLAMINE	621647	N	Y	Y	N	N	N
DIQUAT		85007	Y	N	Y	N	N	N
		2764729						
DIRECT BLACK 38	NONE		N	N	N	N	Y	Y
DIRECT BLUE 6	SODIUMDIPHENYL-4,4'-BIS-AZO-2",8"-AMINO-1"-NAPTHOL-3",6"DISULFONATE		N	N	N	N	Y	Y
DISULFOTON	O,O-DETHYL-S-[2-(ETHYLTHIO)ETHYL]PHOSPHORODITHIOATE	298044	Y	N	Y	Y	N	Y
2,4-DITHIOBIURET	THIOMIDODICARBONIC DIAMIDE	541537	N	N	Y	Y	N	Y
DITHIOPYROPHOSPHORIC ACID, TETRAETHYL ESTER	TETRAETHYLDITHIOPYROPHOSPHATE	3689245	N	N	Y	Y	N	Y
DIURON	3-(3,4-DICHLOROPHENYL)-1,1-DIMETHYUREA	330541	Y	N	Y	N	N	N
DODECYLBENZENESULFONIC ACID	NONE	27176870	Y	N	Y	N	N	N
DOXORUBICIN	see ADRIAMYCIN							
ENDOSULFAN	5-NORBORNENE-2,3-DIMETHANOL,1,4,5,6,7,7-HEXACHLORO, CYCLIC SULFITE	115297	Y	Y	Y	Y	N	Y
alpha-ENDOSULFAN	NONE	959988	N	Y	Y	N	N	N
beta-ENDOSULFAN	NONE	33213659	N	Y	Y	N	N	N
ENDOSULFAN AND METABOLITES			N	Y	Y	N	N	N
ENDOSULFAN SULFATE	NONE	1031078	N	Y	Y	N	N	N
ENDOTHALL	7-OXABICYCLO[2,2,1] HEPTANE-2,3-DICARBOXYLIC ACID	145733	N	N	Y	Y	N	Y
ENDRIN	1,2,3,4,10,10-HEXACHLORO-6,7-EPOXY-1,4,4a,5,6,7,8,8a-OCTAHYDRO-ENDO, ENDO-1,4:5,8-DIMETHANONAPHTHALENE	72208	Y	Y	Y	Y	N	Y
ENDRIN ALDEHYDE	NONE	7421934	N	Y	Y	N	N	N
ENDRIN AND METABOLITIES	NONE		N	Y	Y	N	N	N
EPICHLOROHYDRIN	1-CHLORO-2,3-EPOXYPROPANE; OXIRANE, 2-(CHLOROMETHYL)-	106898	Y	N	Y	N	Y	Y
EPINEPHRINE	1,2-BENZENEDIOL, 4-[1-HYDOXY -2-(METHYLAMINO_ETHYL]-	51434	N	N	Y	Y	N	Y
ESTRADIOL 17B	NOT CONJUGATED ESTROGEN		N	N	N	N	Y	Y

CHEMICAL NAME	OTHER PARAMETER NAMES	CASRN	CWA 311(b)(4)	CWA 307(a)	CERCLA 302.4	RCRA 261.33e	USCODE 241b.4	ARS 243D
2,6-DICHLOROPHENOL	PHENOL, 2,6-DICHLORO	87650	N	N	Y	N	N	N
2,4-DICHLOROPHENOXYACETIC ACID, SALTS AND ESTERS	see 2,4-D ACID							
DICHLOROPHENYLARSINE	PHENYL DICHLOROARSINE	696286	N	N	Y	Y	N	Y
'3-(3,4-DICHLOROPHENYL)1,1-DIMETHYUREA	see DIURON							
DICHLOROPROPANE	NONE	26638197	Y	N	Y	N	N	N
1,1-DICHLOROPROPANE		78999						
1,3-DICHLOROPROPANE		142289						
1,2- DICHLOROPROPANE	PROPYLENE DICHLORIDE	78875	Y	Y	Y	N	N	N
DICHLOROPROPENE-DICHLOROPROPENE MIXTURE		8003198	Y	N	Y	N	N	N
DICHLOROPROPENE(S)	NONE	26952238	Y	N	Y	N	N	N
2,3-DICHLOROPROPENE (ISOMERS)		78886						
1,3-DICHLOROPROPENE	PROPENE, 1,3-DICHLORO	542756	Y	Y	Y	N	N	N
2,2-DICHLOROPROPIONIC ACID SODIUM SALT	DPA; BASFAPON	75990	Y	N	Y	N	N	N
DICHLOROVINYLDIMETHYLPHOSPHATE	see DICHLORVOS							
DICHLORVOS	DICHLOROVINYLDIMETHYLPHOSPHATE	62737	Y	N	Y	N	N	N
DIELDRIN	1,2,3,4,10,10-HEXACHLORO-6,7-EPOXY-1,4,4a,5,6,7,8,8a-OCTAHYDRO-ENDO, EXO-1,4:5,8-DIMETHANONAPHTHALENE	60571	Y	Y	Y	Y	N	Y
DIEPOXYBUTANE	BUTADIENE DIOXIDE; DEB	1464535	N	N	N	N	Y	Y
1,2:3,4-DIEPOXYBUTANE	2,2'-BIOXIRANE	1464535	N	N	Y	N	N	N
DIETHYLAMINE	NONE	109897	Y	N	Y	N	N	N
DIETHYLARSINE	see ARSINE DIETHYL							
1,4-DIETHYLENE DIOXIDE	1,4-DIOXANE	123911	N	N	Y	N	N	N
N-N'DIETHYLHYDRAZINE	HYDRAZINE, 1,2-DIETHYL-	1615801	N	N	Y	N	N	N
O,O-DIETHYL-S-[2-(ETHYLTHIO)ETHYL] PHOPHORODITHIOATE	see DISULFOTON							
O,O'-DIETHYL S-METHYL DITHIOPHOSPHATE	PHOSPHORODITHIOIC ACID, O,O-DIETHYL S-METHYLESTER	3288582	N	N	Y	N	N	N
DIETHYL-p-NITROPHENYL PHOSPHATE	PHOSPHORIC ACID, DIETHYL p-NITROPHENYL ESTER	311455	N	N	Y	Y	N	Y
DIETHYL PHTHALATE	1,2-BENZENEDICARBOXYLIC ACID,DIETHYL ESTER	84662	N	Y	Y	N	N	N
O,O-DIETHYL O-PYRAZINYL PHOSPHOROTHIOATE	PHOSPHOROTHIOIC ACID, O,O-DIETHYL O-PYRAZINYL ESTER	297972	N	N	Y	Y	N	Y
DIETHYLSTILBESTROL	4,4'STILBENEDIOL,ALPHA,ALPHA'-DIETHYL-	56531	N	N	Y	N	Y	Y
DI(2-ETHYLHEXYL) PHTHALATE	DI-OCTYLPHTHATE; DOP; DEHP	117817	N	N	N	N	Y	N
DIETHYL SULFATE	NONE		N	N	N	N	Y	N
1,2-DIHYDRO-3,6-PYRIDAZINEDIONE	see MALEIC HYDRAZIDE							
DIHYDROSAFROLE	BENZENE, 1,2-METHYLENEDIOXY-4-PROPYL	94586	N	N	Y	N	N	N
DIISOPROPYL FLUOROPHOSPHATE	PHOSPHOROFLUORIDIC ACID, BIS(1-METHYLETHYL)ESTER	55914	N	N	Y	Y	N	Y
DIMETHOATE	PHOSPHORODITHIOIC ACID, O,O-DIMETHYL S-[2(METHYLAMINO)-2-OXOETHYL] ESTER	60515	N	N	Y	Y	N	Y
3,3'-DIMETHOXYBENZIDINE	(1,1'-BIPHENYL)-4,4'DIAMINE,3,3'DIMETHOXY	119904	N	N	Y	N	Y	Y
DIMETHYLAMINE	METHANAMINE, N-METHYL-	124403	Y	N	Y	N	N	N
DIMETHYLAMINOAZOBENZENE	see BENZENAMINE, N,N-DIMETHYL-4-PHENYLAZO-							
4-DIMETHYLAMINOAZOBENZENE	METHYL YELLOW; BUTTER YELLOW	60117	N	N	N	N	Y	Y
7,12-DIMETHYLBENZ[a]ANTHRACENE	see 1,2-BENZANTHRACENE, 7,12-DIMETHYL-	57976						
3,3'-DIMETHYLBENZIDINE	(1,1'BIPHENYL)-4,4'-DIAMINE,3,3'-DIMETHYL	119937	N	N	Y	N	Y	Y
alpha,alpha-DIMETHYLBENZLHYDROPEROXIDE	HYDROPEROXIDE, 1-METHYL- 1-PHENYLETHYL-	80159	N	N	Y	N	N	N
3,3-DIMETHYLL-1-(METHYLTHIO)-2-[(METHYLAMINO) CARBONYL]OXIME	see THIOFANOX							
DIMETHYLCARBAMOYLCHLORIDE	see CARBOMOYL CHLORIDE, DIMETHYL							
1,1-DIMETHYLHYDRAZINE	HYDRAZINE,1,1-DIMETHYL-	57147	N	N	Y	N	Y	Y
1,2-DIMETHYLHYDRAZINE	HYDRAZINE,1,2-DIMETHYL-	540738	N	N	Y	N	N	N
DIMETHYLKETONE	see ACETONE							
O,O-DIMETHYL O-p-NITROPHENYL PHOSPHOROTHIOATE	METHYL PARATHION	298000	Y	N	Y	Y	N	Y
DIMETHYLNITROSAMINE	N-NITROSODIMETHYLAMINE	62759	N	Y	Y	Y	Y	Y
DIMETHYL PARATHION	see METHYL PARATHION							

CHEMICAL NAME	OTHER PARAMETER NAMES	CASRN	CWA 311(b)(4)	CWA 307(a)	CERCLA 302.4	RCRA 261.33e	USCODE 241b.4	ARS 243D
DIAMINE	HYDRAZINE	302012	N	N	Y	N	Y	Y
DIAMINOTOLUENE	TOLUENEDIAMINE	95807	N	N	Y	N	N	N
		25376458						
		496720						
		823405						
2,4-DIAMINOANISOLE SULFATE	NONE		N	N	N	N	Y	N
4,4'-DIAMINODIPHENYLMETHANE	4,4'-METHYLENEDIANILINE AND ITS DICHLORIDE	101779	N	N	N	N	Y	N
DIAMINOETHANE	see ETHYLENDIAMINE							N
2,4-DIAMINOTOLUENE	TOLUENE, 2,4-DIAMINO	95807	N	N	N	N	Y	Y
DIAZINON	NONE	5333415	Y	N	Y	N	N	N
DIBENZ (a,h) ACRIDINE	1,2-5,6-DIBENZACRIDINE		N	N	N	N	Y	Y
DIBENZ (a,j) ACRIDINE			N	N	N	N	Y	Y
DIBENZ[a,h] ANTHRACENE	1,2:5,6-DIBENZANTHRACENE; DIBENZO[a,h]ANTHRACENE;	53703	N	Y	Y	N	Y	Y
DIBENZ [a,i] PYRENE	1,2:7,8-DIBENZOPYRENE		N	N	Y	N	Y	Y
1,2:5,6-DIBENZACRIDINE	see DIBENZ[a,h]ACRIDINE							
1,2:5,6-DIBENZANTHRACENE	see DIBENZ[a,h]ANTHRACENE							
1,2:7,8-DIBENZOPYRENE	see DIBENZ[a,i]PYRENE							
DIBENZO[a,h] ANTHRACENE	see DIBENZ[a,h]ANTHRACENE							
DIBENZO(a,i)PYRENE			N	N	N	N	Y	Y
7H- DIBENZO (c,g) CARBAZOLE			N	N	N	N	Y	Y
DIBENZO(a,i) PYRENE			N	N	N	N	Y	Y
1,2-DIBROMOMETHANE	ETHYLENE BROMIDE; EDB		N	N	N	N	Y	Y
1,2-DIBROMO-3-CHLOROPROPANE	PROPANE, 1,2-DIBROMO-3-CHLORO-; BBCP; DBCP	96128	N	N	Y	N	Y	Y
1,2-DIBROMO-2,2-DICHLORO-ETHYLDIMETHYLPHOSPHATE	see MUSTARD GAS							
DIBUTYL PHTHALATE	see n-BUTYL PHTHALATE							
DI-n-BUTYL PHTHALATE	see n-BUTYL PHTHALATE							
DICAMBA	NONE	1918009	Y	N	Y	N	N	N
DICHLOBENIL	NONE	1194656	Y	N	Y	N	N	N
DICHLONE	NONE	117806	Y	N	Y	N	N	N
S-(2,3-DICHLOROALLYL)DIISOPROPYLTHIOCARBAMATE	see DIALLATE							
3,5-DICHLORO-N-(1,1-DIMETHYL-2-PROPYNYL) BENZAMIDE	see PRONAMIDE							
DICHLOROBENZENE (MIXED)	NONE	25321226	Y	N	Y	N	N	N
1,2-DICHLOROBENZENE	see BENZENE,1,2-DICHLORO-							
1,3-DICHLOROBENZENE	see BENZENE, 1,3-DICHLORO-							
1,4-DICHLOROBENZENE	see BENZENE, 1,4-DICHLORO-							
m-DICHLOROBENZENE	see BENZENE, 1,3-DICHLORO-							
o-DICHLOROBENZENE	see BENZENE, 1,2-DICHLORO-							
p-DICHLOROBENZENE	see BENZENE, 1,4-DOCHLORO-							
DICHLOROBENZIDINE	NONE		N	Y	Y	N	N	N
3,3'-DICHLOROBENZIDINE	(1,1'-BIPHENYL)-4,4'DIAMINE,3,3'DICHLORO-	91941	N	Y	Y	N	Y	Y
DICHLORORBROMOMETHANE	NONE	75274	N	Y	Y	N	N	N
1,4-DICHLORO-2-BUTENE	see 2-BUTENE,1,4-DICHLORO							
DICHLORODIFLUOROMETHANE	METHANE, DICHLORODIFLUORO-	75718	N	N	Y	N	N	N
DICHLORODIPHENYL DICHLOROETHANE	DDD; 4,4'-DDD; TDE	72548	Y	Y	Y	N	N	N
DICHLORODIPHENYL TRICHLOROETHANE	DDT; 4,4' DDT	50293	Y	Y	Y	N	Y	Y
1,1-DICHLOROETHANE	ETHANE, 1,1-DICHLORO; ETHYLIDENE DICHLORIDE	75343	N	Y	Y	N	N	N
1,2-DICHLOROETHANE	ETHYLENE DICHLORIDE; ETHANE, 1,2-DICHLORO-	107062	N	N	N	N	Y	Y
1,1-DICHLOROETHYLENE	ETHENE, 1,1-DICHLORO; VINYLIDENE CHLORIDE	75354	Y	Y	Y	N	N	N
1,2-TRANS-DICHLOROETHYLENE	ETHENE, TRANS-1,2-DICHLORO	156605	N	Y	Y	N	N	N
DICHLOROETHYL ETHER	see BIS(2-CHLOROETHYL) ETHER							
2,4-DICHLORO-1(4-NITROPHENOXY) BENZENE	see NITROFEN							
2,4-DICHLOROPHENOL	PHENOL, 2,4-DICHLORO	120832	N	Y	Y	N	N	N

CHEMICAL NAME	OTHER PARAMETER NAMES	CASRN	CWA 311(b)(4)	CWA 307(a)	CERCLA 302.4	RCRA 261.33e	USCODE 241b.4	ARS 243D
p-CROTONALDEHYDE	see 2-BUTENAL	106445						
CUMENE	BENZENE, 1-METHYLETHYL-; ISOPROPYLBENZENE	98828	N	N	Y	N	N	N
CUPFERRON	AMMONIUM N-NITROSOPHENYLHYDROXYLAMINE	135206	N	N	N	N	Y	Y
CUPRIC ACETATE	NONE	142712	Y	N	Y	N	N	N
CUPRIC ACETOARSENITE	NONE	12002038	Y	N	Y	N	N	N
CUPRIC CHLORIDE	NONE	7447394	Y	N	Y	N	N	N
CUPRIC NITRATE	NONE	3251238	Y	N	Y	N	N	N
CUPRIC OXALATE	NONE	5893663	Y	N	Y	N	N	N
CUPRIC SULFATE	NONE	7758987	Y	N	Y	N	N	N
CUPRIC SULFATE AMMONIATED	NONE	10380297	Y	N	Y	N	N	N
CUPRIC TARTRATE	NONE	815827	Y	N	Y	N	N	N
CYANIDES	NONE	151508	N	Y	Y	N	N	N
		143339						
CYANIDES (SOLUBLE CYANIDE SALTS)	NOT ELSEWHERE SPECIFIED	57125	N	N	Y	N	N	N
CYANOGEN	NONE	460195	N	N	Y	Y	N	Y
CYANOGEN BROMIDE	see BROMINE CYANIDE							
CYANOGEN CHLORIDE	see CHLORINE CYANIDE							
CYCASIN	METHYLAZOXYMETHANOL BETA-d-GLUCOIDE	14901087	N	N	N	N	Y	Y
1,4-CYCLOHEXADIENEDIONE	p-BENZOQUINONE	106514	N	N	Y	N	N	N
CYCLOHEXANE	BENZENE, HEXAHYDRO-	110827	Y	N	Y	N	N	N
CYCLOHEXANONE	NONE	108941	N	N	Y	N	N	N
1,3-CYCLOPENTADIENE,1,2,3,4,5,5-HEXACHLORO-	HEXACHLOROCYCLOPENTADIENE; PERCHLOROCYCLOPENTADIENE	77474	Y	Y	Y	N	N	N
CYCLOPHOSPHAMIDE	2H-1,3,2-OXAZAPHOSPHORINE,2-[BIS(2-CHLOROETHYL) AMINO] TETRAHYDRO-2-OXIDE	50180	N	N	Y	N	Y	Y
		94111						
2,4-D ACID	2,4-DICHLOROPHENOXYACETIC ACID, SALTS AND ESTERS; 2,4-D SALTS AND ESTERS	94757	Y	N	Y	N	N	N
2,4-D ESTERS	NONE	94791	Y	N	Y	N	N	N
		94804						
		1320189						
		1928387						
		1928616						
		1929733						
		2971382						
		53467111						
		25168267						
2,4-D-SALTS AND ESTERS	see 2,4-D ACID							
DACARBAZINE	NONE		N	N	N	N	Y	Y
DAUNOMYCIN	5,12-NAPHTHACENEDIONE,(8S-CIS)-8-ACETYL-10-[3-AMINO-2,3,6-TRIDEOXY-ALPHA-L-LYOXY-HEXOPYRANOSYL)OXY]-7,8,9,10-TETRAHYDRO-6,8,11-TRIHYDROXY-1-METHOXY-	20830813	N	N	Y	N	N	N
DDD	see DICHLORODIPHENYL DICHLOROETHANE							
4,4'-DDD	see DICHLORODIPHENYL DICHLOROETHANE							
DDE	4,4'DDE							
4,4'-DDE	see DDE	72559	N	Y	Y	N	N	N
DDT	see DICHLORODIPHENYL TRICHLOROETHANE							
4,4'-DDT	see DICHLORODIPHENYL TRICHLOROETHANE							
DDT AND METABOLITES								
DECACHLOROOCTAHYDRO-1,3,4-METHENO-2H-CYCLOBUTA [c,d]PENTALEN-2-ONE	see KEPONE		N	Y	Y	N	Y	N
DECHLORANE	see MIREX							
DIALLATE	S-(2,3-DICHLOROALLYL)DIISOPROPYLTHIOCARBAMATE	2303164	N	N	Y	N	N	N

CHEMICAL NAME	OTHER PARAMETER NAMES	CASRN	CWA 311(b)(4)	CWA 307(a)	CERCLA 302.4	RCRA 261.33e	USCODE 241b.4	ARS 243D
CHLOROALKYL ETHERS			N	Y	Y	N	N	N
2-CHLOROALLYL DIETHYLDITHIOCARBAMATE	see SULFALLATE							
p-CHLOROANILINE	see BENZENAMINE, 4-CHLORO							
CHLOROBENZENE	BENZENE, CHLORO-	108907	Y	Y	Y	N	N	N
4-CHLORO-m-CRESOL	p-CHLORO-m-CRESOL; PHENOL, 4-CHLORO-3-METHYL-	59507	N	Y	Y	N	N	N
p-CHLORO-m-CRESOL	see 4-CHLORO-m-CRESOL							
CHLORODIBROMOMETHANE	NONE	124481	N	Y	Y	N	N	N
1-CHLORO-2,3-EPOXYPROPANE	EPICHLOROHYDRIN; OXIRANE, 2-(CHLOROMETHYL)-	106898	Y	N	Y	N	N	N
CHLOROETHANE	NONE	75003	N	Y	Y	N	Y	Y
1-(2-CHLOROETHYL)-3-CYCLOHEXYL-1-NITROSOUREA	CCNU		N	N	N	N	Y	Y
2-CHLOROETHYL VINYL ETHER	ETHANE, 2-CHLOROETHOXY	110758	N	Y	Y	N	N	N
CHLOROFORM	METHANE TRICHLORO-	67663	Y	Y	Y	N	Y	Y
CHLOROMETHYL METHYL	see BIS(CHLOROMETHYL) ETHER							
CHLOROMETHYL METHYL ETHER	METHANE, CHLOROMETHOXY; BIS(CHLOROMETHYL) ETHER	107302	N	N	Y	N	N	N
beta-CHLORONAPHTHALENE	2-CHLORONAPHTHALENE; NAPHTHALENE, 2-CHLORO-	91587	N	Y	Y	N	N	N
2-CHOLORNAPHTHALENE	see beta-CHLORONAPHTHALENE							
4-CHLORO-o-PHENYLENEDIAMINE	NONE		N	N	N	N	Y	N
2-CHLOROPHENOL	o-CHOLOROPHENOL; PHENOL, 2-CHLORO-	95578	N	Y	Y	N	N	N
o-CHLOROPHENOL	see 2-CHLOROPHENOL							
4-CHLOROPHENYL PHENYL ETHER	NONE	7005723	N	Y	Y	N	N	N
1-(o-CHLOROPHENYL) THIOUREA	THIOUREA, (2-CHLOROPHENYL)-	5344821	N	N	Y	Y	N	Y
3-CHLORO-1-PROPENE	see ALLYL CHLORIDE							
3-CHLOROPROPIONITRILE	PROPANENITRILE, 2-CHLORO	542767	N	N	Y	Y	N	Y
CHLOROSULFONIC ACID	NONE	7790945	Y	N	Y	N	N	N
4-CHLORO-o-TOLUIDINE, HYDROCHLORIDE	see BENZENAMINE, 4-CHLORO-2-METHYL-HYDROCHLORIDE							
CHLORPYRIFOS	NONE	2921882	Y	N	Y	N	N	N
CHROMIC ACETATE	NONE	1066304	Y	N	Y	N	N	N
CHROMIC ACID	NONE	11115745 7738945	Y	N	Y	N	N	N
CHROMIC ACID, CALCIUM SALT	see CALCIUM CHROMATE							
CHROMIC SULFATE	NONE	10101538	Y	N	Y	N	N	N
CHROMIUM	NONE	7440473	N	Y	Y	N	Y	N
CHROMIUM AND COMPOUNDS	NONE		N	Y	Y	N	Y	N
CHROMOUS CHLORIDE	NONE	10049055	Y	N	Y	N	N	N
CHRYSENE	1,2-BENZPHENANTHRENE	218019	N	Y	Y	N	N	N
COBALTOUS BROMIDE	NONE	7789437	Y	N	Y	N	N	N
COBALTOUS FORMATE	NONE	544183	Y	N	Y	N	N	N
COBALTOUS SULFAMATE	NONE	14017415	Y	N	Y	N	N	N
COKE OVEN EMISSIONS			N	N	Y	N	Y	Y
CONJUGATED ESTROGENS	NONE		N	N	N	N	Y	Y
COPPER	NONE	7440508	N	Y	Y	N	N	N
COPPER AND COMPOUNDS			N	Y	Y	N	N	N
COPPER CYANIDE	NONE	544923	N	N	Y	N	N	N
COUMAPHOS	NONE	56724	Y	N	Y	N	N	N
CREOSOTE	NONE	8001589	N	N	Y	N	N	N
p-CRESIDINE	5-METHYL-o-ANISIDINE	120718	N	N	N	N	Y	Y
CRESOL(s)	see CRESYLIC ACID							
m-								
o-								
p-								
CRESYLIC ACID	CRESOL(s)	1319773	Y	N	Y	N	N	N
m-		108394						
o-		95487						

CHEMICAL NAME	OTHER PARAMETER NAMES	CASRN	CWA 311(b)(4)	CWA 307(a)	CERCLA 302.4	RCRA 261.33e	USCODE 241b.4	ARS 2430
	PHTHALATE; DI-n-BUTYL PHTHALATE							
BUTYRIC ACID, ISO-	NONE	107926	Y	N	Y	N	N	N
CACODYLIC ACID	HYDROXYDIMETHYLARSINE OXIDE	79312						
CADMIUM	NONE	75605	N	N	Y	N	N	N
CADMIUM ACETATE	NONE	7440439	N	Y	Y	N	Y	N
CADMIUM AND COMPOUNDS	NONE	543908	Y	N	Y	N	N	N
CADMIUM BROMIDE	NONE		N	Y	Y	N	Y	N
CADMIUM CHLORIDE	NONE	7789426	Y	N	Y	N	N	N
CALCIUM ARSENATE	NONE	10108642	Y	N	Y	N	N	N
CALCIUM ARSENITE	NONE	7778441	Y	N	Y	N	N	N
CALCIUM CARBIDE	NONE	52740166	Y	N	Y	N	N	N
CALCIUM CHROMATE	CHROMIC ACID, CALCIUM SALT	75207	Y	N	Y	N	N	N
CALCIUM CYANIDE	NONE	13765190	Y	N	Y	N	N	N
CALCIUM DODECYLBENZENE SULFONATE	NONE	592018	Y	N	Y	N	N	N
CALCIUM HYPOCHLORITE	NONE	26264062	Y	N	Y	N	N	N
CAMPHENE, OCTACHLORO	TOXAPHENE	7778543	Y	N	Y	N	N	N
CAPTAN	NONE	8001352	Y	Y	Y	N	Y	Y
CARBAMIC ACID, ETHYL ESTER	ETHYLCARBAMATE (URETHAN)	133062	Y	N	Y	N	N	N
CARBAMIC ACID, METHYLNITROSO-ETHYL ESTER	N-NITROSO-N-METHYLURETHANE	51796	N	N	Y	N	N	N
CARBAMIDE, N-ETHYL-N-NITROSO-	N-NITROSO-N-ETHYLUREA	615532	N	N	Y	N	N	N
CARBAMIDE, N-METHYL-N-NITROSO-	N-NITROSO-N-METHYLUREA	759739	N	N	Y	N	N	N
CARABAMIDE, THIO	THIOUREA	684935	N	N	Y	N	N	N
CARACRYL	see ACRYLONITRILE	62566	N	N	Y	N	Y	N
CARBAMIMIDOSELENOIC ACID	SELENOUREA							
CARBAMOYL CHLORIDE, DIMETHYL-	DIMETHYLCARBAMOYLCHLORIDE	630104	N	N	Y	Y	N	Y
CARBARYL	NONE	79447	N	N	Y	N	N	N
CARBOFURAN	NONE	63252	Y	N	Y	N	N	Y
CARBOLIC ACID	see PHENOL	156362	Y	N	Y	N	N	N
CARBON BISULFIDE	CARBON DISULFIDE							
CARBON DISULFIDE	see CARBON BISULFIDE	75150	Y	N	Y	Y	N	Y
CARBONIC ACID, DITHALLIUM(1) SALT	THALLIUM(1) CARBONATE							
CARBONIC DICHLORIDE	see CARBONYL CHLORIDE	6533739	N	N	Y	N	N	N
CARBONOCHLORIDIC ACID, METHYL ESTER	METHYL CHLOROCARBONATE							
CARBONOXYFLUORIDE	CARBONYL FLUORIDE	79221	N	N	Y	N	N	N
CARBON TETRACHLORIDE	METHANE, TETRACHLORO-	353504	N	N	Y	N	N	N
CARBONYL CHLORIDE	PHOSGENE; CARBONIC DICHLORIDE	56235	Y	Y	Y	N	Y	Y
CARBONYL FLUORIDE	CARBON OXYFLUORIDE	75445	Y	N	Y	Y	N	Y
CERTAIN COMBINED CHEMOTHERAPY FOR LYMPHOMAS		353504	N	N	Y	N	N	N
CHLORAL	ACETALDEHYDE, TRICHLORO-; TRICHLOROETHANAL		N	N	N	N	Y	N
CHLORAMBUCIL	see BUTANOIC ACID, 4[BIS(2-CHLOROETHYL)AMINO] BENZENE	75876	N	N	Y	N	N	N
CHLORDANE (TECHNICAL MIXTURE AND METABOLITES	NONE							
CHLORDANE	CHLORDANE, TECHNICAL; 4,7-METHANOINDAN,1,2,4,5, 6,7,8,8' OCTACHLORO-3a,4,7,7a-TETRAHYDRO-	57749	N	Y	Y	N	N	N
CHLORDANE, TECHNICAL	see CHLORDANE	57749	Y	Y	Y	N	N	N
CHLORINATED BENZENES	NONE							
CHLORINATED ETHANES			N	Y	Y	N	N	N
CHLORINATED NAPHTHALENE			N	Y	Y	N	N	N
CHLORINATED PHENOLS			N	Y	Y	N	N	N
CHLORINE	NONE		N	Y	Y	N	N	N
CHLORINE CYANIDE	CYANOGEN CHLORIDE	7782505	Y	N	Y	N	N	N
CHLORNAPHAZINE	2-NAPHTHYLAMINE, N,N-BIS(2-CHLOROETHYL)-	506774	Y	N	Y	N	N	N
CHLOROACETALDEHYDE	ACETALDEHYDE, CHLORO-	494031	N	N	Y	N	N	N
		107200	N	N	Y	Y	N	Y

CHEMICAL NAME	OTHER PARAMETER NAMES	CASRN	CWA 311(b)(4)	CWA 307(a)	CERCLA 302.4	RCRA 261.33e	USCODE 241b.4	ARS 243D
1,2-BENZPHENANTHRENE	CHRYSENE	218019	N	Y	Y	N	N	N
BENZYL CHLORIDE	BENZENE, CHLOROMETHYI	100447	Y	N	Y	Y	N	Y
BERYLLIUM	BERYLLIUM DUST	7440417	N	Y	Y	N	Y	N
BERYLLIUM AND COMPOUNDS	NONE		N	Y	Y	N	Y	N
BERYLLIUM CHLORIDE	NONE	7787475	Y	N	Y	N	N	N
BERYLLIUM DUST	see BERYLLIUM	7787497	Y	N	Y	N	N	N
BERYLLIUM FLUORIDE	NONE	13597994	Y	N	Y	N	N	N
BERYLLIUM NITRATE	NONE	319846	N	Y	Y	N	N	N
alpha- BHC	NONE	319857	N	Y	Y	N	N	N
beta- BHC	NONE	58899	Y	Y	Y	N	Y	Y
gamma- BHC	HEXACHLORCYCLOHEXANE (GAMMA ISOMER), LINDANE	319868	N	Y	Y	N	N	N
delta-BHC	NONE	1464535	N	N	Y	N	N	N
2,2'-BIOXIRANE	1,2:3,4-DIEPOXYBUTANE	92875	N	N	Y	N	N	N
(1,1'-BIPHENYL)-4,4'-DIAMINE	see BENZIDINE	91941	N	Y	Y	N	N	N
(1,1'-BIPHENYL)-4,4'-DIAMINE,3,3'-DIMETHOXY-	3,3'-DIMETHOXYBENZIDINE	119904	N	N	Y	N	N	N
(1,1'-BIPHENYL)-4,4'-DIAMINE,3,3'-DICHLORO-	3,3'-DICHLOROBENZIDINE	119937	N	Y	Y	N	N	N
(1,1'-BIPHENYL)-4,4'-DIAMINE,3,3'-DIMETHYL	3,3'-DIMETHYLBENZIDINE	111444	N	Y	Y	N	N	N
BIPHENYLINE	see 4-AMINOBIPHENYL	108601	N	Y	Y	N	N	N
BIS(2-CHLOROETHOXY) METHANE	ETHANE, 1,1'-[METHYLENEBIS(OXY)] BIS(2-CHLORO-		N	N	N	N	Y	Y
BIS(2-CHLOROETHYL) ETHER	DICHLOROETHYL ETHER, ETHANE, 1,1'-OXYBIS(2-CHLORO	542881	N	N	Y	N	Y	Y
BIS(2-CHLOROISOPROPYL) ETHER	PROPANE, 2,2'-OXYBIS(2-CHLORO-	137268	N	N	Y	N	N	N
BISCHLOROETHYL NITROSOUREA	NONE	117817	N	Y	Y	N	N	N
BIS(CHLOROMETHYL) ETHER	METHANE, OXYBIS(CHLORO-	506683	N	N	Y	N	N	N
BIS(DIMETHYLTHIOCARBAMOYL) DISULFIDE	THIRAM	598312	N	N	Y	Y	N	Y
BIS (2-ETHYLHEXYL)PHTHALATE	1,2-BENZENEDICARBOXYLIC ACID, [BIS(2-ETHYLHEXYL)] ESTER	75252	N	Y	Y	N	N	N
BROMINE CYANIDE	CYANOGEN BROMIDE	101553	N	Y	Y	N	N	N
BROMOACETONE	2-PROPANONE, 1-BROMO	357573	N	N	Y	N	Y	Y
BROMOFORM	METHANE, TRIBROMO	87683	N	Y	Y	N	N	N
4-BROMOPHENYL PHENYL ETHER	BENZENE, 1-BROMO-4-PHENOXY-	924163	N	N	Y	N	N	N
BRUCINE	STRYCHNIDIN-10-ONE, 2,3- DIMETHOXY		N	N	N	N	Y	N
BUTADIENE DIOXIDE	see DIEPOXYBUTANE	305033	N	N	Y	N	Y	Y
1,3-BUTADIENE, 1,1,2,3,4,4-HEXACHLORO-	HEXACHLOROBUTADIENE	71363	N	N	Y	N	N	N
1-BUTANAMINE, N,BUTYL-N-NITROSO-	N-NITROSODI-n-BUTYLAMINE	78933	N	N	Y	N	N	N
1-,4-BUTANEDIOL DIMETHYLSULFONATE (MYLERAN)	NONE	1338234	N	N	Y	N	N	N
BUTANOIC ACID, 4-[BIS(2-CHLOROETHYL)AMINO] BENZENE	CHLORAMBUCIL	123739	Y	N	Y	N	N	N
1-BUTANOL	n-BUTYL ALCOHOL	4170303						
2-BUTANONE	METHYL ETHYL KETONE	764410	N	N	Y	N	N	N
2-BUTANONE PERPXIDE	METHYL ETHYL KETONE PEROXIDE							
2-BUTENAL	CROTONALDEHYDE	123864	Y	N	Y	N	N	N
2-BUTENE, 1,4-DICHLORO-	1,4-DICHLORO-2-BUTENE	110190						
BUTTER YELLOW	see 4-DIMETHYLAMINOZOBENZENE	105464						
BUTYL ACETATE	NONE	540885						
ISO-		109739	Y	N	Y	N	N	N
SEC-		78819						
TERT-		513495						
n-BUTYL ALCOHOL	see 1-BUTANOL	13952846						
BUTYLAMINE	NONE	85687	N	Y	Y	N	N	N
ISO-		84742	Y	Y	Y	N	N	N
SEC-								
TERT-								
BUTYLBENZYLPHTHALATE	NONE							
n-BUTYL PHTHALATE	1,2-BENZENEDICABOXYLIC ACID, DIBUTYL ESTER; DIBUTYL							

CHEMICAL NAME	OTHER PARAMETER NAMES	CASRN	CWA 311(b)(4)	CWA 307(a)	CERCLA 302.4	RCRA 261.33e	USCODE 241b.4	ARS 243D
BENZENE, CHLOROMETHYL-	see BENZYL CHLORIDE							
BENZENE, 1,2-DICHLORO-	1,2-DICHLOROBENZENE, o-DICHLOROBENZENE	95501	Y	Y	Y	N	N	N
BENZENE, 1,3-DICHLORO-	1,3-DICHLOROBENZENE, m-DICHLOROBENZENE	541731	N	Y	Y	N	N	N
BENZENE, 1,4-DICHLORO-	1,4-DICHLOROBENZENE, p-DICHLOROBENZENE	106467	Y	Y	Y	N	N	N
BENZENE, DICHLOROMETHYL-	see BENZAL CHLORIDE							
BENZENE, 2,4-DIISOCYANATOMETHYL	see TOLUENE DIISOCYANATE							
BENZENE, DIMETHYL m-, o- p-	see XYLENE (MIXED) m-, o-, p-							
BENZENE, HEXACHLORO-	see HEXACHLOROBENZENE							
BENZENE, HEXAHYDRO-	see CYCLOHEXANE							
BENZENE, HYDROXY-	see PHENOL							
BENZENE, METHYL-	see TOLUENE							
BENZENE, 1-METHYL-2,4-DINITRO-	2,4-DINITROTOLUENE	121142	Y	Y	Y	N	N	N
BENZENE, 1-METHYL-2,6-DINITRO-	2,6-DINITROTOLUENE	606202	Y	Y	Y	N	N	N
BENZENE, 1,2-METHYLENEDIOXY-4-ALLYL-	see SAFROLE							
BENZENE, 1,2-METHYLENEDIOXY-4-PROPENYL	see ISOSAFROLE							
BENZENE, 1,2-METHYLENEDIOXY-4-PROPYL	see DIHYDROSAFROLE							
BENZENE, 1-METHYL ETHYL-	see CUMENE							
BENZENE, NITRO-	see NITROBENZENE							
BENZENE, PENTACHLOR-	see PENTACHLOROBENZENE							
BENZENE, PENTACHLORONITRO-	see PENTACHLORONITROBENZENE							
BENZENE, 1,2,4,5-TETRACHLORO-	see 1,2,4,5,-TETRACHLOROBENZENE							
BENZENE, TRICHLOROMETHYL-	see BENZOTRICHLORIDE							
BENZENE,1,3,5-TRINITRO	sym-TRINITROBENZENE							
BENZENEACETIC ACID, 4-CHLORO-ALPHA-(4-CHLOROPHENYL)-ALPHA-HYDROXY-, ETHYL ESTER	see ETHYL 4,4'-DICHLOROBENZILATE	99354	N	N	Y	N	N	N
1,2-BENZENEDICARBOXYLIC ACID, ANHYDRIDE	see PHTHALIC ANHYDRIDE							
1,2-BENZENEDICARBOXYLIC ACID, [BIS(2-ETHYLHEXYL)] ESTER	see BIS (2-ETHYLHEXYL) PHTHALATE							
1,2-BENZENEDICARBOXYLIC ACID DIBUTYL ESTER	see n-BUTYL PHTHALTE							
1,2-BENZENEDOCARBOXYLIC ACID, DIETHYL ESTER	see DIETHYLPHTHALATE							
1,2-BENZENEDICARBOXYLIC ACID, DIMETHYL ESTER	see DIMETHYL PHTHALATE							
1,2-BENZENEDICARBOXYLIC ACID, DI-n-OCTYL ESTER	see DI-n-OCTYL PHTHALATE							
1,3-BENZENEDIOL	see RESORCINOL							
1,2 BENZENEDIOL, 4-[1-HYDROXY-2-(METHYLAMINO-ETHYL	see EPINEPHRINE							
BENZENESULFONIC ACID CHLORIDE	see BENZENESULFONYL CHLORIDE							
BENZENESULFONYL CHLORIDE	BENZENESULFONIC ACID CHLORIDE	98099	N	N	Y	N	N	N
BENZENETHIOL	THIOPHENOL	108985	N	N	Y	Y	N	Y
BENZIDINE	(1,1'-BIPHENYL)-4,4'-DIAMINE	92875	N	Y	Y	N	Y	Y
1,2-BENZISOTHIAZOLIN-3-ONE-1,1-DIOXIDE, AND SALTS	see SACCHARIN AND SALTS							
BENZO[a]ANTHRACENE	see BENZ[a]ANTHRCENE							
BENZO[b]FLUORANTHENE	NONE	205992	N	Y	Y	N	Y	Y
BENZO(k)FLUORANTHENE	NONE	207089	N	Y	Y	N	N	N
BENZO[j,k]FLUORENE	see FLUORANTHENE							
BENZOIC ACID	NONE	65850	Y	N	Y	N	N	N
BENZONITRILE	NONE	100470	Y	N	Y	N	N	N
BENZO[ghi]PERYLENE	NONE	191242	N	Y	Y	N	N	N
BENZO[def]PHENANTHRENE	see PYRENE							
BENZO[a]PYRENE	3,4-BENZOPYRENE	50328	N	Y	Y	N	Y	Y
BENZO[b]PYRIDINE	see PYRIDINE							
3,4-BENZOPYRENE	see BENZO[a]PYRENE							
p-BENZOQUINONE	1,4-CYCLOHEXADIENEDIONE	106514	N	N	Y	N	N	N
BENZOTRICHLORIDE	BENZENE, TRICHLOROMETHYL-	98077	N	N	Y	N	Y	Y
BENZOYL CHLORIDE	NONE	98884	Y	N	Y	N	N	N

CHEMICAL NAME	OTHER PARAMETER NAMES	CASRN	CWA 311(b)(4)	CWA 307(a)	CERCLA 302.4	RCRA 261.33e	USCODE 241b.4	ARS 2430
ANTIMONY TRIFLOURIDE	NONE	7783564	Y	N	Y	N	N	N
ANTIMONY TRIOXIDE	NONE	1309644	Y	N	Y	N	N	N
ARAMITE	SULFUROUS ACID 2-(p-TERT-BUTYLPHENOXY)-1-METHYLETHYL-2-CHLOROETHYL ESTER	140578	N	N	N	N	Y	Y
AROCLOR 1016	POLYCHLORINATED BIPHENYLS; PCBs	12674112	Y	Y	Y	N	Y	N
AROCLOR 1221	POLYCHLORINATED BIPHENYLS; PCBs	11104282	Y	Y	Y	N	Y	N
AROCLOR 1232	POLYCHLORINATED BIPHENYLS; PCBs	11141165	Y	Y	Y	N	Y	N
AROCLOR 1242	POLYCHLORINATED BIPHENYLS; PCBs	53469219	Y	Y	Y	N	Y	N
AROCLOR 1248	POLYCHLORINATED BIPHENYLS; PCBs	12672296	Y	Y	Y	N	Y	N
AROCLOR 1254	POLYCHLORINATED BIPHENYLS; PCBs	11097691	Y	Y	Y	N	Y	N
AROCLOR 1260	POLYCHLORINATED BIPHENYLS; PCBs	11096825	Y	Y	Y	N	Y	N
ARSENIC	NONE	7440382	N	Y	Y	N	Y	N
ARSENIC ACID	NONE	1327522	N	N	Y	Y	Y	N
ARSENIC AND COMPOUNDS	NONE	7778394	N	Y	Y	N	N	N
ARSENIC DISULFIDE	NONE	1303328	Y	N	Y	N	N	N
ARSENIC(III) OXIDE	ARSENIC TRIOXIDE	1327533	Y	N	Y	Y	Y	N
ARSENIC(V) OXIDE	ARSENIC PENTOXIDE	1303282	Y	N	Y	Y	Y	N
ARSENIC PENTAOXIDE	ARSENIC (V) OXIDE	1303282	Y	N	Y	Y	Y	N
ARSENIC TRICHLORIDE	NONE	7784341	Y	N	Y	N	N	N
ARSENIC TRIOXIDE	ARSENIC (III) OXIDE	1327533	Y	N	Y	Y	Y	N
ARSENIC TRISULFIDE	NONE	1303339	Y	N	Y	N	N	N
ARSINE, DIETHYL-	DIETHYLARSINE	692422	N	N	Y	N	Y	Y
ASBESTOS	NONE	1332214	N	Y	Y	Y	N	N
AURAMINE	BENZENAMINE, 4,4'-CARBONIMIDOYLBIS(N,N-DOMETHYL	492808	N	N	Y	N	Y	N
AZASERINE	L-SERINE, DIAZOACETATE (ESTER)	115026	N	N	Y	N	N	N
AZATHIOPRINE	6-[(1-METHYL-4-NITRO-1H-IMIDAZOL-5-YL)THIO]-1H-PURINE		N	N	N	N	Y	Y
AZIRIDINE	ETHYLENIMINE	151564	N	N	Y	Y	N	Y
AZIRIDINE, 2-METHYL-	NONE		N	N	N	Y	N	N
AZIRINO (2',3':3,4)PYRROLO (1,2-a)INDOLE-4,7-DIONE, 6-AMINO-8-[((AMINOCARBONYL)OXY)METHYL]-1,1a,2,8a,8b-HEXAHYDRO-8a-METHOXY-5-METHYL	MITOMYCIN C	50077	N	N	Y	N	N	N
BARIUM CYANIDE	NONE	542621	Y	N	Y	N	N	N
BENZ(j)ACEANTHRYLENE,1,2-DIHYDRO-3-METHYL-	3-METHYLCHOLANTHRENE	66495	N	N	Y	N	N	N
BENZ(c)ACRIDINE	3,4-BENZACRIDINE	225514	N	N	Y	N	N	N
3,4-BENZACRIDINE	BENZ[c]ACRIDINE	225514	N	N	Y	N	N	N
BENZAL CHLORIDE	BENZENE, DICHLOROMETHYL-	98873	N	N	Y	N	N	N
BENZ[a]ANTHRACENE	1,2-BENZANTHRACENE, BENZO[a]ANTHRACENE	56553	Y	N	Y	N	N	N
1,2-BENZANTHRACENE	see BENZ[a]ANTHRACENE							
1,2-BENZANTHRACENE, 7,12-DIMETHYL-	7,12-DIMETHYLBENZ[a]ANTHRACENE	57976	N	N	Y	N	N	N
1-BENZAZINE	see PYRIDINE							
BENZENAMINE	see ANILINE							
BENZENAMINE, 4,4'-CARBONIMIDOYLBIS(N,N-DIMETHYL	see AURAMINE							
BENZENAMINE, 4-CHLORO	p-CHLOROANLINE							
BENZENAMINE, 4-CHLORO-2-METHYL-HYDROCHLORIDE	4-CHLORO-o-TOLUIDINE, HYDROCHLORIDE	106478	N	N	Y	Y	N	Y
BENZINAMINE,N,N-DIMETHYL-4-PHENYLAZO-	DIMETHYLAMINOAZOBENZENE	3165933	N	N	Y	N	N	N
BENZENAMINE, 4,4'-METHYLENEBIS(2-CHLORO-	4,4'-METHYLENEBIS(2CHLOROANILINE)	60117	N	N	Y	N	N	N
BENZENAMINE-2-METHYL-, HYDROCHLORIDE	o-TOLUIDINE HYDROCHLORIDE	101144	N	N	Y	N	N	N
BENZENAMINE, 2-METHYL- 5-NITRO	5-NITRO-o-TOLUIDINE	636215	N	N	Y	N	N	N
BENZENAMINE, 4-NITRO-	p-NITROANILINE	99558	N	N	Y	N	N	N
BENZENE	NONE	100016	N	N	Y	Y	N	Y
BENZENE, 1-BROMO-4-PHENOXY-	4-BROMOPHENYL PHENYLETHER	71432	Y	Y	Y	N	Y	Y
BENZENE, CHLORO-	see CHLOROBENZENE	101553	N	Y	Y	N	N	N

CHEMICAL NAME	OTHER PARAMETER NAMES	CASRN	CWA 311(b)(4)	CWA 307(a)	CERCLA 302.4	RCRA 261.33e	USCODE 241b.4	ARS 243D
2-AMINOANTHRAQUINONE	2-AMINO-9; 10-ANTHTRACENEDIONE	117793	N	N	N	N	Y	Y
AMINOBENZENE	see ANILINE							
4-AMINOBIPHENYL	BIPHENYLINE; P-PHENYLANILINE; XENYLAMINE	92671	N	N	N	N	Y	Y
1-AMINO-2-METHYLANTHRAQUINONE	ACETATE FAST ORANGE R	82800	N	N	N	N	Y	Y
2-AMINO-1-METHYL BENZENE	O-TOLUIDINE	95534	N	N	Y	N	Y	N
4-AMINO-1-METHYL BENZENE	P-TOLUIDINE	106490	N	N	Y	N	N	Y
5-(AMINOMETHYL)-3-ISOAZOLOL	3(2H)-ISOXAZOLONE,5-(AMINOMETHYL)-	2763964	N	N	Y	Y	N	N
2-AMINO-5-NITROANIOLE	see 5-NITRO-o-ANISIDINE							
4-AMINOPYRIDINE	4-PYRIDINAMINE	504245	N	N	Y	Y	N	Y
AMITROLE	1H-1,2,4-TRIAZOL-3-AMINE; AMEROL	61825	N	N	Y	N	Y	N
AMMONIA	NONE	7664417	Y	N	Y	N	N	N
AMMONIUM ACETATE	NONE	631618	Y	N	Y	N	N	N
AMMONIUM BENZOATE	NONE	1863634	Y	N	Y	N	N	N
AMMONIUM BICARBONATE	NONE	1066337	Y	N	Y	N	N	N
AMMONIUM BICHROMATE	NONE	7789095	Y	N	Y	N	N	N
AMMONIUM BIFLUORIDE	NONE	1341497	Y	N	Y	N	N	N
AMMONIUM BISULFITE	NONE	10192300	Y	N	Y	N	N	N
AMMONIUM CARBAMATE	NONE	1111780	Y	N	Y	N	N	N
AMMONIM CARBONATE	NONE	506876	Y	N	Y	N	N	N
AMMONIUM CHLORIDE	NONE	1215029	Y	N	Y	N	N	N
AMMONIUM CHROMATE	NONE	7788989	Y	N	Y	N	N	N
AMMONIUM CITRATE, DIBASIC	NONE	3012655	Y	N	Y	N	N	N
AMMONIUM FLUOBORATE	NONE	133826830	Y	N	Y	N	N	N
AMMONIUM FLUORIDE	NONE	1212518	Y	N	Y	N	N	N
AMMONIUM HYDROXIDE	NONE	1336216	Y	N	Y	N	N	N
AMMONIUM N-NITROSOPHENYLHYDROXYLAMINE	see CUPFERRON							
AMMONIUM OXALATE	NONE	6009707	Y	N	Y	N	N	N
		5972736						
		14258492						
AMMONIUM PICRATE	PHENOL, 2,4,6-TRINITRO- AMMONIUM SALT	131748	N	N	Y	Y	N	Y
AMMONIUM SILICOFLUORIDE	NONE	16919190	Y	N	Y	N	N	N
AMMONIUM SULFAMATE	NONE	7773060	Y	N	Y	N	N	N
AMMONIUM SULFIDE	NONE	12135761	Y	N	Y	N	N	N
AMMONIUM SULFITE	NONE	10196040	Y	N	Y	N	N	N
AMMONIUM TARTRATE	NONE	14307438	Y	N	Y	N	N	N
		3164292						
AMMONIUM THIOCYANATE	NONE	1762954	Y	N	Y	N	N	N
AMMONIUM THIOSULFATE	NONE	7783188	Y	N	Y	N	N	N
AMMONIUM VANADATE	VANADIC ACID, AMMONIUM SALT	7803556	N	N	Y	N	N	N
AMYL ACETATE	NONE	628637	Y	N	Y	N	N	N
ISO-		123922						
SEC-		626380						
TERT-		625161						
ANILINE	BENZENAMINE; AMINOBENZENE	62533	Y	N	Y	N	N	N
o-ANISIDINE AND o-ANISIDINE HYDROCHLORIDE	2-METHOANILINE	92519	N	N	N	N	Y	Y
ANTHRACENE	NONE	120127	N	Y	Y	N	N	N
10-ANTHRACENEDIONE	see 2-AMINOANTRAQUINONE							
ANTIMONY	NONE	7440360	N	Y	Y	N	N	N
ANTIMONY AND COMPOUNDS	NONE		N	Y	Y	N	N	N
ANTIMONY PENTACHLORIDE	NONE	7647189	Y	N	Y	N	N	N
ANTIMONY POTASSIUM TARTRATE	NONE	28300745	Y	N	Y	N	N	N
ANTIMONY TRIBROMIDE	NONE	7789619	Y	N	Y	N	N	N
ANTIMONY TRICHLORIDE	NONE	10025919	Y	N	Y	N	N	N

CHEMICAL NAME	OTHER PARAMETER NAMES	CASRN	CWA 311(b)(4)	CWA 307(a)	CERCLA 302.4	RCRA 261.33e	USCODE 241b.4	ARS- 423 2430 99-243
ACENAPHTHENE	1,8-HYDROACENAPHTHYLENE; ETHYLENEAPHTHALENE	83329	N	Y	Y	N	N	N
ACENAPHTHYLENE	NONE	208968	N	Y	Y	N	N	N
ACETALDEHYDE	ETHANAL; ETHYLALDEHYDE	75070	Y	N	Y	N	N	N
ACETALDEHYDE, CHLORO-	CHLOROACETALDEHYDE	107200	N	N	Y	Y	N	Y
ACETALDEHYDE, TRICHLORO-	CHLORAL; TRICHLOROETHANAL	75876	N	N	Y	N	N	N
ACETAMIDE, N-(AMINOTHIOXOMETHYL)-	1-ACETYL-2-THIOUREA	591082	N	N	Y	Y	N	Y
ACETAMIDE, N-(4-ETHOXYPHENYL)-	PHENACETIN	62442	N	N	Y	N	Y	Y
ACETAMIDE, N-9H-FLUOREN-2-YL	2-ACETYLAMINOFLUORENE	53963	N	N	Y	N	Y	Y
ACETAMIDE, 2 FLUORO-	FLUOROACETAMIDE	640197	N	N	Y	Y	N	Y
ACETATE FAST ORANGE R	see 1-AMINO-2-METHYLANTHRAQUINONE							
ACETIC ACID	ETHANIC ACID; METHANE CARBOXYLIC ACID	64197	Y	N	Y	N	N	N
ACETIC ACID, ETHYL ESTER	ETHYL ACETATE; ACETIC ETHER	141786	N	N	Y	N	N	N
ACETIC ACID, FLUORO-, SODIUM SALT	FLUOROACETIC ACID, SODIUM SALT	62748	N	N	Y	Y	N	N
ACETIC ACID, LEAD SALT	LEAD ACETATE; SUGAR OF LEAD	301042	Y	N	Y	N	Y	N
ACETIC ACID, THALLIUM(1) SALT	THALLIUM ACETATE	563688	N	N	Y	N	N	N
ACETIC ANHYDRIDE	NONE	108247	Y	N	Y	N	N	N
ACETIC ETHER	see ACETIC ACID, ETHYL ESTER							
ACETIMIDIC ACID, N-[(METHYLCARBAMOYL)OXY] THIO-, METHYL ESTER	METHOMYL	16752775	N	N	Y	Y	N	Y
ACETONE	2-PROPANONE; DIMETHYLKETONE	67641	N	N	Y	N	N	N
ACETONE CYANOHYDRIN	2-METHYLLACTONITRILE, PROPANENITRILE,2-HYDROXY-2-METHYL	75865	Y	N	Y	N	N	N
ACETONITRILE	ETHANENITRILE	75058	N	N	Y	N	N	N
3-(alpha-ACETAMYLBENZYL)-4-HYDROCOUMARIN AND SALTS	see WARFARIN							
ACETOPHENONE	ETHANONE, 1-PHENYL-; METHYL PHENYL KETONE	98862	N	N	Y	N	N	N
2-ACETLYAMINOFLUORENE	ACETAMIDE, N-9H-FLUOREN-2-YL	53963	N	N	Y	N	Y	Y
ACETYL BROMIDE	NONE	506967	Y	N	Y	N	N	N
ACETYL CHLORIDE	ETHANOYL CHLORIDE	75365	Y	N	Y	N	N	N
1-ACETYL-2-THIOUREA	ACETAMIDE, N-(AMINOTHIOXOMETHYL)-	591082	N	N	Y	Y	N	Y
ACRALDEHYDE	see ACROLIEN							
ACROLIEN	2-PROPENAL;ACRALDEHYDE; ACYLIC ALDEHYDE	107028	Y	Y	Y	Y	N	Y
ACRYLAMIDE	2-PROPENAMIDE	79061	N	N	Y	N	N	N
ACRYLIC ACID	2-PROPENOIC ACID	79107	N	N	Y	N	N	N
ACRYLON	see ACRYLONITRILE							
ACRYLONITRILE	2-PROPENENITRILE; ACRYLON; CARACRYL	107131	Y	Y	Y	N	Y	Y
ACYLIC ALDEHYDE	see ACROLIEN							
ADIPIC ACID	PIRIMOPHOSMETHYL	124049	Y	N	Y	N	N	N
ADRIAMYCIN	DOXORUBICIN; 14-HYDROXYDAUNOMYCIN; ADRIABLASTINE	23214928	N	N	N	N	Y	Y
ADRIABLASTINE	see ADRIAMYCIN							
AFLATOXINS	NONE	1162659	N	N	N	N	Y	Y
ALDICARB	PROPANAL, 2METHYL-2-(METHYLTHIO)-,O-[(METHYLAMINO) CARBONYL] OXIME	116063	N	N	Y	N	N	N
ALANINE, 3-[P-BIS(2-CHLOROETHYL)AMINO] PHENYL- L-	MELPHALAN; NITROGEN MUSTARD	148823	N	N	Y	N	Y	Y
ALDRIN	1,2,3,4,10-10-HEXACHLORO-1,4,4a,5,8,8a-HEXAHYDRO- 1,4:5,8-ENDO, EXO-DIMETHANONAPHTHALENE	309002	Y	Y	Y	Y	N	Y
ALLYL ALCOHOL	2-PROPEN-1-OL; PROPENYLALCOHOL	107186	Y	N	Y	Y	N	Y
ALLYL CHLORIDE	3-CHLORO-1-PROPENE	107051	Y	N	Y	N	N	N
ALUMINUM PHOSPHIDE	NONE	20859738	N	N	Y	N	N	N
ALUIMINUM SULFATE	NONE	10043013	Y	N	Y	N	N	N
AMEROL	see AMITROLE							
2-AMINO-9	see 2-AMINO ANTHRAQUINONE							

APPENDIX C

The following chemical list has been designed to allow a person to determine which of the rules, statues or regulations a chemical belongs under.

The columns are set up so as to provide information on a chemical. The first column is an alphabetical list of the chemicals listed under the following;

1. Clean Water Act Sections 307(a) and 311(b)
2. CERCLA 102 as 302.4 of 40Code of Federal Regulations
3. RCRA 40 Code of Federal Regulations Section 261.33(e)
4. United States Code 42 241(b)(4).
5. A.R.S. 49-243D.

Since many chemicals have more than one name, the first column contains both the primary and the secondary names. Information on the chemicals is provided under the primary name, therefore when referencing the list by other than a primary name the second column will refer you to the primary name. The second column also provides a list of secondary names which a chemical may be referred to. The third column is the Chemical Abstracts Service Registry Number (CASRN) this number is unique to the chemical and therefore can be used as a final method of identifying the chemical. The next 3 columns are considered Hazardous Substances under ARS 49-201.16, and are the Clean Water Act Sections 311(b), 307(a) and CERCLA 102 as 302.4 of 40 Code of Federal Regulations. The seventh column corresponds to 40 Code of Federal Regulations 261.33(e) and is regulated under the Resource Conservation Recovery Act. The eighth column is United States Code 42 241(b)(4). The last column is organic substances referenced in ARS 49-243(D).

If a "Y" (or yes) is given in any of the columns 4 through 9 it indicates the chemical is included on the list designated for that column similarly an "N" (or no) would mean that the chemical is not included on that list.

A "Y" in any of the columns 4 through 8 would mean the chemical is a hazardous substance as defined by A.R.S. 49-201.16.

A "Y" in the column marked A.R.S. 49-243D would mean the chemical is a chemical that requires the application of BADCT without regard to cost.

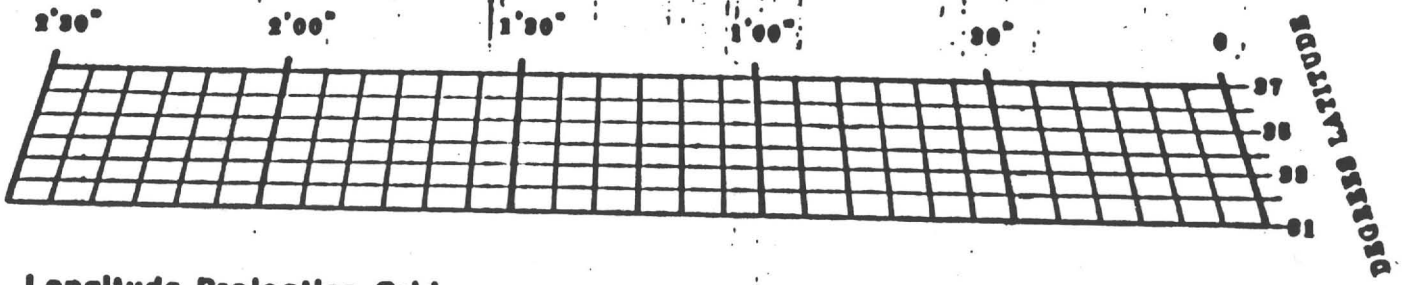


FIGURE 3: Longitude Projection Grid.

Use the degree line that corresponds to your latitude (see step 6)

FIGURE 4: Latitude Projection Grid. See step 7.

Close-up of NE corner of USGS Topographic Quadrangle

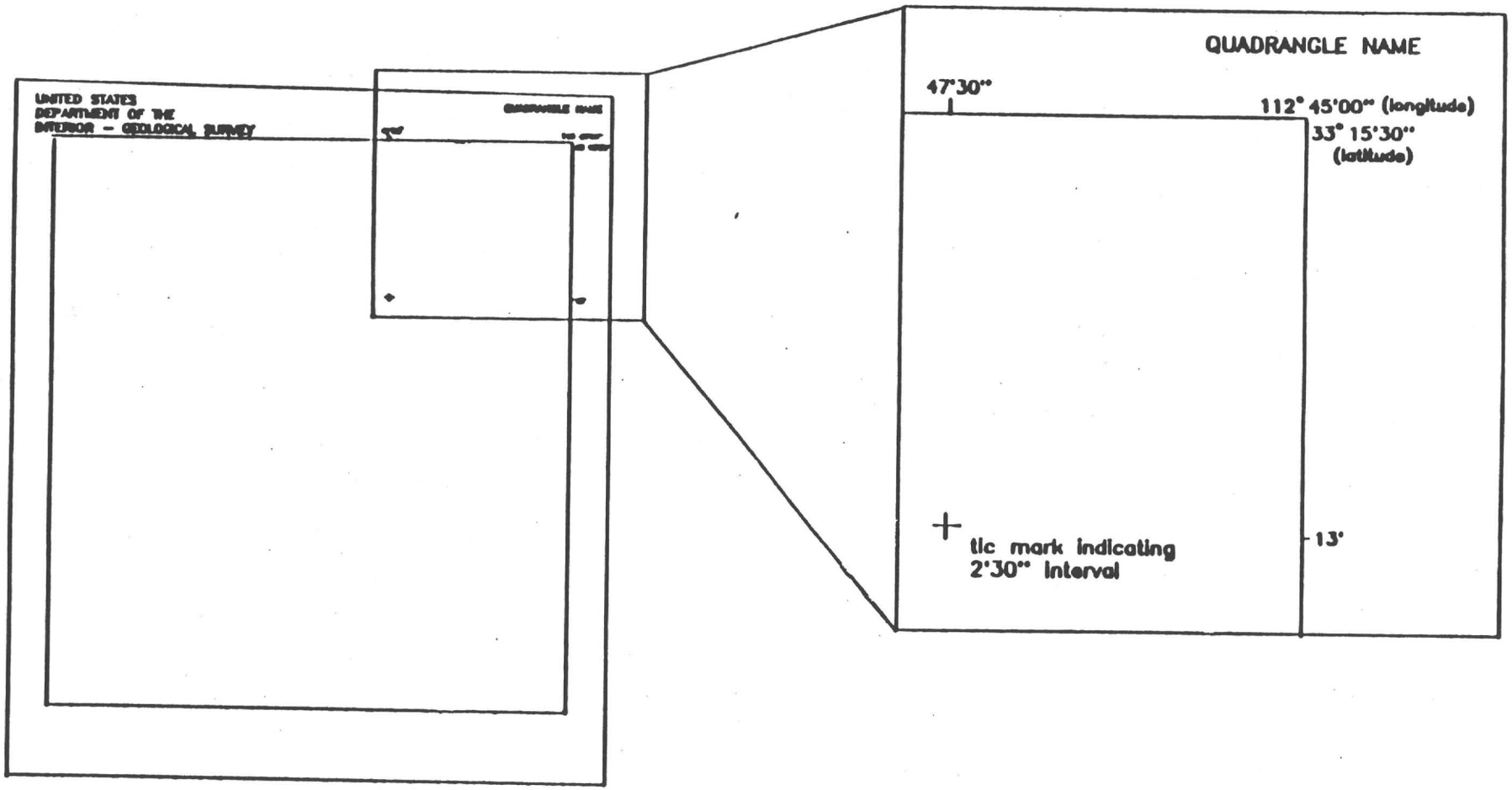
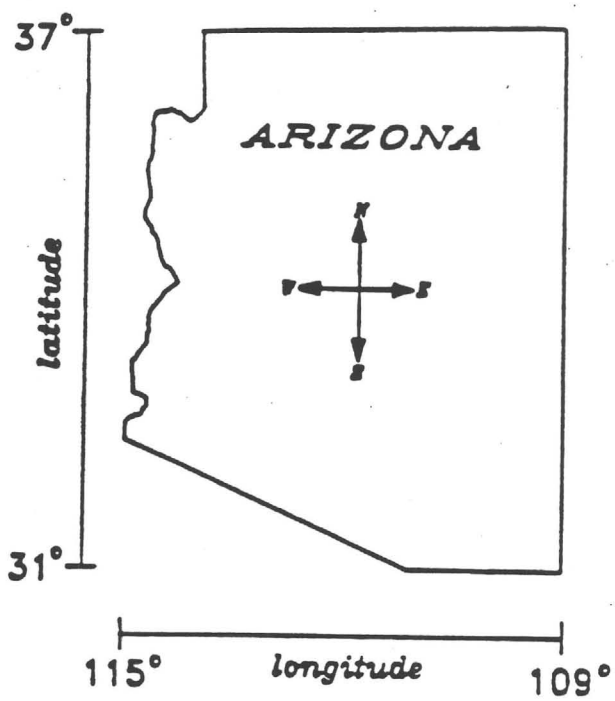


figure 1

Figure 2

2a.



LONGITUDE (x)

1 degree = 305,572 ft = 57.873 miles
1 minute = 5093 ft = 0.965 miles
1 second = 85 ft = 0.016 mile

1 mile = 0.02 degree
1 mile = 1.04 minute
1 mile = 62.20 seconds

LATITUDE (y)

1 degree = 364,120 ft = 68.962 miles
1 minute = 6,069 ft = 1.149 miles
1 second = 101 ft = 0.019 mile

1 mile = 0.01 degree
1 mile = 0.87 minute
1 mile = 52.20 seconds

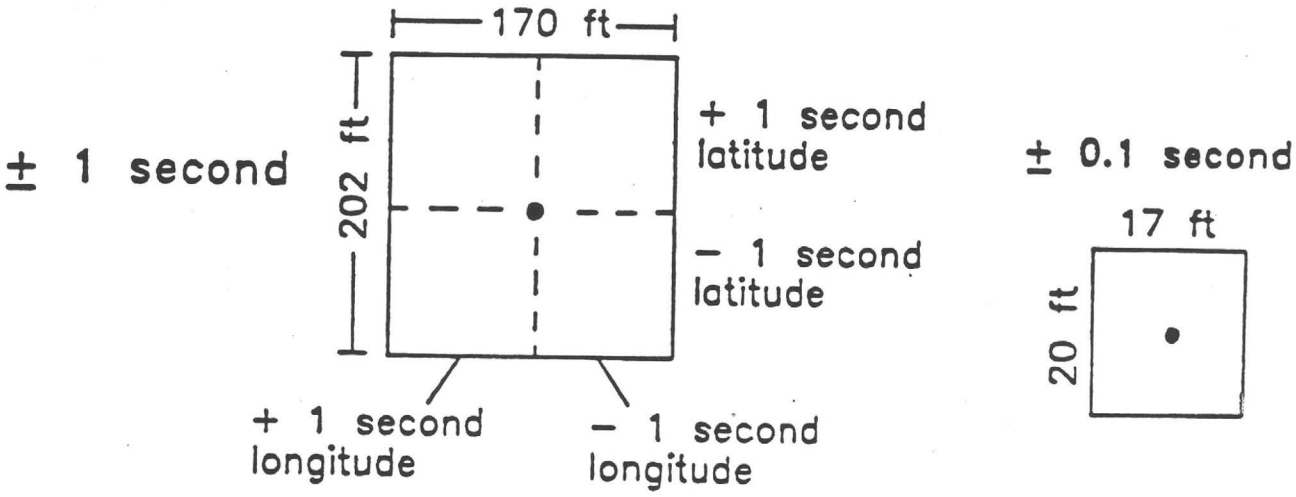
FORMAT:

LONGITUDE: ddd mm ss.s LATITUDE: dd mm ss.s
(tenth of a second preferred when available)

2b.

RANGE OF ACCURACY:

		latitude (y)	longitude (x)
EXAMPLE:	WELL LOCATION	34° 52' 30.0" /	109° 47' 30.0"



9. Take the latitude you wrote down in step 2 and add the minutes and seconds from step 8. Arizona's latitude ranges from 31 to 37 degrees , north.

The following description refers to Figures 3 and 4. Figure 3 will be used to determine longitude and Figure 4 will be used for latitude.

1. Locate the point of interest on the map (a dot or x at the site will do). Figure 2b indicates the relative distance of plus or minus one second therefore it is in your best interests to be as accurate as possible. The use of site plans, landmarks, street maps, etc. to locate your point of interest is recommended.

2. Note the latitude and longitude written in the lower right corner of the map. If your facility is located more than 2'30" from that corner you can find the latitude and longitude written at 2'30" intervals along the edges of the map. These intervals do not include the degrees, only minutes or minutes and seconds. The degrees (from the right lower corner) are added to the minutes and seconds. Make a note of the measurements closest to your point of interest. Also note the degrees of latitude for use in step #5.

3. If your point of interest is further than 2'30" from the edge use the small tic marks located at 2'30" intervals on the map (see Figure 1). Draw lines connecting the tic marks that surround your point of interest to make a square. Then proceed to the next step.

<u>To Determine Longitude:</u>

4. On the top edge of a separate sheet of paper make a mark. Lay the paper on the map so that the mark you made lies on, either the right edge of the map or on the right edge of the square you drew between tic marks, (whichever applies) and the top edge of the paper crosses your facility east to west. Mark the spot where your facility is located on the edge of the paper.

5. Lift the paper and lay it on Figure 3 so that your first mark is on the zero line of figure 3 and the number along the right side corresponds to the degrees latitude found at the lower right corner of the map.

6. Take the longitude you wrote down in step 2 and add the minutes and seconds from step 5 to get your longitude. Arizona's longitude ranges from about 109 to almost 115 degrees, west.

<u>To Determine Latitude:</u>

7. On the top edge of new clean sheet of paper make a mark. Lay the paper on the map so that the mark you made lies on, either the bottom edge of the map or on the bottom line of the square you drew between tic marks, (whichever applies) and the top edge of the paper crosses your facility north to south. Mark the spot where your facility is located on the top edge of the paper

8. Lift the paper and lay it on Figure 4 so that your first mark is on the zero point of the scale. Count the number of minutes and second between the two marks.

APPENDIX B

Single Coordinate Latitude/Longitude Interpretation.

In order to locate a unique point on the earth's surface a system of locating is needed. The system must describe a position in both a north/south and east/west direction that is not duplicated anywhere else on earth. Latitude and longitude supplies the information needed to locate that unique point.

Latitude is used to determine the location north or south of the equator along lines called parallels. The equator is designated 0° latitude and the north and south poles are 90°N and 90°S respectively. The distance between degrees of latitude is constant anywhere on the earth. The measurements are written as degrees (°), minutes (') and seconds ("). There are 60 seconds per minute and 60 minutes per degree. A typical latitude would look like the following: 33°12'45" (read as thirty three degrees twelve minutes and forty five seconds). Arizona lies between 31 and 37° north latitude.

Longitude is used to determine the location east or west of the prime meridian, which runs through Greenwich, England and is considered zero longitude, and the International Dateline is the 180th meridian. All meridians converge at the poles, and so the distance between degrees varies depending on the latitude. Therefore, unlike degrees latitude, distance between degrees of longitude vary with location. The closer the point of interest is to the north or south pole the shorter the map distance will be between degrees. The nomenclature is written the same as latitude. A typical longitude would be written like the following: 111°30'25" (read as one hundred eleven degrees thirty minutes and twenty five seconds. Arizona lies between 109 and 115° west longitude.

Useful tools for locating the latitude and longitude (lat/long) of a single coordinate are a 7.5 minute USGS topographic map (also called a quadrangle map) and a specially created projection grid designed for use with these maps (included as Figures 3 and 4). The grid is designed to compensate for changes in the distance between degrees longitude with location. A typical USGS topographic map has a name located in the upper right and lower left corners. The name is generally from a prominent town or feature located within the map boundaries. Figure 1 shows a close up of the right upper corner of a topographic map and indicates the location of the name, latitude, and longitude. Longitude is found along the top and bottom edges of the map and latitude is on the right and left edges. Tic marks in the form of a "plus" (+) are located on the map at 2'30" (2 1/2 minute) intervals (Figure 1) for use in locating the lat/long with Figures 3 and 4.

To determine the lat/long of a single coordinate you will need to purchase or use the correct 7.5 min topographic map which includes your point of interest. These maps can be found at various map stores in Arizona.

b. Five tubes in more than one sample when fewer than five samples are examined in a month.

c. Five tubes in more than twenty percent of the samples when five or more samples are examined in a month.

E. Aquifer Water Quality Standards for Turbidity

1. One nephelometric turbidity unit as determined by a monthly average except that five or fewer nephelometric turbidity units may be allowed if it can be determined that the higher turbidity does not interfere with disinfection, prevent maintenance of effective disinfectant agents in water supply distribution systems, or interfere with microbiological determinations.

2. Five nephelometric turbidity units based on an average of two consecutive days.

b. Four per 100 milliliters in more than one sample when fewer than twenty samples are examined in a month.

c. Four per 100 milliliters in more than five percent of the samples when twenty or more samples are examined in a month.

2. When the multiple tube fermentation technique and 10 milliliter standard portions are used to test the aquifer water quality, coliform bacteria shall not be present in any one of the following:

a. More than ten percent of the tubes in all the samples examined in any one month.

b. Three or more tubes in more than one sample when less than twenty samples are examined in a month.

c. Three or more tubes in more than five percent of the samples when twenty or more samples are examined in a month.

3. When the multiple tube fermentation technique and 100 milliliter standard portions are used to test the aquifer water quality, coliform bacteria shall not be present in any one of the following:

a. More than sixty percent of the tubes in all samples examined in any one month.

National Bureau of Commerce, as amended August, 1963 (and no future editions), incorporated herein by reference and on file with the Office of the Secretary of State and with the Department. If two or more radionuclides are present, the sum of their annual dose equivalent to the total body or to any organ shall not exceed 4 millirem/year. The following average annual concentrations are assumed to produce a total body or organ dose of 4 millirem/year:

Radionuclide	Critical Organ	pCi/l
Tritium	Total Body	20,000
Strontium-90	Bone Marrow	8

D. Aquifer Water Quality Standards for Microbiological Pollutants

1. When the membrane filter technique is used to test aquifer water quality, the number of coliform bacteria shall not exceed any one of the following:
   a. One per 100 milliliters as the arithmetic mean of all samples examined in a month.

Para-Dichlorobenzene	0.075

C. Aquifer Water Quality Standards for Radionuclides

1. The maximum concentration for gross alpha particle activity, including radium-226 but excluding radon and uranium, shall not exceed 15 pCi/l.

2. The maximum concentration for combined Radium-226 and Radium-228 shall not exceed 5 pCi/l.

3. The average annual concentration of beta particle and photon radioactivity from man-made radionuclides shall not produce an annual dose equivalent to the total body or any internal organ greater than 4 millirem/year.

4. Except for the radiouclides listed in this subsection, the concentration of man-made radionuclides causing 4 millirem total body or organ dose equivalents shall be calculated on the basis of a 2 liter per day drinking water intake using the 168 hour data listed in "Maximum Permissible Body Burdens and Maximum Permissible Concentration of Radionuclides in Air or Water for Occupational Exposure," National Bureau of Standards Handbook 69,

Methoxychlor	0.1
Toxaphene	0.005
2,4,-Dichlorophenoxyacetic Acid	0.1
2,4,5-Trichlorophenoxypropionic Acid	0.01
Total Trihalomethanes	0.10
Benzene	0.005

Pollutant	(mg/l)
Vinyl Chloride	0.002
Carbon Tetrachloride	0.005
1,2-Dichloroethane	0.005
Trichloroethylene	0.005
1,1-Dichloroethylene	0.007
1,1,1-Trichloroethane	0.20

Cadmium	0.010
Chromium	0.05
Lead	0.05
Mercury	0.002
Nitrate (as N)	10
Selenium	0.01
Silver	0.05
Fluoride	4.0

B. Aquifer Water Quality Standards for Organic Chemicals

Pollutant	(mg/l)
Endrin	0.0002
Lindane	0.004

APPENDIX A. AQUIFER WATER QUALITY STANDARDS

I. Narrative aquifer water quality standards (A.C.C. R18-11-405)

A. A discharge shall not cause a pollutant to be present in an aquifer classified for a drinking water protected use in a concentration which endangers human health.

B. A discharge shall not cause or contribute to a violation of a surface water quality standard established for a navigable water of the State.

C. A discharge shall not cause a pollutant to be present in an aquifer which impairs existing or reasonably foreseeable uses of water in an aquifer.

II. Numeric Aquifer Water Quality Standards (A.C.C. R18-11-406)

A. Aquifer Water Quality Standards for Inorganic Chemicals

Pollutant	(mg/l)
Arsenic	0.05
Barium	1

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Environmental Protection Agency, 1982. Test Methods for Evaluating Solid Waste Physical/Chemical Methods, Sw-846, 2nd Edition, Office of Solid Waste and Emergency Response, Washington, D.C.

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Fetter, C.W. (1983) Potential sources of contamination in groundwater monitoring, Groundwater Monitoring Review, Vol. 3, No. 2, pp 60-64.

Gibb, J.P., R. Schuller, and R. Griffin (1981) Procedures for the collection of representative water quality data for monitoring wells, Illinois Cooperative Groundwater Report 7. Illinois State

- The duration of post-closure care.

- The monitoring procedures to be implemented by the permittee, including monitoring frequency, type, and location.

- A description of the operating and maintenance procedures to be implemented for maintaining aquifer quality protection devices, such as liners, treatment systems, pump-back systems, and monitoring wells.

- A schedule and description of physical inspections to be conducted at the facility following closure.

- An estimate of the cost of post-closure maintenance and monitoring.

- A description of limitations on future land or water uses, or both, at the facility site as a result of facility operations.

- The methods to be used to control the discharge of pollutants from the facility.

- Any limitations on future land or water uses created as a result of the facility's operations or closure activities.

- The methods to be used to secure the facility.

- An estimate of the cost of closure.

- A schedule for implementation of the closure plan and the submission of a post-closure plan.

In addition, specify to what degree any of the above items would be implemented during periods of temporary cessation. The same overlying philosophy for permanent closure applies here, but on a shorter term basis.

If the closure plan indicates the possibility of continuing discharges, a proposed post-closure plan is required.

The nature of some facilities will always necessitate post-closure plans. These included landfills, mine tailing ponds.

The proposal for post-closure should include:

The purpose for the closure plan submitted with the application is to ensure the facility can control further discharges and will not cause a violation of an Aquifer Water Quality Standard to evaluate whether you are capable of meeting the costs of closure.

The closure plan should include:

- The expected lifetime of the facility.

- The approximate quantities and the chemical, biological, and physical characteristics of the materials to be removed from the facility.

- The destination of the materials to be removed from the facility and an indication that placement of the materials at that destination is approved.

- The approximate quantities and the chemical, biological, and physical characteristics of the materials that will remain at the facility.

- The methods to be used to treat any materials remaining at the facility.

e. The extent to which the amount of water available for beneficial uses will be preserved by a particular type of remedial action.

f. The technical practicability and cost effectiveness of remedial actions applicable to a site.

g. Propose a monitoring plan to determine the effectiveness of the selected remedial action alternative. Depending on the method of cleanup, monitoring could be conducted in the aquifer, vadose zone or soil or at the discharge from a treatment system. Frequency of monitoring could vary from daily to one-time at completion of the project.

D. CLOSURE PLAN

Attach a proposed closure plan. The plan should give details for closing the various discharge activities when you plan to cease the facility's operation. The Department recognizes that closure plans may change during operation. Therefore, a final closure plan will also be required 90 days prior to cessation of operation (R18-9-116.C).

levels required by permit will be based on the feasibility of achieving those levels by the chosen treatment/remedial technology.

4. The applicant should review various alternatives for remediation, and propose a specific alternative. In reviewing alternatives, applicant should consider the following factors for each alternative.

   a. Population, environmental and welfare concerns at risk

   b. Routes of exposure

   c. Amount, concentration, hazardous properties, environmental fate, such as the ability to bio-accumulate, persistence and probability of reaching the waters of the state, and the form of the substance present.

   d. Physical factors affecting human exposure such as hydrogeology, climate and the extent of previous and expected migration.

- Investigating records of previous owners or interviewing former employee

- By examining the pattern of contamination (trace back to source)

2. Outline procedures for removing, treating, containing or eliminating the source of the release

3. Evaluate the extent of the contamination by the appropriate means which may include:

- Soil gas sampling

- Soil borings

- Groundwater sampling

- Geophysical surveys

- Other methods approved by Department

Any remedial action should attempt to restore the aquifer to levels of the AWQS or other health based guidance levels. The Department will provide the applicant with these values. It is recognized that the final cleanup

C. REMEDIAL ACTION PLAN

When Required

While corrective actions conducted under a contingency plan for a permitted facility as discussed above, are a type of remedial activity, A.R.S. 49-243.G. allows for incorporation of remedial actions into a permit for existing facilities which were in operation prior to August 13, 1986.

In developing a permit application, the applicant could be directed to evaluate the vadose zone of the aquifer water quality beneath the facility site. If this evaluation indicates that past discharge practices have released hazardous substances such that the aquifer is or may be affected, the applicant may be directed to develop a remedial action plan. The implementation of the approved plan will become a permit condition.

Components of Plan

1. Identify source or sources of the release:

- Using knowledge of current disposal practices (operating practices)

equipment, and personnel to remedy the impacts of such events. The plans should contain sufficient detail that ADEQ is assured that the most timely response will be provided.

If you were required to develop a contingency plan for another program such as RCRA, it may be amended as necessary to meet the requirements of the APP program, and submitted to the Department for approval under this section.

For circumstances which do not represent an immindent and substantial endangement to the public health and environment the applicant must propose a contingency plan consistent with A.A.C. R18-9-114.D.

3. probability of discharges occurring after closure.

CONTINGENCY PLAN REQUIREMENT

A permittee must be prepared to take action to correct any of the following circumstances:

1) Violation of a permit condition

2) Violation of an Aquifer Water Quality Standard

3) Exceeding an alert level

4) An imminent and substantial endangement to the public health or the environment

You must provide the name and phone number of an emergency response coordinator who will be responsible for notifying the Department and implementing your contingency plan addressing conditions that represent an imminent and substantial endangerment to the public health or the environment.

(You) should identify equipment failures which could cause a release of toxic substances to the environment, flooding, unsanitary conditions or other events with immediate impacts. Once identified, develop a plan of action and specify necessary

- analytical methodologies to be used

All analytical work must be performed by a laboratory which is licensed by the State of Arizona, for the monitored parameter or approved by DEQ. Appendix gives some guidelines on sampling protocols. More detailed information can be found in the Departments Quality Assurance Project Plan Manual.

Frequency of Monitoring

The applicant should specify in the monitoring plan the frequency of sampling at each monitoring point. Discharge monitoring will generally be the most frequent since discharge quality may vary rapidly. In most cases groundwater monitoring should be quarterly or less.

Post Closure Monitoring

The monitor plan should specify the length of time that each monitoring point will be sampled after closure and the frequency of the sampling. The length of the post-closure monitoring period will depend on:

1. the amount of discharge

2. expected travel times to the monitoring point

designed to ensure that samples representative of the aquifer are collected and to ensure that the chemical properties of that sample are preserved until analysis. The following references discuss sampling protocols in more detail: Scalf, et. al., 1981; Gibb, et. al., 1981, Nacht, 1983. Field measurements, which should accompany laboratory analytical data, should include temperature, specific conductance or electrical conductivity (adjusted to 25°C) and pH.

All monitoring plans must include a discussion of sampling protocols to be followed. This would include:

- methods of determining time or amount of pumping prior to sampling

- methods of cleaning sampling equipment (unless dedicated pumping equipment is used)

- types of sampling containers

- sample collection, preservation and transport

- quality control procedures such as duplicate sampling, equipment blanks and travel blanks

- chain of custody

The depth and perforated interval of a well should be such that samples are obtained from the portion of the aquifer that would show the earliest effect from the discharge. For most discharges this will be the upper portion of the uppermost aquifer at the site. Therefore, most monitor wells should be completed only 20 or 30 feet into the aquifer. Exceptions to this general guideline would be: 1) discharges which are injected into or below the aquifer, 2) wells in very low yield aquifers, and 3) wells in areas with large seasonal water level variations. Where fluctuations in water table occur, these should be documented with hydrographs. Perforated intervals may be extended below or above the water table in such instances. However, in order to collect a representative sample, pmp intakes should be set no more than 10 feet below the projected pumping water level.

Sampling Protocols

Water standing in a well or the gravel pack annulus is in contact with the atmosphere and well casing. Therefore, its chemistry may differ from formation water that has not been exposed to the atmosphere. Just as samples from unpurged wells are not representative, samples from overpurged wells may also not be representative. Similarly once a sample is removed from the aquifer it's chemistry may change in response to its new environment. Because of these factors, sampling protocols must be

TABLE 3: (continued)

Method	Description	Advantages	Disadvantages	References
5. Gas-drive Samplers	Similar to air-lift samplers, but gas (usually nitrogen) used instead of air to minimize alteration of water quality.	1. Portable 2. Can be used in small diameter wells 3. Inexpensive 4. Can be constructed with inert materials.	1. Requires compressed gas 2. Possible depth limitation 3. Alteration of water quality may occur if gas if gas contacts water	Robin, Dytynyhyn, & Sweeney 1982
6. Gas-operated Bladder pump	These pumps contain a collapsible membrane. Water enters membrane until full; gas is then applied to annulus around membrane, forcing water upwards.	1. Can be constructed of inert materials 2. Gas does not contact water sample 3. Small diameter	1. Requires compressed gas 2. Low pumping rates 3. Expensive	
7. Gas-driven Piston pump	Gas enters and exhausts from chambers between two pistons. Water enters on suction stroke, and is expelled in pressure stroke.	1. Gas does not contact water sample 2. Can be used for deep water levels 3. Small diameter	1. Expensive 2. Low pumping rates 3. Requires compressed gas 4. Particulate matter may damage pump unless suction line filtered.	

TABLE 3: (continued)

Method	Description	Advantages	Disadvantages	References
2. Suction Lift Pumps	These pumps create a vacuum inside a tube extending below the water level.	1. Portable and inexpensive.	1. Sampling limited to groundwater depths less than about 20 feet (the practical maximum suction lift) 2. Can strip volatile organics from sample	
3. Portable	Two types of portable submersible pumps are available. The newest type has a small diameter (as low as 1"), is good to a depth of 160 ft., and may be suitable for organics The older portable submersible pumps have been used to depths of 300 ft., but require a 3-inch I.D. casing.	1. Portable. 2. Depending upon pump size, large pumping rates and sampling from deep wells is possible. 3. Can be used to prepump prior to sampling. 4. Expensive	1. Larger pumps may require use of larger service type type vehicle 2. With conventional construction materials, many not be suitable for organics. 3. May be difficult to prevent cross-contamination if pump is used for sampling more than one well.	
4. Air-lift	Air is applied to force water out of a discharge tube.	1. Portable or permanent. 2. Can be used to prepump prior to sampling.	1. Oxidation a problem 2. No suitable for pH sensitive parameters, such as metals. 3. Stripping of volatile compounds may occur 4. The primary limitation is the potential alteration of water quality. 5. Possibility of introducing contaminants through air.	

TABLE 3: (continued)

Method	Description	Advantages	Disadvantages	References
b. Teflon	The expense of this material may make it somewhat impractical for some applications.	1. Lightweight 2. Inert	1. Expensive 2. Not readily available	
c. Mild Steel	This material is excellent for use in organic monitoring Should not be used in corrosive situations or where monitoring for metals.	1. Strong and rigid 2. Resistant to corrosion and oxidation 3. Readily available	1. Heavy 2. May leach metals 3. Not chemically resistant	
d. Stainless Steel	This material is excellent for all but acidic waters.	1. Strong and rigid 2. Resistant to corrosion and oxidation 3. Readily available	1. Heavy 2. May corrode and leach chromium in very acidic waters. 3. Expensive (the primary limitation)	
Groundwater Sampling Apparatus				
1. Bailers	In its simplest form, a bailer consists of a pipe closed at one end and open at the other. A cable is attached to the open end. To collect a sample, the bailer is lowered into a well below the water level. The filled container is then raised to the surface.	1. Can be constructed with materials compatible with parameter(s) of interest (see II.B.2) 2. Inexpensive enough that separate bailer may be dedicated to each well 3. No power required 4. Outgassing of volatile organics minimized.	1. Impractical to evacuate stagnant water in well 2. Transfer of sample to sample bottle may result result in aeration	Gibb, Schuller, and Griffin 1981 Schalf, McNabb, Dunlap Cosby, and Fryberger (1981) Nacht (1983) Sisk (1981)

TABLE 3: Summary of Monitoring Well Construction Materials and Sampling Devices

Method	Description	Advantages	Disadvantages	References
Monitoring Well Construction				
1. Well Diameter				
a. Two-inch wells	Used where transmissivity is low or unknown	1. Inexpensive 2. Sampling techniques would not cause loss of volatiles.	1. May be difficult to develop 2. Samples small area 3. Use limited to monitoring	Schalla and Oberlander (1983)
b. Four-inch wells	Used where well yields are low.	1. Most development techniques possible 2. Suitable for most situations 3. May be used to perform dynamic sampling.	1. May not have capacity for use as withdrawals well for clean-up activities.	
c. Six-inch wells	Used where transmissivity is high.	1. All development techniques possible 2. Samples large area 3. Usually has capacity for use as withdrawal well for clean-up activities.	1. Expensive 2. Large volume of contaminated water to dispose of.	
2. Casing Materials				
a. PVC	This plastic is excellent for use in inorganic monitoring There may be depth limitations due to relative weakness of material. Schedule 80 may be necessary for depths over 100 feet.	1. Lightweight 2. Resistant to acids and alkalies 3. Inexpensive 4. Readily available	1. Weak, less rigid than steel 2. May absorb or leach organic organic chemicals 3. May not bond well with cement seal.	Curran and Tomson (1983 Fetter (1983 Miller (1982 Barcelona, Gibb, and Miller (1983

- location of pump within the perforated interval

It is important that wells be located, constructed and sampled in such a way as to ensure the collection of samples that are representative of the groundwater. Table 3 summarizes the advantages and disadvantages of different well sizes, casing materials and samplers along with references for further information. All wells must be constructed in accordance with Arizona Department of Water Resources Well Regulations (A.C.R.R. Title 12, Chapter 15, Article 8). A variance of these minimum onstruction standards may be necessary to achieve proper monitoring configurations. Prior to drilling, a permit to drill must be obtained from the Operations Division of the Department of Water Resources. Any necessary variances must be requested when applying for the drilling permit.

Monitoring Instrumentation

Unsaturated (Vadose) Zone Monitoring

If a facility is permitted as a non-discharge facility, vadose zone monitoring may be required to document that there is no fluid movement. Wilson (1981 and 1982) and Everett, et. al. (1983) present the various vadose zone monitoring techniques to assess fluid movement.

Saturated Zone Monitoring

A monitoring well is necessary for obtaining samples of groundwater for analysis. In designing a monitoring well, the necessary considerations include:

- well size (diameter)
- number, location and length of perforated intervals
- sealing
- casing material
- type, materials, and construction of samplers or pumps

Good monitoring parameters will:

- have high concentrations in the discharge relative to background concentrations

- have high mobility in the subsurface and therefore, potential for migrating to groundwater and

- be of public and environmental health concern

Generally, any effluent constituent which may affect the use of the water supply should be monitored. However, if the constituent has a low mobility in the subsurface and, therefore, is not expected to appear at the monitoring location, a more conservative constituent (one with greater surface mobility) may be chosen as an indicator parameter. Once an increase in this indicator parameter is detected, complete constituent monitoring will begin. Background water quality must be determined for all constituents which may affect use even if an indicator parameter will be used.

The Department will make the final determination of the constituents to be monitored upon review of the facility's recommendations and rationale. These constituents will be listed in the groundwater permit along with provisions for reevaluating the monitoring constituents as data are generated and interpreted.

Constituents to be Monitored

In developing a monitoring program, the constituents to be monitored should be determined early through consultation with DEQ. In many cases this early consultation is important because the applicant will begin monitoring prior to the permit application in order to collect ambient data. The type of well construction and sampling equipment may vary greatly for different parameters (Scalf, et al. 1981; Barcelona et al. 1983; and Schalla and Oberlander, 1982).

The identification of which constituents to be monitored will be based upon a consideration of:

- existing concentration levels of major ions in groundwater (i.e. background concentrations)

- constituents known to be in the effluent and/or any expected degradation products of those constituents

- the subsurface mobility of each of the constituents in the discharge

- constituents in the discharge which have a potential to adversely affect the use of the groundwater

preservations, transportation, chain of custody, method of analysis and QA/QC procedures

- frequency of sampling

- post-closure monitoring

- record keeping and reporting

It is the responsibility of the facility to submit a plan that will produce factual, legally valid data. If DEQ finds the submitted monitoring plan adequate it will be incorporated as a condition of the permit. The following sections give some general information and references which may be useful in preparing the components of the monitoring plan.

Location of Monitoring Points

Monitoring points for groundwater monitoring should be located such that they coincide with the compliance point or are not farther away from the discharge than the compliance point. (See definition of compliance point in chapter 2). There should be a sufficient number of monitor points to assure that standards are not violated or that control are functioning properly. All monitoring point locations must be given in latitude and longitude.

- concentration of constituents of concern in the discharge

- applicable aquifer water quality standards for constituents of concern

- the level of uncertainty regarding the effect of the discharge on groundwater quality

- proximity of water supply wells

Components of a Monitoring Plan

In proposing a monitoring plan the applicant should specify the following:

- number, location, and construction features of monitoring points and justification

- monitoring instrumentation (description of equipment to be used and method of installation)

- constituents to be monitored

- method of sampling, field measurements, sampling protocols, volumes to be purged from wells, sample

- Control Technology Monitoring

  This activity tests the unsaturated zone to determine if liners or other control mechanisms are functioning as designed. Alert levels are typically used here. Detection usually triggers a contingency action to repair or maintain the facility to prevent discharge.

- Groundwater Monitoring

  Groundwater monitoring may be required at a point of compliance to assure compliance with Aquifer Water Quality Standards or it may be required between the discharge location and the point of compliance in order to refine predictions on the facilities impact.

- Determining When Monitoring is Necessary

Factors to be considered in determining if monitoring will be required include:

- discharge quantity

Types of Monitoring

Monitoring may be required at a facility to confirm that the predicted characterization of the discharge is correct, to assure that discharge mitigation devices are functioning properly, or to confirm that the discharge is not causing a violation of an aquifer water quality standard at the point of compliance. The type and location of monitoring will be different depending on which of these goals it is to achieve. There are three main types of monitoring:

- Discharge Monitoring

This activity determines the quality or quantity of the potential discharge before it is released into the discharging facility. Discharge monitoring may be required when a permit specifies a level of quality or limit of quantity for the discharge. The permit will specify a maximum disposal level (MDL) or limit when the application indicates it is necessary to either treat the discharge or limit discharge to meet aquifer water quality standards or BADCT. Discharge monitoring may also be required if there is a potential for unpermitted chemicals being discharged.

The timeframe for migration is left open-ended in the statutory definitions. Modeling pollutant migration, however, requires that a time period be specified. For short-lived projects the timeframe may be the project life, including a reasonable post-closure period. For long-term projects the applicant should present a DIA that represents steady state conditions for the discharge.

Because DIA is defined by pollutant migration that results from a discharge, the DIA may incorporate existing contaminant plumes that may be caused to migrate. Facilities that discharge high volumes of fluid and that will influence groundwater flow rates and directions should consider known pollutant plumes in developing their DIA. Causing plume migration will not be grounds for permit denial. However, permit conditions may be set to control the impact of a facility on existing groundwater contamination problems.

6. Monitoring Plan Considerations

An applicant for an APP may propose a monitoring plan for the facility. The specifics of each monitoring program should be tailored to each facility, characteristics of the discharge and the type or purpose of monitoring.

- Geometry of the system including aquifer depth, saturated thickness, confining layers, and mixing zones.

- Groundwater flow parameters such as direction gradient, recharge zones, and pumping wells.

- Ambient pollutant concentrations.

- Pollutant concentrations in discharge and discharge rates. Pollutant characteristics such as dissolved or phase separating.

- Estimated or test values of dispersivity.

- Retardation factor or distribution coefficient for solutes that can be adsorbed and decay factors if applicable.

If appropriate data are not available, the applicant may be directed to perform on-site or laboratory testing to gather the information or may be allowed to use justifiable assumptions based on published ranges of material properties.

Using the "potential" "extent" of "migration" does not tie the discharge impact area to any standard concentrations, but implies that if pollutant could migrate into an area in any concentration, that area is part of the DIA. For practical purposes, the edge of the DIA should be that point at which the pollutant, because of dilution, dispersion, adsorption, or degradation, reaches a level indistinguishable from ambient concentrations by standard test methods.

Establishing the DIA

To establish the DIA for a facility, the applicant should use some form of quantitative model to predict pollutant migration. Many different types of models are available and they all have their applications. In most cases the appropriate models for discharging facilities will be analytical or semianalytical. It is the applicant's responsibility to select and apply a model that best represents their site conditions and operating scenario.

The following data should be incorporated into the transport model:

2) Pollutant: "fluids, contaminants, toxic wastes, toxic pollutants, dredged spoil, solid waste, substances and chemicals, pesticides, herbicides, fertilizers and other agricultural chemicals, incinerator residue, sewage, garbage, sewage sludge, munitions, petroleum products, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and mining, industrial, municipal and agricultural wastes or any other liquid, solid, gaseous or hazardous substances." Collectively, these definitions imply that establishing the DIA for a facility requires consideration of the most mobile constituents likely to be transported within the aquifer as a result of project operation.

The constituents to be considered are not limited to those regulated by numeric Aquifer Water Quality Standards, but include virtually any kind of fluid, solid, etc. DEQ expects the applicant to make the best effort to select and evaluate the most mobile and/or most concentrated pollutants that might be caused to migrate. In some cases, water may be the most mobile "pollutant" and may be used to define the DIA.

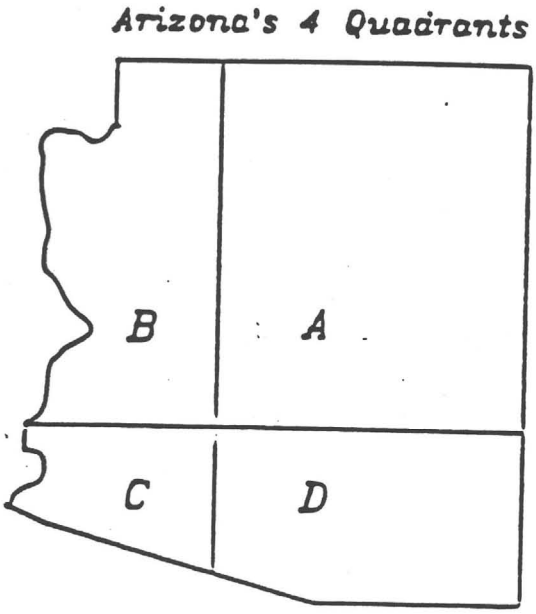
5. Discharge Impact Area Assessment

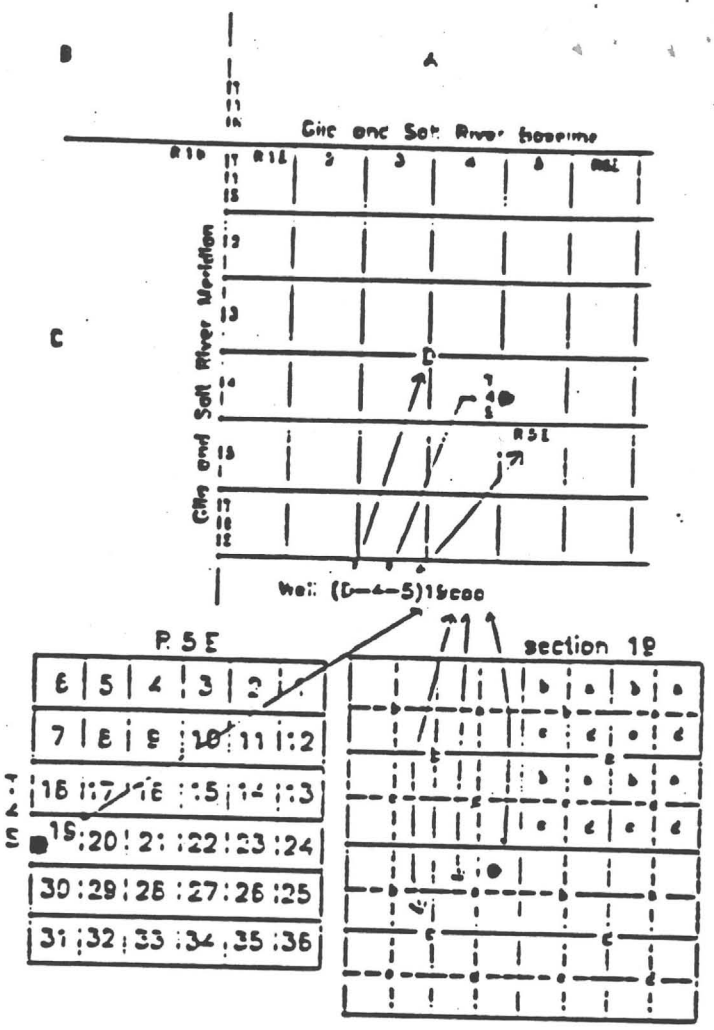
The concept of Discharge Impact Area (DIA) is a key component of the Aquifer Protection Permit Program. The applicant may be directed by the department to supply information regarding hydrogeologic conditions, uses of groundwater, and existing water quality in the facility's DIA. The Department will evaluate the proposed project's effects with the DIA and may set permit conditions such as Alert Levels that are designed to regulate water quality impacts within that area. Facilities which may be required to perform discharge impact assessments include any facilities with large volumed discharges, such as WWTPs, recharge projects and injection wells.

Statutory Definitions

A.R.S. 49-201 contains two definitions that present the Discharge Impact Area in very broad terms:

1) Discharge Impact Area: "the potential areal extent of pollutant migration, as projected on the land surface, as a result of a discharge from a facility."





The well numbers used by the Geological Survey in Arizona are in accordance with the Bureau of Land Management's system of land subdivision. The land survey in Arizona is based on the Gila and Salt River meridian and base line, which divide the State into four quadrants. These quadrants are designated counterclockwise by the capital letters A, B, C, and D. All land north and east of the point of origin is in A quadrant, that north and west in B quadrant, that south and west in C quadrant, and that south and east in D quadrant. The first digit of a well number indicates the township, the second the range, and the third the section in which the well is situated. The lowercase letters a, b, c, and d after the section number indicate the well location within the section. The first letter denotes a particular 160-acre tract, the second the 40-acre tract, and the third the 10-acre tract. These letters also are assigned in a counterclockwise direction, beginning in the northeast quarter. If the location is known within the 10-acre tract, three lowercase letters are shown in the well number. In the example shown, well number (D-4-5)19caa designates the well as being in the NE quarter of the NE quarter of the SW quarter, section 19, township 4 south, range 5 east. Where more than one well is within a 10-acre tract, consecutive numbers beginning with 1 are added as suffixes.

reference: Water Resources Data Arizona Water Year 1985
U.S. Geological Survey Water-Data Report AZ-85-1
White, N.D. and Garrett, W.B.

Figure 2 - WELL NUMBERING SYSTEM IN ARIZONA

- A discussion of groundwater flow conditions - including flow rates, volumes and direction (seasonal changes in flow direction due to surface water recharge or groundwater pumpage should be described). Trends in water levels with time should be discussed and relevant hydrographs and equipotential maps should be included. All applications must identify the direction of groundwater flow in order to determine the point of compliance

- groundwater quality

Document ambient groundwater quality using sample data from wells. The specific parameters for which ambient groundwater quality must be characterized, will depend on the characteristics of the discharge.

- include calculations showing that design of any diversion or containment structures are adequate to handle anticipated surface water flows.

4. <u>Groundwater Hydrology</u>

This section should provide a good regional and site-specific discussion of groundwater and its relationship to the geology of the site, and, at a minimum, provide the following:

- Depth to groundwater

Give location of wells measured, date of measurement, location of measuring point and its height relative to land surface, time since well pumped prior to measurement, and any known construction data on the well, such as total depth and perforated intervals. Indicate if any wells are pumping in the vicinity at time of the measurement. This information should be given in tabular form. When giving well locations, use the Bureau of Land Management system of land subdivision (Figure 2). If drillers logs are available, copies should be included

Water level elevation contour map (with data points plotted)

3. <u>Surface Water Hydrology</u>

This section should include:

- the location of any perennial or ephemeral surface water bodies (these can be included on the location or site plan maps if appropriate)

- the distance of discharge areas from surface water bodies

  if there are perennial surface water bodies in the area of the discharge, the application should address the discharge's effect on the surface water quality relative to the water quality standards for the water body(s)

- flow characteristics of streams (when giving flow rates, give location, method and date of measurement, the annual mean flow, and period of record.)

- the location of the 100 year flood plain (this may be shown on the location map or site plan where the scale is appropriate)

organic content, and mineral content). This type of information will be required where compacted soil liners are proposed or where the soil or vadose zone is being relied on for pollutant removal.

2. <u>Subsurface Geology</u>

- cross sections;

  Include well logs used to construct the cross sections. Cross sections may be required where there are multiple geologic units present near the facility, where multiple aquifer systems exist beneath the facility or where wells from which data are presented, are completed at largely different depths. An example of an instance that would require geologic cross sections would be an application for a mining operation.

- thickness and water bearing characteristics of each geologic unit. Identify and characterize aquifers and geologic units of limited permeability. Include information on composition, grain size, prosity, permeability, and specific capacity.

A. SITE HYDROGEOLOGY

The information presented in this section will be critical to the permit decision making process, therefore, special attention should be paid to presenting and discussing this element. Information to be supplied in this section may include, but is not limited to, the items discussed below:

1. Surficial Geology

This section should discuss:

- geomorphology (topography and drainage) if the site will be altered to change the topography or redirect drainage, plans showing these changes should be presented

  This information will be required for all lined facilities (surface impoundments and landfills) since protecting the facility from run on will be important for proper sizing of impoundments and prevention of leachate formation in landfills. Also for these types of facility sites estimations of volumes of surface water flow will be needed (see section on Surface Water hydrology)
- site soil descriptions (type, horizontal and vertical distribution, characteristics such as infiltration rates,

IV. SUPPLEMENTAL INFORMATION REQUESTED BY THE DIRECTOR

This chapter describes how to gather and present additional information which the Director may request to determine if a permit can be issued for a given facility. A.A.C. R18-9-108.C. provides the scope of the information the Director may need to consider. Much of this information can be described as hydrologic or geologic in nature. However, because of familiarity with your facility, you may be asked to propose items such as alert levels, discharge limitations and temporary closure measure which will be established as permit conditions.

We have attempted to describe under which conditions or for what types of facilities some of this information will likely be required. Remember, this is guidance. There are no absolute answers. If you are unsure of your specific situation, discussion with Department personnel is encouraged.

8. Past Performance

Another part of Director's determination that the applicant is capable of fully carrying out the terms and conditions of the permit, he must consider the applicant's past performance in the arena of environmental protection.

Provide a brief description of any action for the enforcement of federal or state law, rule or regulation, or any county, city or local government ordinance relating to the protection of the environment, instituted against the applicant during the five years preceding the date of application.

9. Evidence of Zoning

Include evidence that the discharging facility complies with applicable municipal or county zoning ordinances and regulations.

- A report that contains all of the following information:

  + A description of the applicant's status as a corporation, partnership, or other legal entity.
  + A description of the person's business.
  + An indication of the person's net worth, including a description of major assets and liabilities.
  + A brief description of any judgement exceeding $100,000 rendered against the person during the five years preceding the date of the application.
  + A brief description of any bankruptcy or insolvency proceedings instituted by the person during the five years preceding the date of the application.
  + If the applicant is a corporation, the names of its executive officers and their dates of birth.

- Evidence of a bond, insurance, or a trust fund assuring that the applicant will be financially capable of meeting the closure and post-closure requirements of the permit.

- Closure; The requirements for closure are listed in A.A.C. R18-9-116.C.

- Post-closure care; If the nature of your facility will dictate conducting post-closure monitoring, maintenance or inspections, the cost of performing these must be estimated.

b.) The chief financial officer of the applicant must supply a statement that the applicant is financially capable of meeting the costs outlined in a.) above. The statement must be particular of the financial arrangements for meeting the closure and post-closure measures. If the applicant is a state or federal agency, county, city, town or other local governmental entity, this statement is adequate for this demonstration. If not, please continue.

c.) In support of the statement of the financial officer, the applicant must submit one of the following:

- A copy of the most recent of the applicant's 10K form as required by the Federal Securities and Exchange Act of 1984 as amended.

- Any work experience relevant to the design, construction, or operation of the facility.

Although the last item is fairly open ended, the Department will review other information submitted to meet this requirement.

8. Demonstration of Financial Capability

An applicant is also required to demonstrate its financial capability to comply with the permit terms and conditions. Any financial information submitted under this requirement will be held confidential.

You should direct your financial demonstration toward the ability to construct, operate, close, and assure proper post-closure care of the facility.

a.) First, estimate the total cost of each of the following aspects of the facility.

- Construction; Present a realistic estimate of these costs based on the proposed BADCT.

- Operation;

2. Sources and availability of water in the area. Including well location map and table indicating uses of wells and construction details.

3. Zoning or other existing or proposed land use plans.

7. <u>Demonstration of Technical Capability</u>

By law the Department needs to be assured the applicant is technically capable of operating the facility according to the conditions of the permit. The areas concerning the facility where technical ability or capability are most important are design, construction and operation, including installation or maintenance of discharge control measures or complying with monitoring requirements. If a different person (person may be a company) is responsible for each of these areas, you should state the name of the persons relative to their responsibilities, and supply any of the following in support of their technical capabilities to perform the stated function:

- Any pertinent licenses or certifications held by the person
- Any professional training relevant to the design, construction, or operation of the facility.

Point of Compliance for Non-Hazardous Substances

For facilities which discharge non-hazardous substances the only requirement for the location of the point of compliance is that it ensure protection of all current and reasonable future uses of the aquifer. Therefore, the point of compliance can never be further from the facility than the location of the nearest present or future use. In most cases this requirement results in a compliance point at the property boundary because wells might be developed on adjacent properties for future uses.

Determination of Uses

Since the final determination of the compliance point is dependent on location of uses of the aquifer, in proposing a point of compliance, the applicant should consider all present uses in the area and any information useful in predicting where and if future uses might develop. Such information might include:

1. Land ownership and use.

for information on proposing monitoring at the point of compliance.

Point of Compliance for Hazardous Substances

For facilities which discharge a pollutant which is a hazardous substance as defined by A.R.S. 49-201.16., A.R.S. 244.1. requires that the point of compliance for that pollutant be the limit of the pollutant management area (the area on which pollutants are or will be placed). However, if the applicant can demonstrate it would be technically impractical to monitor at the boundary of the pollutant management area or that an alternative point of compliance would be substantially less costly, an alternate point of compliance may be approved. (A.R.S. 49-244.1.) An alternate point of compliance shall never be located further downgradient than:

1. The property boundary.

2. Any point of existing or reasonably foreseeable future drinking water source.

3. 750 feet from the pollutant management area.

Applicable Standards

The Aquifer Water Quality Standards given in A.R.S. 49-223 and A.A.C. R18-11-402 and 403 are applicable to the permit process. These standards include the 29 parameters with Maximum Contaminant Levels (MCL's) set by the Administrator of the Environmental Protection Agency (EPA) and narrative standards related to human health and uses (Appendix A). As future MCL's are adopted by EPA, they will be incorporated into the Aquifer Water Quality Standards.

Point of Compliance

Propose the locations of the point of compliance for your facility. The point of compliance is defined by A.R.S. 49-244 as a vertical plane downgradient of the facility that extends through the uppermost aquifers underlying the facility. The location of the point of compliance will be determined on a case by case basis for each facility. The method of determination will differ depending on whether the discharge is a Hazardous Substance (see Appendix C) or a Non-hazardous Substance. Monitoring at the point of compliance will be in the aquifer. It may be necessary to have several monitoring locations (wells) within the plane defined as the point of compliance to adequately assure the standards are being met. See the "Monitoring Plan Considerations" section

reduction achievable, site specific hydrologic and geologic characteristics, environmental impacts and water conservation or water augmentation. Address economic impacts relative to industry-wide alternatives. Address factors that are relevant such as A.R.S. 49-243.B.1. a through h for existing facilities.

6. Demonstration of Compliance with Standards

Each application must include a demonstration that the facility's discharge will not cause Aquifer Water Quality Standards to be violated at the point of compliance. The amount of information needed to support this demonstration will vary depending on the design of the facility, characteristics of discharge from the facility, and ambient groundwater quality at the facility. For example, if a facility is designed with double liners and a leak detection system, such that no discharge will occur, the design itself could satisfy the demonstration. In such a situation, the point of compliance will be designated, but it will not be necessary to monitor at that point. However, the direction of groundwater flow and groundwater quality data would still be needed. The following sections discuss what standards are applicable to the demonstration and the statutory requirements for locating the point of compliance.

If your application is for one of these classes of facilities you should follow the guidelines in these documents for developing your BADCT demonstration. Format your demonstration consistent with the Table of Contents of the applicable document. These documents may be obtained from the ADEQ library (257-6959).

If you have a facility not covered by these documents you will need to discuss each control mechanism and the degree of discharge reduction it can provide. General discussions of the concept of BADCT given in the guidance documents may still be useful in making a determination.

Try to present your demonstration along the lines of the following discussion.

Include a description of the BADCT to be employed in the facility. Describe technology processes or operating methods employed to meet requirements of A.R.S. 49-243.B. Attaching a process flow diagram if appropriate. Include in your documentation a discussion of alternative discharge control measures, the technical and economic advantages and disadvantages of each alternative and the justification for selection or rejection of each alternative. Include an evaluation of each alternative discharge control technology in relation to discharge

c.) Finally, list the location of each discharging facility, and be sure to reference these on the site plan. Locations must be given in latitude and longitude coordinates (see Appendix B for methods of determining latitude and longitude). For large facilities such as tailings ponds or evaporation ponds give the coordinates for the center of the facility.

5. Demonstration of BADCT

Attach a description of pollutant control methodologies for the facility and a discussion of why they meet the BADCT requirement.

The Department has developed guidance documents for determining BADCT for the following classes of facilities:

1. landfills
2. mines
3. municipal WWTP
4. on-site wastewater disposal systems
5. industrial WWTP

biological components of the discharge. This could include:

Total coliform
Fecal coliform
Viruses
Parasites

Physical properties of the discharge which should be characterized may include:

Percent solids by volume
Moisture content
Temperature
Odor

b.) List the rates at which a discharge has or will occur. This may be given in appropriate units such as gpm, gpd, or tons per day.

Also provide the duration and frequency of the discharge. This can be expressed as continuous, intermittent, eg. once per day for 10 minutes, seasonal, (November thru April).

are used in processing, or would otherwise likely be present:

Endrin

Lindane

Methoxychlor

Toxaphene

Gross alpha particle activity (including radium-226 but excluding radon and uranium)

Combined Radium-226 and Radium-228

Tritium

Strontium-90

Those compounds detected by EPA Methods 601 & 602

Any hazardous substance as defined in A.R.S. 49-201.16 (See Appendix C)

Which of the specific constituents or groups of constituents from this last list to be characterized can be determined as a result of consultation with DEQ or the pre-application meeting.

Facilities which will be discharging wastes of animal or human origin must characterize the

data, bench or pilot scale testing or data from similar operations.

Every discharge should be evaluated for the following constituents at a minimum. Metals should be as total metals, although some applicants may also want to include analyses for dissolved metals. this would be important for discharges containing large amount of solids.

Arsenic	Fluoride
Barium	Calcium
Cadmium	Magnesium
Chromium	Sodium
Lead	Chloride
Mercury	Sulfate
Nitrogen (Total)	Alkalinity
Selenium	TDS
Silver	pH

In addition to the above, the following should be included in the discharge characterization if they

Similar details are required for drainage diversion features. Calculations used to determine the appropriate sizing should accompany the designs.

4. <u>Characterization of Discharge</u>

If yours is a property with a history of discharge or waste disposal, attach or include in the space provided a summary of the past discharge practices that you are aware of either personally or through employee interviews. Contact with the previous owner/operator of the facility may be necessary to fulfill this requirement. Your description should be specific for each discharging facility on site, i.e. what sort of materials were deposited in each pond, septic tank, landfill cell? If applying for a new facility permit, supply a similar discussion of anticipated discharges.

In addition to the discussion of discharge practices, the application must include a characterization of the discharges.

a.) Now list the chemical, biological and physical properties of the described discharges. This should include chemical analyses or projected chemical composition based on manufacturer's

- locations of discharge sites (ponds, leachlines, dry wells, other injection wells, landfills, etc.). Each discharge location should be assigned a numeric identifier starting with 001 and proceeding consecutively. If the facility is known by a descriptive name include it as well. These identifiers will be used again in characterizing of discharge (see item 4, this section) and can be in the permit for monitoring requirements.

- topography

- Any other pertinent information

3. Facility Design Plans

Attach two copies of design drawings showing proposed or as-built construction details of pollution control systems. Engineered drawings are preferable, but all design plans should be either drawn to scale or indicate dimensions and should be accurate and legible. The design drawings should give both plan and cross-sectional views of elements of the system. For instance, a surface impoundment should have liner, subgrade, side slopes, anchor devices for liner, leachate collection system and dimensions detailed.

approval by the Department. The map should clearly indicate all of the following:

- the facility site boundary
- an area of at least 3 miles around the boundary
- location of all wells within 1/2 mile of the facility boundary
- land ownership or use of properties adjacent to the site

2. Site Plan

In addition to the location map, two copies of a site plan must be submitted. The site plan should be drawn to an appropriate scale to show necessary details and should include:

- property lines
- buildings and structures
- locations of water wells, boring or sampling points

located, or a person under contract specifically to conduct the day to day business of the facility. A direct employee of the owner probably would not be considered a separate operator.

1. Operator Name

2. Operator Address

3. Telephone Number

E. EXISTING ENVIRONMENTAL PERMITS

List the numbers and the entity of issue of any other existing environmental permits that have been issued to the applicant. Some of the standard permits we commonly deal with are listed. Space is provided for other permits not mentioned. Please describe them.

F. REQUIRED ATTACHMENTS

1. Location Map

All permit applications must include two copies of a location map, preferably on a 7.5 minute U.S.G.S. topographic map or 15 minute map where the 7.5 minute map in unavailable. Other maps may be used, but require

3. Telephone Number of Owner

Give the telephone number of the facility owner.

4. Land Owner

Give the name of the person, agency or company which owns the land on which the facility is located if different than the facility owner.

5. Land Owner Address

Give the Steet, city, State and Zip Code of the land owner if different from that of the facility owner.

D. OPERATOR INFORMATION

This section pertains to the entity responsible for managing the facility operation, not necessarily individual persons. If the operator is a different person than the owner of the facility, provide the information requested in items 1 through 3. Examples of separate owner and operator are a lessee of the land or buildings on which the facility is

2. Applicant Mailing Address

Give address where correspondence concerning the application may be directed to the applicant. Include Street name, city, State and Zip Code. If you wish this correspondence to be sent directly to your consultant or engineer include that address as well.

3. Telephone Number of Applicant

Please be sure to include Area Code. Telephone number of the engineer or consultant firm may also be included in this section.

C. OWNER INFORMATION

1. Name of Owner

If different from the applicant, provide the name of the owner of the facility. There is no need to complete this part if the persons are the same.

2. Owner Mailing Address

Give the Street, City, State, Zip Code where the owner may be contacted.

7. Facility Contact Person

Provide the name of a person at the facility who can be contacted about facility operations. This would be the person the Department would call if we were arranging a site visit.

8. Telephone Number

Give the phone number where the contact person may be reached during normal business hours.

9. Nature of Business

Provide a brief description of the activity conducted at the facility.

B. APPLICANT INFORMATION

1. Name of Applicant

Who is applying for this permit? If a company or corporation, state that name.

5. <u>County</u>

In which county or counties is the facility located?

6. <u>Facility Location</u>

a) Township, range, section, and quarters.

Locate the facility by the township and range coordinate system. If possible, break the section location down to three (3) quarter section divisions (1/4, 1/4, 1/4). This will be a 10 acre parcel. This location can be determined from U.S.G.S. topographic maps. Refer to Figure 2 for an explanation of this system. This information may also be obtained from County Recorder or Assessor's Offices.

b) Latitude and Longitude. Give the latitude and longitude of the approximate center of the property on which the facility is located. (See Appendix B for description of how to determine latitude and longitude.)

Beginning operations for the Department's purposes means when do you expect to begin discharging from the facility?

b) Expected life of the facility.

Describe in specific terms if possible, you may use more general terms if the facility has a finite lifetime, an ore deposit, as opposed to a municipality's wastewater treatment plant which is hoped to serve the community in perpetuity.

3. Mailing Address of Facility

To what address would the Department write if sending correspondence about the facility? Give the street or Post Office Box, City, State and Zip Code on lines provided.

4. Facility Address

If different from the mailing address, include a street address, route number or other specific identifier, and the City, State and Zip Code for the actual location of the facility.

III. INFORMATION REQUIREMENTS FOR A PERMIT APPLICATION

This chapter is intended to aid the applicant in providing the mandatory information required in a permit application (A.A.C. R18-108.A & B). By following these instructions, the information should be presented in a format most useful to the Department. This should facilitate a more speedy review of your application. The instructions are numbered and organized to refer to the specific item on the application form.

A. FACILITY DATA

1. Name of Facility

This should be the name of the business, project or operation. It should be a unique name; that is, if the company owns or operates multiple facilities in other locations, you may want to incorporate a reference to location in the name. It should be the name by which the operation is commonly known. If the facility was known by any previous names, please include also.

2. Duration of Facility Operation

a) Date facility began (or is expected to begin) operations.

Land use - zoning approval	County/City
Engineering/Construction Approval	County
Dam Safety & Stability	Department of Water Resources

Dredge & Fill 404 Permit	Corps of Engineers
UIC Regulations (In-situ leach)	EPA
UMTRA & Other Programs	EPA
UMTRA & Other Programs	N.R.C.
Air Emmission Permit	DEQ - Air Quality
Solid Waste Disposal/ Operational Plan Approval	DEQ-Solid Waste
Well Construction Program Permit	Department of Water Resources
Poor Water Quality Withdrawal Permit	Department of Water Resourses
If on or near State lands	State Lands
Approval to Proceed	State Historic Preservation Office
Registration/Safety	State Mine Inspector

Air Pollution Control (e.g. incinerators, air strippers or dust control)	ADEQ/County Health Department
Flood Control	Local Flood Control District
Construction Permits	ADEQ/County Health Dept. and local building authority
Well Construction	Department of Water Resources
404 Permit	U.S. Army Corps of Engineers
Reclamation Plan	BLM
Operation & Reclamation Plan	Forest Service
Hazardous Waste Permit	EPA-RCRA
Air Quality Permit	EPA-Air

TABLE 2

Other Permits and Approvals Which May Be Required in Addition to The Aquifer Protection Permit

Permit or Regulation	Agency
Solid Waste Disposal	DEQ (Solid Waste Unit)
Zoning Approval	Local City or County
WQARF (closed facilities before January 1, 1986)	DEQ (Remedial Action Unit)
Permit for Reuse of Reclaimed Wastewater	ADEQ
NPDES (Discharge to navigable waters)	Application is made at ADEQ EPA is issuing authority
Sludge Handling and Disposal	ADEQ and/or EPA

minor. A major modification constitutes substantial changes in an issued permit for reasons outlined in the regulations. (A.A.C. R18-9-121.C.) and requires submission of a fee (A.A.C. R18-9-123.D.). Minor modifications are changes which do not affect the scope or intent of the permit, and do not require the publishing of a public notice (A.A.C. R18-9-121.D.). All other permit actions must go through the public participation process described in steps 8 through 11 of the permit process (Sec. II.A.).

When a facility is sold to a new owner, a permit is transferrable if the Director determines the new owner is able to comply with the statutes and regulations (A.A.C. R18-9-121.E.).

C. OTHER PERMITS AND REGULATIONS

Other approvals and permits may be required by Federal, State or Local governments. A list of possible permits that may be required for various facility types is included in Table 2. This is not an exhaustive list; additional permits may be necessary. It is the permittee's responsibility to obtain and comply with all applicable laws and regulations.

11. Any person may appeal a permit action if that person is or may be adversely affected by the action. Appeals are made to the Water Quality Appeals Board in accordance with A.R.S. 49-323.

B. PERMIT ACTIONS

The flow chart of Figure 1, just discussed, describes the basic process of permit issuance. As was mentioned, the process may culminate in permit denial. The regulations provide for denial in the cases where the applicant has failed or refused to correct deficiencies in the application, provided false or misleading information or has failed to demonstrate that the operation of the facility will comply with the requirements of the statutes and regulations. In the last case, the applicant will have an opportunity to correct an application before the decision to deny is necessary. The statute also provides that the Director may deny a permit if he determines the applicant incapable of fully carrying out the terms and conditions of the permit based on the applicant's past performance or technical and financial competence to comply with the terms and conditions.

Other permit actions the Director may take include modifying, transferring, suspending and revoking. There are two types of modifications that can be performed on permits, major and

8. The public notice of ADEQ's intent to issue (or deny) a permit is published in a newspaper with distribution in the area where the facility is located. The Department accepts written comment from the public concerning the draft permit for a period of 30 days following publication. During this period any person may request a public hearing be held.

9. The Department will conduct a public hearing in a city near the location of the facility to solicit further public comment on the draft permit if the Director determines that significant public interest exists, or that significant issues or information have been brought to our attention which were not previously considered in the permitting process.

10. Weighing information contained in the permit application and obtained from either the general public comment period or the public hearing, the Director will make his final decision to issue or deny an Aquifer Protection Permit. An applicant will have had previous opportunity (in steps 5 & 6) to correct any situation which would lead to denial of the application. However, the Director has authority for denial of permit applications for good cause.

6. Once it has been determined that the application is complete, the Department begins its technical review of the submittal. The project officer may refer various portions of the application to appropriate units within the department for this technical review. Staff evaluates the technical merits of the data to see if they support the conclusions. Staff reviews the adequacy of the demonstrations of BADCT and compliance with Aquifer Water Quality Standards at the applicable point(s) of compliance (see Chapter III.E.6.). If there are problems with the presentation or substance of the information, the applicant will be informed and have an opportunity to rectify the situation. Whenever additional information is requested the 90-day ADEQ review timeframe is halted and resumes upon receipt of the information. If the requirements of the statutes and regulations have been met, the applicant will be notified of our preliminary decision to issue a permit.

7. At this stage the project officer will begin drafting the permit, setting the appropriate conditions such as discharge limitations, groundwater monitoring limits, alert levels, reporting requirements or compliance schedules. The public notice and other supporting documents are also prepared at this time.

Other Discharging Facilities.....	$1,800
Permit Transfer.....	$ 200
Permit Modification that constitutes a major modification as described in A.R.S. 49-201.18.....	Same as for original permit in application according to type of facility
Permit Modification that is described as a minor modification under R18-9-121.D.....	0
Permit modification that is neither a major modification nor a minor modification.....	$ 200

Recharge and Underground Storage and Recovery Using Effluent.....	$2,800
Solid Waste Disposal Facility (Landfills).....	$2,200
Construction Debris Landfills.....	$1,200
Mines	
Surface Impoundments.....	$1,800
Tailings Piles or Ponds.....	$2,200
Base Metal Leaching Operations Including Collection and Process Ponds.....	$2,300
Cyanide Leaching Including Collection and Process Ponds.....	$1,500
In-Situ Leaching.....	$3,400
Discharge to Water of U.S.....	$1,900
Dry Wells.....	$ 900
Industrial Wastewater Discharges	
Surface Impoundment.....	$2,200
Discharge to Water of U.S.....	$1,700
Subsurface Discharge.....	$1,900

TABLE 1

FEE SCHEDULE

Each application for an individual Aquifer Protection Permit must be accompanied by a non-refundable fee. Make checks payable to the State of Arizona.

Categories	Fee (In U.S. Dollars)
On-Site Sewage Disposal Systems	
(less than 20,000 gpd).....	$1,200
Wastewater Treatment Plants Where	
Influent is Predominantly Sewage	
Surface Impoundment.....	$1,400
Discharge to Water of the U.S.....	$1,600
Subsurface Discharge.....	$1,400
Recharge and Underground Storage and	
Recovery Without Effluent.....	$2,200

along with the appropriate fee. The fees list can be found in Table 1.

5. When the Department receives an application, it is assigned to a project officer in the Department's Water Permits Unit. This person will be your contact for all questions concerning your project. The first thing a project officer does is check the application for completeness. In other words, are all the required parts included? If not, the applicant is notified of the deficiencies and requested to correct them. There is no specific response time for new facilities, but an existing facility will be requested to submit this information according to a schedule agreed on by the applicant and DEQ.

three will also be used to collect water quality data, and the proposal would include well construction designs for this purpose. The Department will respond by approving the usefulness of the existing well locations and the proposed locations along with the designs, or make comments or suggestions to modify the proposed task. Other aspects of developing the permit application may be addressed in the proposal.

3. After approval of the proposal or other direction given to the applicant by the Department, the applicant will conduct a hydrologic study if it is required. Determining the scope of the study is a good reason for having a pre-application meeting. The format for collecting and reporting data for the hydrologic study is discussed later in this manual. (See Chapter IV).

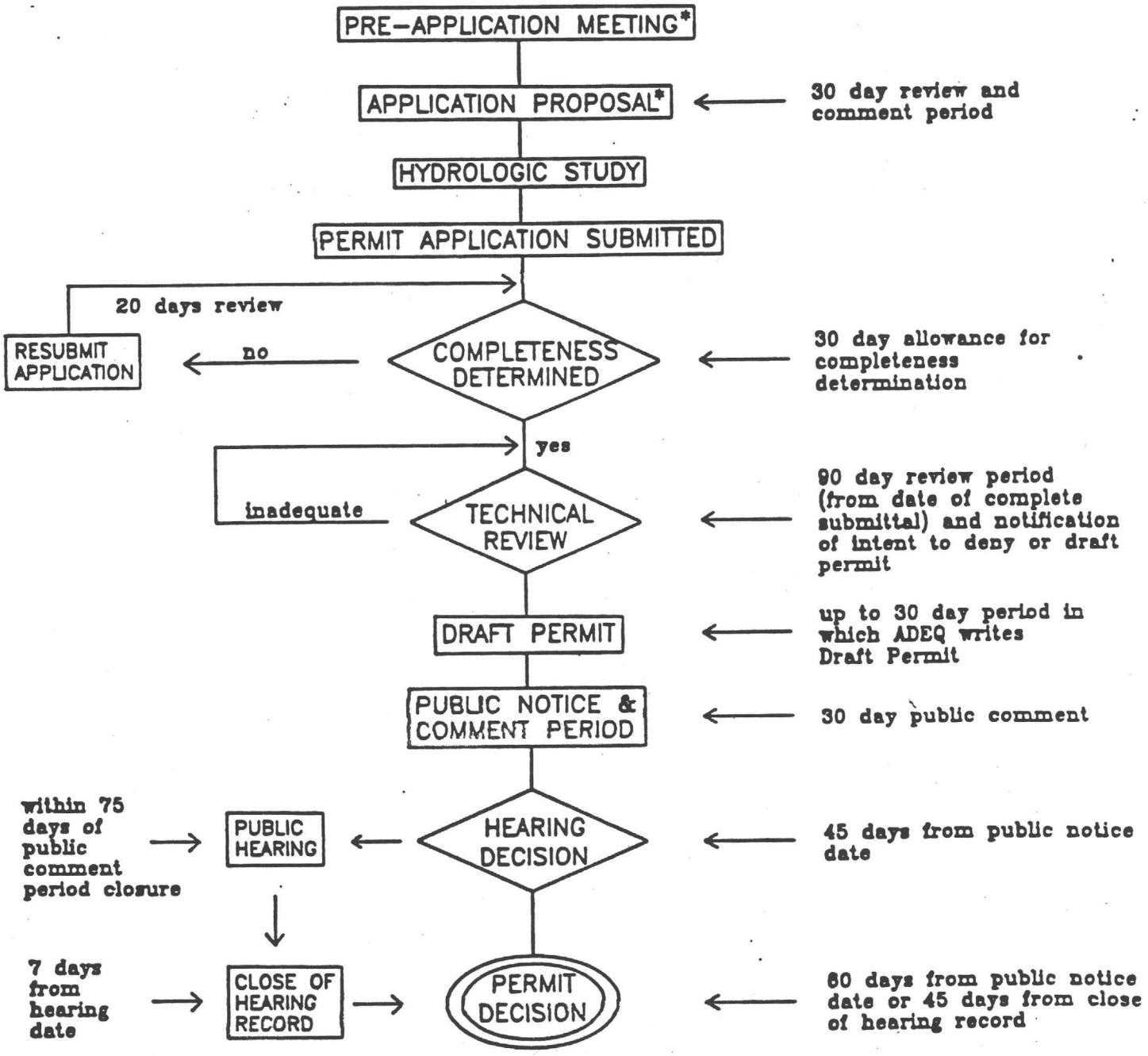
4. Once all the information for the permit application has been gathered, it must be compiled in a format easily reviewed by ADEQ so that the processing of the permit is as efficient as possible. The Department has prepared a form which accompanies this manual to assist an applicant in presenting the information in a uniform manner. Chapters III & IV discuss how to organize application information as well. At this time, the application should be submitted to the Water Permits Unit of ADEQ

It should be noted that ADEQ will be glad to meet with a prospective applicant in more preliminary stages of project development, but these meetings should not be considered as a formal pre-application conference.

The degree of guidance the Department will be able to provide is dependent upon the extent the applicant has finalized his/her plans and the amount of information that can be supplied at the meeting. Please be aware the Department can not commit to absolute decisions at a pre-application meeting, but will provide guidance in terms of the BADCT proposal, level of detail for any necessary hydrologic studies, and the scope of any water quality sampling.

2. Following the pre-application meeting, an applicant has the option of submitting a proposal for a permit application. The proposal should outline how the applicant will meet the informational requirements for a permit based on issues identified in the pre-application meeting. For example, a proposal might explain that an applicant will generate a water table elevation map in the area of the facility by measuring water levels in five known existing wells, and propose to drill three other wells at specific locations on site. These last

ADEQ AQUIFER PROTECTION PERMIT PROCESS



*optional

figure 1

Arizona Department of Environmental Quality

AQUIFER PROTECTION PERMIT APPLICATION

(see guidance document for details)

A. FACILITY DATA

1. NAME OF FACILITY (List previous names, if any)

_____

_____

2. a) DATE FACILITY BEGAN (or is expected to begin) OPERATIONS

_____

b) EXPECTED LIFE OF THE FACILITY

_____

3. MAILING ADDRESS OF FACILITY

_____

_____

_____

4. FACILITY ADDRESS

_____

_____

_____

5. COUNTY _____

6. FACILITY LOCATION

a)

Township	Range	Section(s)	Quarters
_____	_____	_____	___1/4, ___1/4, ___1/4
_____	_____	_____	___1/4, ___1/4, ___1/4

b) Latitude _____

Longitude _____

7. FACILITY CONTACT PERSON _____

8. TELEPHONE NUMBER _____

9. NATURE OF BUSINESS (FACILITY)

_____

_____

_____

_____

_____

B. APPLICANT INFORMATION

1. NAME OF APPLICANT

_____

_____

2. APPLICANT MAILING ADDRESS

_____

_____

_____

CONSULTANT MAILING ADDRESS (OPTIONAL)

_____

_____

_____

3. TELEPHONE NUMBER OF APPLICANT

_____

C. OWNER INFORMATION

1. NAME OF OWNER

_____

2. OWNER MAILING ADDRESS

_____

_____

_____

3. TELEPHONE NUMBER OF OWNER

_____

4. LAND OWNER

_____

5. LAND OWNER ADDRESS

_____

_____

_____

D. OPERATOR INFORMATION

1. OPERATOR NAME

_____

2. OPERATOR ADDRESS

_____

_____

_____

3. OPERATOR TELEPHONE NUMBER

_____

E. EXISTING ENVIRONMENTAL PERMITS

1. NPDES PERMITS & NUMBERS

_____

_____

2. REUSE PERMITS & NUMBERS

_____

_____

3. RCRA PERMITS & NUMBERS

_____

_____

4. AIR QUALITY PERMITS & NUMBERS

_____

_____

5. SOLID WASTE PERMITS & NUMBERS

_____

_____

G. REQUIRED ATTACHMENTS

Please indicate in the spaces provided that the appropriate attachments or information have been included.

1. LOCATION MAP

_____Have you attached 2 copies of the appropriate map?

Is all the following information indicated on the map?

_____The facility site boundary?

_____An area of at least 3 miles around the boundary?

_____Location of all wells within 1/2 mile of the boundary?

_____Land ownership or use of properties adjacent to the site?

_____Have you included well construction details and well uses?

2. SITE PLAN - TWO COPIES

_____Have you included the site plan?

Is all the following indicated on the plan?

_____Property lines?

_____Buildings and structures?

_____Locations of water wells, borings or samling points?

_____Locations of discharge sites?

_____Topography?

_____Proposed Point of Compliance?

3. FACILITY DESIGN PLANS - TWO COPIES: PROPOSED AND/OR "AS BUILT"

_____Have you included the design drawings?

4. CHARACTERIZATION OF DISCHARGE

Summarize past (or anticipated) discharge practices:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

a) _____ Have you attached analytical reports or projected data describing the chemical, biological and physical properties of the discharge described above?

b) List the rates at which a discharge has or will occur.

_____
_____
_____

What is the duration and frequency of the discharge?

_____
_____
_____

c) List the location of each discharging facility.

Descriptive Name	Latitude	Longitude

5. DEMONSTRATION OF BADCT

_____Indicate that you have attached a description of pollutant control methodologies for the facility and a discussion of why they meet the BADCT requirement. You may use this page if convenient.

6. DEMONSTRATION OF COMPLIANCE WITH STANDARDS.

_____Have you indicated a proposed Point of Compliance on the appropriate site plan or map?

Is the proposed Point of Compliance for:

_____Hazardous substances?

_____Non-hazardous substances?

Provide justification for selecting the proposed Point of Compliance.

_____

_____

_____

_____

_____

_____

_____

_____

7. DEMONSTRATION OF TECHNICAL CAPABILITY

a. Who is responsible for the design of the facility?

_____

_____

Provide the basis for the party's capability:

_____

_____

_____

_____

b. Who is responsible for the construction of the facility or its components?

_____

_____

_____

_____

Provide the basis for the party's capability:

_____

_____

_____

_____

c. Who is responsible for the operation of the facility?

_____

_____

_____

Provide the basis for the party's capability:

_____

_____

_____

8. DEMONSTRATION OF FINANCIAL CAPABILITY

Please indicate in the spaces provided that the appropriate attachments or information have been included. Please submit financial information in a form that will easily allow ADEQ to keep such information confidential.

a) Have you included estimates for the total costs of each of the following aspects of the facility?

_____Construction;

_____Operation;

_____Closure;

_____Post-closure care;

b) _____Have you attached the required statement from the applicant's chief financial officer that the applicant is financially capable of meeting the costs estimated in sub-section a) above?

c) If the applicant is not a governmental entity, have you included one of the following?

_____The most recent 10K form of the applicant;

_____A report containing <u>all</u> of the following:

___Applicant's organizational structure

___Description of applicant's business

___Applicant's net worth, describing major assets and liabilities

___Description of judgments exceeding $100,000.00 against applicant during five years prior to making this application

___Description of bankruptcy or insolvency proceedings by applicant during five years prior to making this application

___Names & dates of birth of executive officers (If applicant is a corporation);

_____Evidence of a bond, insurance, or trust fund.

9. ENFORCEMENT ACTIONS

Provide a brief description of any action for the enforcement of any federal or State law, rule or regulation, or any county, city or local government ordinace relating to the protection of the environment, instituted against the applicant during the five years prior to making this application.

_____

_____

_____

_____

_____

_____

_____

10. ZONING

___Indicate that you have included evidence that the facility complies with applicable municipal or county zoning ordinances and regulations.

H. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

_____

NAME AND OFFICIAL TITLE

_____

SIGNATURE

_____

DATE SIGNED

We recommend that two copies of the application be submitted to expedite review within Plan Review & Permits Section .

APP COMPLETENESS REVIEW CHECKLIST
AAC R18-9-107.E

Facility Name: _____ Inv. No. _____

Date Application Received: ___/___/___ Date of Completion Review: ___/___/___

Completion Review By: _____

PART I - REQUIRED INFORMATION

[ ] Name and mailing address of the applicant (R18-9-108.A.1)
[ ] Name and mailing address of the owner (R18-9-108.A.2)
[ ] Name and mailing address of the operator (R18-9-108.A.3)
[ ] Legal description of facility location (R18-9-108.A.4)
[ ] Expected operational life of facility (R18-9-108.A.5)
[ ] Other Federal and state environmental permits issued to applicant (R18-9-108.A.6)
[ ] Two copies of location map (R18-9-108.B.1)
[ ] Two copies of facility site plan (R18-9-108.B.2)
[ ] Two copies of facility design plans (R18-9-108.B.3)

Characterization of Discharge (R18-9-108.B.4)

- [ ] Chemical, biological, and physical characteristics (R18-9-108.B.4.a)
- [ ] Rates, volumes, and frequencies of discharge (R18-9-108.B.4.b)
- [ ] Location of the discharge (R18-9-108.B.4.c)

[ ] Description of BADCT to be employed (R18-9-108.B.5)
[ ] Demonstration of compliance with standards(R18-9-108.B.6)
[ ] Demonstration of technical capability (R18-9-108.B.7)

Demonstration of financial capability (R18-9-108.B.8)

- [ ] Estimate of total cost of constructing, operation, closing, and assuring post-closure care (R18-9-108.B.8.a)
- [ ] Statement by chief financial officer that applicant is financial capable (R18-9-108.B.8.b)
- [ ] If not political subdivision, support of financial capability (R18-9-108.B.8.c)

[ ] Brief description of any enforcement actions during past 5 years (R18-9-108.B.9)
[ ] Evidence of compliance with zoning ordinances and regulations (R18-9-108.B.10)
[ ] Certification (R18-9-108.D)

APP COMPLETENESS REVIEW CHECKLIST (cont.)
AAC R18-9-107.E

PART II - DISCRETIONARY INFORMATION

Hydrogeologic Study (R18-9-108.C.1)

- [ ] Surface and subsurface geology (R18-9-108.C.1.a)
- [ ] Location of any perennial or ephemeral surface water bodies (R18-9-108.C.1.b)
- [ ] Characteristics of aquifer and geologic units (R18-9-108.C.1.c)
- [ ] Rates, volumes, and directions of surface and ground water flow (R18-9-108.C.1.d)
- [ ] Location of 100-year floodplain and assessment (R18-9-108.C.1.e)
- [ ] Existing aquifer water quality underlying site (R18-9-108.C.1.f)
- [ ] Extent and degree of known soil contamination (R18-9-108.C.1.g)
- [ ] Assessment of potential of discharge to cause leaching of pollutants from surface soils and vadose zone (R18-9-108.C.1.h)
- [ ] Anticipated changes to water quality due to discharge (R18-9-108.C.1.i)
- [ ] Description of expected changes in elevation and flow directions groundwater (R18-9-108.C.1.j)
- [ ] Map of facility's DIA(R18-9-108.C.1.k)
- [ ] Criteria and methodologies used to determine DIA (R18-9-108.C.1.l)

- [ ] Proposal for setting Alert Levels (R18-9-110)
- [ ] Proposal for discharge limitations (R18-9-111)
- [ ] Proposal for monitoring requirements (R18-9-112)
- [ ] Contingency plans for alert level exceedances (R18-9-114)
- [ ] Contingency plans for discharge limit exceedance (R18-9-114)
- [ ] Contingency plans for AWQS violations (R18-9-114)
- [ ] Proposal for compliance schedule (R18-9-115)
- [ ] Temporary cessation plans (R18-9-116)
- [ ] Closure and post-closure plans (R18-9-116)

Comments: _____

_____

_____

_____

_____

_____

AQUIFER PROTECTION PERMIT RULES

State of Arizona
Department of Environmental Quality
2005 North Central Avenue
Phoenix, Arizona 85004

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DISCLAIMER

The Department has produced this Handbook for the benefit of the regulated public affected by the rules. The Handbook is not the official version of the rules, and the Department acknowledges that it may contain errors. The official version of the rules, as published in the Arizona Administrative Code, may be obtained from the Secretary of State.

October 1989

TITLE 18
ENVIRONMENTAL QUALITY

CHAPTER 9.
ARTICLE 1.
AQUIFER PROTECTION PERMITS

Section

R18-9-101. Definitions
R18-9-102. Facilities to which the Article does not apply
R18-9-103. Transition of groundwater quality protection permit program to aquifer protection permit program
R18-9-104. Transition: Temporary cessation, closure, post-closure
R18-9-105. Class exemptions
R18-9-106. Determination of applicability
R18-9-107. Individual permits: Application process
R18-9-108. Individual permits: Application requirements
R18-9-109. Special provisions: Recharge and Underground Storage and Recovery
R18-9-110. Individual permit conditions: Alert levels
R18-9-111. Individual permit conditions: Discharge limitations
R18-9-112. Individual permit conditions: Monitoring requirements
R18-9-113. Individual permit conditions: Reporting requirements
R18-9-114. Individual permit conditions: Contingency plan requirements
R18-9-115. Individual permit conditions: Compliance schedule
R18-9-116. Individual permit conditions: Temporary cessation, closure; post-closure
R18-9-117. Individual permit conditions: Technical and financial capability
R18-9-118. Individual permit duration
R18-9-119. Temporary permits
R18-9-120. Individual permits: Certification of permittee
R18-9-121. Individual permits: Permit actions
R18-9-122. Consolidation of permits
R18-9-123. Fees
R18-9-124. Public participation
R18-9-125. General permits: general provisions
R18-9-126. General permits: sewage disposal systems
R18-9-127. General permits: recharge pilot projects underground storage and recovery pilot projects
R18-9-128. General permits: agricultural applications of wastewater sludge
R18-9-129. General permits: other facilities
R18-9-130. Violations; Enforcement

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CHAPTER 9.
ARTICLE 1.
AQUIFER PROTECTION PERMITS

R18-9-101. Definitions

In addition to the definitions prescribed in A.R.S. 49-101 and 49-201, the terms of this Article shall have the following meanings:

1. "Alert level" means a numeric value, expressing either a concentration of a pollutant or a physical or chemical property of a pollutant, which is established in an individual Aquifer Protection Permit and which serves as an early warning indicating a potential violation of either an Aquifer Water Quality Standard at the applicable point of compliance, or any permit condition.

2. "Aquifer Protection Permit" means an individual or general permit issued pursuant to A.R.S. 49-203 and 49-241 through 251, and this Article.

3. "Aquifer Water Quality Standard" means a standard established pursuant to A.R.S. 49-221 and 49-223.

4. "BADCT" means the best available demonstrated control technology, processes, operating methods, or other alternatives to achieve the greatest degree of discharge reduction determined for a facility by the Director pursuant to A.R.S. 49-243.B and D.

5. "Discharge density" means the volume of effluent discharged per unit of time, per unit area of land available to assimilate the discharge. This shall be expressed in gallons per day per acre or in pounds of nitrogen per day per acre.

6. "Drywell" has the meaning ascribed to it in A.R.S. 49-331.3.

7. "Groundwater Quality Protection Permit" means a permit issued by the Arizona Department of Health Services or the Department pursuant to R9-20-208 prior to the effective date of this Article.

8. "Inert material" means that which is insoluble in water and will not decompose or leach substances to water, such as broken concrete, brick, rock, gravel, sand, and uncontaminated soils.

9. "Injection well" means a well which receives a discharge through pressure injection or gravity flow.

10. "Notice of Disposal (NOD)" means a document submitted pursuant to R9-20-205.A. prior to the effective date of this Article.

11. "Recharge project" has the meaning ascribed to it in A.R.S. 45-651.5.

12. "Sewage" means wastes from toilets, baths, sinks, lavatories, laundries, and other plumbing fixtures in residences, institutions, public and business buildings, mobile homes, watercraft, and other places of human habitation, employment, or recreation.

13. "Sewage disposal system" means a system for sewage collection, treatment, and discharge by surface or underground methods.

14. "Surface impoundment" means a pit, pond or lagoon, having a surface dimension that is equal to or greater than its depth, which is used for the storage, holding, settling, treatment or discharge of liquid pollutants or pollutants containing free liquids.

15. "Temporary cessation" means any cessation of operation of a facility for a period of greater than 60 days but which is not intended to be permanent.

16. "Underground storage and recovery project" has the meaning ascribed to it in A.R.S. 45-802.6.

R18-9-102. Facilities to which the Article does not apply

This Article shall not apply to any of the following:

A. Drywells which are used solely to receive storm runoff, except those that drain areas in which hazardous substances, are used, stored, loaded, or treated.

B. The application of nitrogen fertilizers.

C. Animal feeding operations.

D. Activities conducted pursuant to a remedial action order issued or a plan approved pursuant to A.R.S. 49-281 through 49-287, and R18-7-101 through R18-7-110.

E. Any use of pesticides directly in the commercial production of plants and animals which is subject to the Federal Insecticide, Fungicide and Rodenticide Act, (P.L. 92-516; 86 Stat. 975; 7 United States Code sections 135 et. seq., as amended), or A.R.S. 49-301 through 49-309 and the rules adopted thereunder, or Title 3, Chapter 2, Article 6 of the Arizona Revised Statutes and the rules adopted thereunder.

R18-9-103. Transition of groundwater quality protection permit program to aquifer protection permit program

A. Subject to the other provisions of this section, a Groundwater Quality Protection Permit issued pursuant to R9-20-201 through 226 before the effective date of this Article is continued according to the terms of the permit.

B. An owner or operator of a facility for which a Groundwater Quality Protection Permit has been issued shall be deemed to be in compliance with this Article and Title 49, Chapter 2, Article 3, of the Arizona Revised Statutes if both of the following conditions are met:

1. The owner or operator is in compliance with the conditions of the Groundwater Quality Protection Permit.

2. The owner or operator is not causing or contributing to the violation of any Aquifer Water Quality Standard.

C. An owner or operator of a facility for which a notice of disposal as required by R9-20-205 has been filed shall be deemed to be in compliance with this Article and Title 49, Chapter 2, Article 3 of the Arizona Revised Statutes if the owner or operator is not causing or contributing to the violation of any Aquifer Water Quality Standard.

D. An owner or operator of a facility which is in existence on the effective date of this Article, which was exempted by R9-20-202.B. before the effective date of this Article, and which is neither exempted under A.R.S. 49-250.B. or R18-9-105, nor is issued a general permit under this Article, shall be deemed to be in compliance with this Article and Title 49, Chapter 2, Article 3 of the Arizona Revised Statutes if the person submits the information described in R18-9-108.A. and B.1. through 4. within 90 days after the effective date of this Article.

E. Subsections B., C., and D. shall apply to a person until either of the following occurs:

1. The owner or operator are issued an Aquifer Protection Permit.

2. The owner or operator are denied an Aquifer Protection Permit.

F. The Department shall be notified by the transferor and the transferee of any change in the owner or operator of a facility subject to subsections B, C. or D. within 10 days after the change occurs. The notice shall include the name of the transferor owner or operator, the name of the transferee owner or operator, and the name and location of the facility.

G. The Department shall maintain a priority list indicating the order in which the facilities subject to Subsections A., B., C., and D. shall be requested to submit permit applications pursuant to R18-9-107. The list shall be available to the public upon request. The list shall be based upon the potential environmental risks to the aquifers of the state and upon the risks to

Appendix I
Average Daily Sewage Flow

Type of Establishment (unit basis)	Sewage Flow (gallons per unit per day)
Airport (passenger)	4
Apartments, multiple family (resident)	100
1 bedroom, assume 2 residents,	
2 bedrooms, assume 3 residents, etc.	
Camp: Campground, overnight with flush toilets (camper)	25
Campground, overnight with flush toilets and shower (camper)	50
Construction (bed)	50
Day with no meals served (camper)	15
Luxury (camper)	100-150
Resorts, day and night, with limited plumbing (camper)	50
Tourist with central bath and toilet facilities (person)	35
Clubs:Country (resident member)	100
Country (nonresident member)	25
Cottages with seasonal occupancy (resident)	100
Dwellings: Boarding of rooming houses (resident)	100
Additional kitchen requirements for nonresidents boarders	10
Dwellings: Residential (resident)	100
Factory (person)	25
Hospital (bed)	250-400
Hotel (room)	125
Institutions other than hospitals (person)	75-125
Laundries, self service (machine)	400
Mobile Home: Family (per resident)	100
Retirement (resident)	75
Motel (room)	125
Office (person)	25
Picnic: With bathhouses, showers & flush toilets (picnicker)	20
With toilet facilities only (picnicker)	10
Public Restrooms (toilet)	200
Restaurant (seat)	30
per meal served	100
Schools: Boarding (pupil)	100
Day with cafeteria, gymnasiums & showers (pupil)	25
Day with cafeteria, but no gymnasiums or showers (pupil)	20
Day without cafeteria, gymnasiums or showers (pupil)	15
Service Station (bay)	1000
Shopping Center (square foot)	1
Swimming pool (swimmer)	10
Theaters: Drive-in (car space)	5
Movie (seat)	5
Trailer Park: (also see mobile home)	
Travel with no sewer connection (space)	125
Travel with sewer connection (space)	175

Organic Loading. Base All Organic Loadings on 200 mg/l BOD5 and 210 mg/l SS.

landfill unless the liner can be reused at another test location without a reduction in integrity.

5. The test site is restored to its natural grade.

D. A General Permit is issued for facilities which, for purposes of water quality sampling, hydrologic parameter testing, well development or redevelopment, receive water, drilling fluids or drill cuttings from a well, if the discharge is to the same aquifer in approximately the same location from which the water supply was withdrawn originally.

E. A General Permit is issued for injection wells, surface impoundments, and leach lines receiving discharge from only filter backwash from potable water treatment systems, condensate from refrigeration units, overflows from evaporative coolers, heat exchange system return water, or swimming pool filter backwash, where the discharge is less than 1,000 gallons per day.

F. A General Permit is issued for lined evapotranspiration beds receiving sewage which are issued an Approval to Construct pursuant to R18-9-804 and 805, and which are inspected and leak tested by the Department or its designated representative during construction.

G. A General Permit is issued for disposal of material that contains only uncontaminated soil, cement, bricks, or other similar inert material.

H. A General Permit is issued to facilities used for transportation of water for beneficial use, or pumped from the groundwater, which contain effluent from any wastewater treatment facility if all of the conditions are met:

1. The effluent is added for the purpose of delivery to a reuse, recharge, or underground storage and recovery facility that has a permit.

2. The transportation facility is concrete-lined.

3. The effluent does not exceed any Aquifer Water Quality Standard, except those standards for turbidity and bacteria.

4. The volumes and rates of effluent added do not exceed that necessary to meet the requirements of the permitted reuse, recharge, or underground storage and recovery facility.

I. A general permit is issued for surface impoundments which meet all of the following conditions:

1. The surface impoundments receive only filter backwash from potable water treatment systems.

2. The surface impoundments are constructed and operated pursuant to R18-4-231 and R18-4-265.

3. The surface impoundments are lined with a material having a permeability not greater than 1 x 10-6 cm/sec.

R18-9-130. Violations; Enforcement

Any person who owns or operates a facility contrary to the provisions of this Article, who violates the conditions specified in a permit issued pursuant to this Article, or who violates any Groundwater Protection Permit continued pursuant to R18-9-103.A., is subject to the enforcement actions prescribed in Title 49, Chapter 2, Article 4 of the Arizona Revised Statutes.

public health posed by the facilities, as determined upon consideration of the following:

1. The general vulnerability of the aquifer in terms of depth to groundwater and productivity of the aquifer.

2. Existing aquifer water quality.

3. The drinking water population potentially affected.

4. The waste hazard potential of the facility.

5. The existence of documented pollution problems attributable to the facility.

6. The status of the facility under R9-20-201 through R9-20-226.

H. A person who has an application for a Groundwater Quality Protection Permit pending on the effective date of this Section shall become subject to this Article and shall be issued an individual Aquifer Protection Permit if a permit is issued.

R18-9-104. Transition: Temporary cessation, closure, post-closure

A. A person who has filed a notice of disposal as required by R9-20-205 shall notify the Director before any temporary cessation. The Director shall specify any measures to be taken by the person in order to prevent violations of Aquifer Water Quality Standards at the applicable point of compliance.

B. A person who has filed a notice of disposal as required by R9-20-205 and who owns or operates a facility that is required to obtain an individual Aquifer Protection Permit under Title 49, Chapter 2, Article 3 of the Arizona Revised Statutes and this Article shall submit an application for an individual Aquifer Protection Permit if there is a cessation, for a period of at least three years, of the activity for which a facility or portion of a facility was designed and operated.

C. A person who has filed a notice of disposal as required by R9-20-205 and who owns or operates a facility that is required to obtain an individual Aquifer Protection Permit under Title 49, Chapter 2, Article 3 of the Arizona Revised Statutes and this Article shall notify the Director of the intent to cease operations prior to ceasing, without intent to resume, an activity for which the facility or a portion of the facility was designed or operated.

D. A person who has filed a notice of disposal as required by R9-20-205 who ceases, without intending to resume, an activity for which a facility or portion of a facility was designed and operated, or who is deemed subject to the closure requirements of this Section pursuant to Subsection B., and who owns or operates a facility that is required to obtain an individual Aquifer Protection Permit under Title 49, Chapter 2, Article 3 of the Arizona Revised Statutes and this Article shall submit to the Director an application for an individual Aquifer Protection Permit within 90 days following the notification.

R18-9-105. Class exemptions

In addition to the classes or categories of facilities listed in A.R.S. 49-250.B., the following classes or categories of facilities are exempt from the permit requirements of this Article:

1. Facilities which treat, store, or dispose of hazardous waste and which have been issued a permit or which have interim status, pursuant to the Resource Conservation and Recovery Act (P.L. 94-580; 90 Stat. 2796; 42 United States Code sections 6901 et. seq., as amended) or the rules adopted pursuant to A.R.S. 49-922.

2. Underground storage tanks which contain regulated substances as defined in A.R.S. 49-1001.8.

3. Facilities for the disposal of solid waste, as defined in A.R.S. 49-701.12, which are located in unincorporated areas and which only receive solid waste from four or fewer households.

R18-9-106. Determination of applicability

A. Any person who engages or who intends to engage in an operation or an activity which may result in a discharge which is regulated under this Article may request on a form provided by the Department that the Department determine the applicability of A.R.S. 49-241 through 251 and this Article to the operation or activity.

B. A person requesting a determination of applicability shall provide the following information:

1. The name of the operation or activity.
2. The location of the operation or activity.
3. The names of the persons who are engaging or who propose to engage in the operation or activity.
4. A description of the operation or activity.
5. A description of the chemical composition and characteristics of materials stored, handled, used or disposed of in the operation or activity.
6. Any other information required by the Director to make the determination of applicability.

C. Within 45 days after receipt of a request for a determination of applicability, the Department shall advise in writing the person making the request that the operation or activity is described by any one of the following:

1. Is not subject to the requirements of A.R.S. 49-241 through 251 and this Article because the operation or facility does not discharge as described by A.R.S. 49-241.
2. Is not subject to the requirements of A.R.S. 49-241 through 251 and this Article because the operation or activity is exempted by A.R.S. 49-250 or R18-9-105.
3. Is subject to the general permit requirements of A.R.S. 49-241 through 251 and this Article.
4. Is subject to the individual permit requirements of A.R.S. 49-241 through 251 and this Article.

D. If, after issuing a determination under this Section, the Department concludes that its determination of applicability or the information relied upon for a determination of applicability is inaccurate, the Department may modify or withdraw its determination after written notice to the person who requested the determination of applicability.

R18-9-107. Individual permits: Application process

A. Any person who owns or operates a facility that discharges shall obtain an individual Aquifer Protection Permit, unless the facility is subject to a general permit issued by this Article, or is exempted by either A.R.S. 49-250.B. or R18-9-105. A person who is required to obtain an individual Aquifer Protection Permit and who is not subject to R18-9-103 A. and B., C., or D. shall not discharge after the effective date of this Article without an individual Aquifer Protection Permit.

B. A person who is required to obtain an individual Aquifer Protection Permit shall submit a permit application to the Department according to the following:

1. For a new facility for which the owner or operator is not subject to R18-9-103 A. and B., C., or D., not later than 180 days before the date on which the facility is expected to begin discharging.
2. For a new facility for which the owner or operator is subject to R18-9-103 A. and B., C., or D., within 90 days after receipt of a written request from the Director.
3. For an existing facility, within 90 days after receipt of a written request from the Director.

C. In the case of a permit application to be submitted at the request of the Director, the Director may establish a permit application schedule upon the request of the applicant if the

4. The annual application of cadmium shall not exceed 0.5 Kg/ha or 0.45 pounds per acre.
5. The application of sludge shall not result in an application of nitrogen that exceeds the nitrogen requirement of the crop to be grown with that sludge application.
6. The application of the sludge shall not result in a hydraulic loading rate that exceeds 27,000 gallons per acre per application.
7. The sampling required to determine the application rates described in this Section shall be performed no more than one month prior to the application.

F. The analyses required to determine the application rates described in this Section shall be performed by laboratories certified by the State if such certification procedures exist.

G. Records relating to sludge application shall be kept and shall be available as follows:

1. Copies of any soil, crop, sludge, or water monitoring record shall be made available to the owner of the wastewater treatment facility from which the sludge was obtained and to the Department.
2. A record of the sludge application at each site shall be kept and submitted monthly to the owner of the wastewater treatment facility and made available to the Department. The record shall include the dates of sludge application and weather conditions on those dates; the amounts, quality, and source of the sludge; the location within the site where the sludge was applied; and the cumulative amounts of nutrients and heavy metals applied to each field.

H. The irrigation of the application site with fresh water shall not exceed the consumptive use of the crop and evapotranspiration needs.

R18-9-129. General permits: other facilities

A. A General Permit is issued for the discharge of wash water from sand and gravel operations, and placer mining operations, if only physical processes are employed and no hazardous substances, other than those naturally existing in the sand and gravel or the placer material, have been added or exposed during the processing or removal of the sand and gravel.

B. A General Permit is issued for discharges from hydrostatic tests of drinking water distribution systems, and of other pipelines not previously used for the transmission of fluids, if all of the following conditions are met:

1. The quality of the source water does not violate any Aquifer Water Quality Standard.
2. The discharge is not to a Water of the United States, as defined in 40 CFR Part 122.2.
3. The test site is restored to its natural grade.

C. A General Permit is issued for discharges from hydrostatic tests of pipelines previously used for transmission of fluids, other than those previously used for drinking water distribution systems, if all of the following conditions are met:

1. All liquid discharged is contained in an impoundment which is lined with flexible geomembrane material having a thickness of at least 10 mils.
2. The liner material is placed over a layer, at least three inches in thickness, consisting of well-sorted sand or finer grained material, or over an underliner determined by the Director to provide equal or better protection.
3. Within 60 days after the end of the hydrostatic test, all test waters are evaporated, or removed from the impoundment to a treatment works or landfill approved to accept such material. Other methods for removal of the test waters must have the prior written approval of the Director.
4. The liner is removed and disposed of at an approved

Stat. 2767; 42 United States Code sections 9601 et. seq., as amended), or any known location of a hazardous substance disposal.

B. Pilot projects shall be limited to a duration of two years commencing with the first application or injection of water at the facility site. Upon written request, the Department may issue an extension of this time limit, not to exceed one year, if the water to be recharged or stored has not been available to conduct the project.

C. Unless an extension described in Subsection B. has been granted, the applicant shall submit to the Department, a closure plan or a notice of intent to apply for an individual permit at least 30 days prior to the end of the time limit prescribed in Subsection B. A notice of intent to apply for an individual Aquifer Protection Permit shall include a schedule for the timely submittal of the permit application.

R18-9-128. General permits: Agricultural application of wastewater sludge

A. A General Permit is issued for agricultural applications of wastewater sludge meeting all of the conditions described in this section.

B. Any sludge stored at the application site for more than 24 hours shall be stored in water-tight manner.

C. The site at which the sludge is applied is subject to the following conditions:

1. The sludge shall not be stored or applied closer than 250 feet from any water well, other than a public or semi-public drinking water well, or closer than 1,000 feet from any public or semi-public drinking water supply well.

2. The sludge shall not be applied to land with slopes greater than six percent.

3. Application sites within the 100-year floodplain shall be approved by the local floodplain administrator.

4. The sludge shall not be applied to land where the mean annual groundwater elevation is less than 40 feet below the land surface.

D. The sludge shall be applied as follows:

1. All sludge shall be uniformly distributed and incorporated.

2. A new crop shall be grown with each application of sludge.

3. The sludge shall not be applied to frozen or snow-covered ground or to saturated soils.

E. The rate at which the sludge is applied is subject to all of the following:

1. The sludge shall be applied at a rate not to exceed eight dry tons per acre.

2. The sludge shall not be applied to soil with pH of less than 6.5 at the time of the sludge application.

3. No more than 10% of the maximum allowable cumulative metal application shall be applied annually. The maximum allowable cumulative metal application varies with the cation exchange capacity (CEC) of the soil and shall be determined based on the following table:

Max. Allowable Cumulative Metals Application (lbs/ac)

CEC METAL	Less Than 5	5 to 15	Greater than 15
Lead	500	1000	2000
Zinc	250	500	1000
Copper	125	250	500
Nickel	50	100	200

applicant can show that more time is needed to gather and compile data as required by R18-9-108. A permit application schedule established by the Director shall require the submission of information as expeditiously as is practicable. If a permit application schedule provides that actions be taken during a period that exceeds 90 days after the date of receipt of a written request for the submission of an application, the schedule shall set forth interim requirements and the dates for their achievement. If the time necessary for completion of any interim requirements is more than six months and is not readily divisible into stages for completion, the schedule shall contain interim dates for submission of reports on progress toward completion of the interim requirements and shall indicate a projected completion date. Within 30 days after a date specified in a permit application schedule, an applicant shall submit to the Department a report indicating whether the action or actions to be taken as of that date were taken.

D. Upon request by the applicant, the Department shall schedule and hold a preapplication conference with an applicant to discuss any of the requirements of this Article. In addition, an applicant may submit to the Department for review and comment a proposal for meeting any of the informational requirements of this Article. The Department shall comment on the proposal within 30 days after receipt of the proposal.

E. Within 30 days after receipt of an application for an individual Aquifer Protection Permit, the Director shall notify the applicant in writing whether the application is complete. If the application is incomplete, the notification shall include a listing of additional information which is required to process the application and a time for the submission of the additional information. Within 20 days of receipt of the resubmitted application, the Director shall determine if the resubmitted application is complete.

F. Within 90 days after receipt of a complete application, the Director shall notify the applicant, in writing and by certified mail, of the preliminary decision either to deny the application or to issue an individual Aquifer Protection Permit. If, during this 90 day period, the Director determines there to be technical deficiencies in the application, the Director immediately shall give the applicant written notification of these deficiencies and give the applicant an opportunity to cure the deficiencies. The number of days between notification of the applicant and the submission of additional information or a response by the applicant shall not be included within the 90 days allowed the Director for notification of the applicant of the Director's decision to deny an application or to issue an individual Aquifer Protection Permit.

G. At its earliest opportunity, the Department shall make available to the applicant a copy of the draft of the individual Aquifer Protection Permit.

H. Within 30 days after the notification of the applicant required by Subsection F., the Director, in accordance with R18-1-401 and R18-9-124, shall cause to be published a notice of the preliminary decision to issue or deny an individual Aquifer Protection Permit.

I. Within 45 days after the publication of the public notice, a decision whether to conduct a public hearing shall be made by the Department. If a hearing is to be held, the Department shall schedule the hearing to begin on or before 75 days from the close of public comment established in the public notice required by subsection H. The hearing record shall be closed within seven days after the close of the hearing.

J. Except as otherwise provided in this Subsection, the Director shall issue or deny an individual Aquifer Protection Permit within 30 days after the close of the public comment period established in the public notice required by Subsection H., or, if a public hearing is held, within 45 days after the public hearing

record is closed. The Director immediately shall give the applicant written notification of the final decision to issue or deny an individual Aquifer Protection Permit. The Director may extend the final decision deadline for not more than 90 days after the close of the public comment period, or, if a public hearing is held, after the public hearing record is closed, if the Director determines that additional information is required to make the decision whether to issue or deny a permit. The Director shall give the applicant written notification of a decision to extend the final decision deadline.

K. If an individual Aquifer Protection Permit is denied, the Director shall advise the applicant of the reasons for the decision in writing.

R18-9-108. Individual permits: Application requirements

A. A person applying for an individual Aquifer Protection Permit shall provide the Director with all of the following information on a form provided by the Department:

1. The name and mailing address of the applicant.
2. The name and mailing address of the owner of the facility.
3. The name and mailing address of the operator of the facility.
4. The legal description of the location of the facility.
5. Expected operational life of the facility.
6. Any other federal or state environmental permits issued to the applicant.

B. For purposes of this Subsection and Subsection C., "known" means that knowledge that the applicant actually has, or could reasonably be expected to have. Except as otherwise provided in R18-9-109.A., a person applying for an individual Aquifer Protection Permit shall provide the Director with all of the following information as attachments to the form described in Subsection A.:

1. Two copies of a topographic map, or other appropriate map approved by the Department, of the facility location and contiguous land area, showing the known use of adjacent properties and all known water well locations found within one-half mile of the facility, and accompanied by a description of well construction details and well uses, if available.
2. Two copies of a facility site plan which shows all known property lines, structures, water wells, injection wells, and drywells and their uses, topography and the location points of discharge. The facility site plan shall also include all known borings unless the Director determines that borings are numerous and that the requirement can be satisfied by a narrative description of the number and location of the borings.
3. Two copies of the facility design plans indicating proposed or as-built design details and proposed or as-built configuration of basins, ponds, waste storage areas, drainage diversion features, or other engineered elements of the facility affecting discharge.
4. A summary of the known past facility discharge activities and the proposed facility discharge activities, indicating all of the following:
   a. The chemical, biological, and physical characteristics of the discharge.
   b. The rates, volumes, and frequency of the discharge for each facility.
   c. The location of the discharge.
5. A description of the BADCT to be employed in the facility. The applicant shall submit in support of the proposed BADCT a statement of the technology which will be employed to meet the requirements of A.R.S. 49-243.B. This statement shall describe the alternative discharge control measures considered, the

3. The bottom of subsurface disposal system is at least:
   a. 40 feet above the static groundwater level where the soil percolation rate is slower than or equal to one minute per inch but faster than two minutes minutes per inch.
   b. 10 feet above the static groundwater level where the soil percolation rate is slower than or equal to two minutes per inch but faster than 10 minutes per inch.
   c. 5 feet above the static groundwater level where the soil percolation rate is slower than or equal to 10 minutes per inch.

D. The materials received by any sewage disposal system subject to a General Permit issued by this Section shall conform to both of the following:

1. The materials are typical sewage and do not include motor oil, gasoline, paints, varnishes, solvents, pesticides, fertilizers, or other materials not generally associated with toilet flushing, food preparation, laundry and personal hygiene.
2. Commercial operations utilizing hazardous substances or creating hazardous wastes, as defined in A.R.S. 49-921.5., do not dispose of such materials into the system.

R18-9-127. General permits: recharge pilot projects and underground storage and recovery pilot projects

A. A General Permit is issued for recharge pilot projects and underground storage and recovery pilot projects which meet all of the following conditions:

1. Not more than 10,000 acre feet of water shall be applied or injected at the facility site over a two-year period.
2. Site-specific hydrogeologic data for the development of an individual Aquifer Protection Permit for the project is obtained in the course of operating the facility. This condition is satisfied if the permittee does both of the following:
   a. Drills, and completes by the end of the first quarter after the first application or injection of water at the facility site, a sufficient number of monitoring wells to adequately assess the impact of the discharge on aquifer water quality.
   b. Samples quarterly by the monitoring wells described in Subparagraph a.
3. The source water to be used for recharge or underground storage is either of the following:
   a. Water conveyed by way of the Central Arizona Project Aqueduct or through a natural river drainage system.
   b. Any water, other than that described in Subparagraph a., which does not violate Aquifer Water Quality Standards or any applicable surface water quality standards, except that water that is not delivered directly to the saturated zone may exceed any standards for bacteria and turbidity.
4. The source water to be used for recharge or underground storage is not effluent dominated water, as defined by R18-11-201.7, at the point of diversion.
5. The point of diversion to the recharge or underground storage and recovery facility is not within five miles downstream from the surface discharge from a wastewater treatment plant.
6. Prior to commencement of operation, the operator notifies the Department of the intent to conduct a pilot recharge project or underground storage and recovery project.
7. Prior to commencement of operation, the operator identifies the information to be collected in coordination with the Department of Water Resources and the Department.
8. The operator holds a permit issued according to Title 45, Chapter 2, Article 13, or Chapter 3, Article l of the Arizona Revised Statutes.
9. The project is not located within one-half mile from any hazardous waste landfill, sanitary landfill, any site on the National Priority List under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (P.L. 96-510; 94

comments or attended a public hearing on the permit action, or who made written requests to receive the final permit determination.

I. The Director shall respond in writing to all written comments submitted during the written public comment period.

R18-9-125. General permits: general provisions

A. The Director may revoke a person's general permit and require the person to obtain an individual Aquifer Protection Permit pursuant to A.R.S. 49-245.B and this Article for any of the following reasons:

1. The person has failed to comply with the terms and conditions of the General Permit as described in this Article.

2. The discharge from a facility subject to a General Permit causes or contributes to the violation of an Aquifer Water Quality Standard.

B. The Director may revoke a General Permit for all facilities within a specific geographic area if the Director determines that the cumulative effects of the facilities subject to the general permit are such that any water quality standard established pursuant to A.R.S. 49-221 and 49-223 may be violated due to geologic or hydrologic conditions.

C. The Director shall notify a permittee, by certified mail, of the Department's decision to revoke a person's General Permit, and of the requirement to apply for an individual Aquifer Protection Permit pursuant to this Article.

D. The issuance of a General Permit under this Article pursuant to A.R.S. 49-245, does not affect or modify in any way the obligations or liability of any person for any damages, injury, or loss, resulting from a discharge.

R18-9-126. General permits: sewage disposal systems

A. A General Permit is issued for sewage disposal systems which have flows of less than 2000 gallons per day, which are in compliance with R18-9-801 through R18-9-819, and which receive materials which conform to Paragraph 1. of Subsection D.

B. A General Permit is issued for sewage disposal systems which have flows greater than or equal to 2000 gallons per day but less than 20,000 gallons per day, which are approved by the Department, the Arizona Department of Health Services, or a county health department pursuant to R18-9-804 and R18-9-805 prior to the effective date of this article and which are in compliance with the provisions of R18-9-804 and R18-9-805.

C. A general permit is issued for sewage disposal systems which have flows greater than or equal to 2000 gallons per day but less than 20,000 gallons per day, which are approved pursuant to R18-9-804 and R18-9-805 after the effective date of this Article, and which meet all of the following conditions:

1. The subsurface disposal system is located in a soil which has a percolation rate faster than 60 minutes per inch, but not faster than one minute per inch.

2. The discharge density of effluent from the sewage disposal system, when based on the average daily sewage flow figures found in Appendix I, is not greater than:

a. 1,200 gallons, or the equivalent of 0.4002 lbs. of total nitrogen, per day per acre, where the nitrate concentration (as nitrogen) of the ambient groundwater is 3.0 mg/l or less;

b. 800 gallons, or the equivalent of 0.2668 lbs. of total nitrogen, per day per acre, where the nitrate concentration (as nitrogen) of the ambient groundwater is greater than 3.0 mg/l and less than or equal to 5.0 mg/l; or

c. 400 gallons, or the equivalent of 0.1334 lbs. of total nitrogen, per day per acre, where the nitrate concentration (as nitrogen) of the ambient groundwater is greater than 5.0 mg/l and less than or equal to 7.0 mg/l.

technical and economic advantages and disadvantages of each alternative, and the justification for selection or rejection of each alternative. The applicant shall evaluate each alternative discharge control technology, relative to the amount of discharge reduction achievable, site specific hydrologic and geologic characteristics, other environmental impacts, and water conservation or augmentation. The economic impact of implementation of each alternative control technology shall be evaluated on an industry-wide basis. In addition, a statement for a facility in existence on the effective date of this Article shall reflect consideration of the factors listed in A.R.S. 49-243.B.1.(a) through (h).

6. A demonstration that the facility will not cause or contribute to a violation of Aquifer Water Quality Standards at the applicable point of compliance. The demonstration shall propose the point or points of compliance for the facility based on A.R.S. 49-244. If an Aquifer Water Quality Standard for a pollutant has been exceeded in an aquifer, the application shall also include a demonstration that no additional degradation of the aquifer, relative to that pollutant and determined at the applicable point of compliance, will occur as a result of the discharge from the proposed facility.

7. A demonstration that the person applying for the individual Aquifer Protection Permit is technically capable of fully carrying out the conditions of the permit. A person applying for an individual Aquifer Protection Permit may make the demonstration required by this Subsection by submitting the following information for each person principally responsible for designing, constructing, or operating the facility:

a. Any pertinent licenses or certifications held by the person.

b. Any professional training relevant to the design, construction, or operation of the facility.

c. Any work experience relevant to the design, construction, or operation of the facility.

8. A demonstration that the person applying for the individual Aquifer Protection Permit is financially capable of constructing, operating, closing, and assuring proper post-closure care of the facility in compliance with Title 49, Chapter 2, Article 3 of the Arizona Revised Statutes, this Article, and the conditions of the individual Aquifer Protection Permit. The person applying for an individual Aquifer Protection Permit shall submit all of the following in support of the demonstration of financial capability as described in this paragraph:

a. An estimate of the total cost of constructing, operating, closing, and assuring proper post-closure care in compliance with Title 49, Chapter 2, Article 3 of the Arizona Revised Statutes, this Article, and the conditions of the individual Aquifer Protection Permit.

b. A statement by the chief financial officer of the applicant that the applicant is financially capable of meeting the costs described in Subparagraph a. The statement shall specify in detail the financial arrangements for meeting the closure and post-closure plans submitted pursuant to Paragraph 2. of Subsection C.

c. For a person other than a state or federal agency or a county, city, town or other local governmental entity, the demonstration of financial capability shall be further supported by any one of the following:

i. The most recent copy of the person's 10K form filed pursuant to section 13 or 15(d) of the Federal Securities and Exchange Act of 1934 (c. 404, Title I; 48. Stat. 894-95; 15 United States Code sections 78m and 78o, as amended).

ii. A report that contains all of the following information:

(a) A description of the person's status as a corporation, partnership, or other legal entity.

(b) A description of the person's business.

(c) An indication of the person's net worth, including a description of major assets and liabilities.

(d) A brief description of any judgment exceeding $100,000.00 rendered against the person during the five years preceding the date of the application.

(e) A brief description of any bankruptcy or insolvency proceedings instituted by the person during the five years preceding the date of the application.

(f) If the person is a corporation, the names of its executive officers and their dates of birth.

iii. Evidence of a bond, insurance, or a trust fund assuring that the applicant will be financially capable of meeting the closure and post-closure requirements of the individual Aquifer Protection Permit.

9. A brief description of any action for the enforcement of any federal or State law, rule or regulation, or any county, city or local government ordinance relating to the protection of the environment, instituted against the person during the five years preceding the date of application.

10. Evidence that the facility complies with applicable municipal or county zoning ordinances and regulations.

C. In addition to the information required by Subsection A. and B., a person applying for an individual Aquifer Protection Permit shall provide any of the following information which the Director may request if necessary in order to determine whether to issue an individual Aquifer Protection Permit.

1. A hydrogeologic study which defines the discharge impact area for the operational life of the facility and which demonstrates that the facility will not cause or contribute to a violation of an Aquifer Water Quality Standard at the applicable point of compliance. If an Aquifer Water Quality Standard for a pollutant has been exceeded in an aquifer, the hydrogeologic study shall also include a demonstration that no additional degradation of the aquifer, relative to that pollutant and determined at the applicable point of compliance, will occur as a result of the discharge of the proposed facility. The hydrogeologic study, upon a request by the Director, shall include any of the following:

a. A description of the surface and subsurface geology, including a description of all borings.

b. The location of any perennial or ephemeral surface water bodies.

c. The characteristics of the aquifer and geologic units with limited permeability, including depth, hydraulic conductivity, and transmissivity.

d. Rates, volumes, and directions of surface water and groundwater flow, including hydrographs, if available, and equipotential maps.

e. The location of the 100-year flood plain and an assessment of the 100-year flood surface flow and potential impacts on the facility.

f. A documentation of the existing quality of the water in the aquifers underlying the site, including, where available, the method of analysis and quality assurance and quality control procedures associated with the documentation.

g. A documentation of the extent and degree of any known soil contamination in the vicinity of the facility.

h. An assessment of the potential of the discharge to cause the leaching of pollutants from surface soils or vadose materials.

i. Any anticipated changes in the water quality expected as a result of the discharge.

j. A description of any expected changes in the elevation and flow directions of the groundwater that may be caused by the facility.

k. A map of the facility's discharge impact area.

l. The criteria and methodologies used to determine the discharge impact area.

	Fee
Permit modification that constitutes a major modification as described in A.R.S. 49-201.18	$ (Same as that required under subsection A)
Permit modification that is described as a minor modification under R18-9-121.D.	0
Permit modification that is neither a major modification nor a minor modification	200
Permit transfer	200

R18-9-124. Public participation

A. On a monthly basis, the Director shall cause to be posted in the offices of each county department of health and each council of governments lists of all applications for individual Aquifer Protection Permits, of the notifications received pursuant to R18-9-116.C., and of the proposed permit actions, received or initiated by the Department during the previous month.

B. In addition to the information required to be published in a public notice, any public notice issued under this Article shall include a description of the procedure for requesting a public hearing regarding a proposed permit action specifying both of the following:

1. That any request for a public hearing shall be submitted in writing to the Department prior to the close of the public comment period.

2. That any request for a public hearing shall identify the proposed permit action and shall state specifically the reason for making the request.

C. Except as otherwise provided in Subsection G., any written public comment period established in a public notice issued under this Article shall extend for no more than 30 calendar days after the date of the first publication of the public notice.

D. Each public notice issued under this Article shall be mailed to the permit applicant, affected federal, state and local agencies, and to persons who have requested, in writing, copies of particular proposed permit action notices.

E. If two or more proposed permit actions have similar effective dates, and are located in the same vicinity, public notices of the proposed actions may be combined and issued as a single notice.

F. The Department shall conduct a public hearing on a proposed permit action if the Director determines either of the following:

1. That significant public interest exists.

2. That significant issues or information have been brought to the attention of the Department which have not been considered previously in the permitting process.

G. Public notice of any public hearing held pursuant to this Article shall be made according to R18-1-401 and the public hearing shall be conducted as a general public hearing pursuant to R18-1-402. When a public hearing is conducted, written public comment shall be accepted until the close of the hearing record as specified by the person presiding at the public hearing.

H. At the same time that the Department notifies an applicant of the final permit determination, the Department shall send notice of such determination, through regular mail, to affected State and local agencies, and to persons who submitted

facilities for which the permits are sought are part of the same project or operation, if the facilities are located in a contiguous geographic area, and if the applications for the facilities are submitted simultaneously. Under the circumstances described in this Section, the Director may also consolidate those permit conditions that have general applicability to the facilities for which permits are sought.

R18-9-123. Fees

A. With each application for an individual Aquifer Protection Permit, the applicant shall remit a fee, payable to the State of Arizona, which is not refundable and which shall be deposited in the state general fund, according to the following schedule, except as otherwise provided in Subsections B.,C. and D.

Categories	Fee (In U.S. dollars)
On-Site Sewage Disposal Systems (less than 20,000 gpd)	$1200
Wastewater Treatment Plants	
Where Influent is Predominantly Sewage	
Surface Impoundment	1400
Discharge to Water of the U.S.	1600
Subsurface Discharge	1400
Recharge and Underground Storage and Recovery without Effluent	2200
Recharge and Underground Storage and Recovery using Effluent	2800
Solid Waste Disposal Facility (Landfills)	2200
Construction Debris landfills	1200
Mines	
Surface Impoundments	1800
Tailings Piles or Ponds	2200
Base Metal Leaching Operations including Collection and Process Ponds	2300
Cyanide Leaching including Collection and Process ponds	1500
In-Situ Leaching	3400
Discharge to Water of U.S.	1900
Drywells	900
Industrial Wastewater Discharges	
Surface Impoundment	2200
Discharge to Water of U.S.	1700
Subsurface Discharge	1900
Other Discharging Facilities	1800

B. For individual Aquifer Protection Permits which are consolidated pursuant to R18-9-122, and unless the applicant qualifies for the fee provision described in Subsection C., the applicant shall remit a fee which equals the sum of the greatest fee among the facilities, and the fee applicable to each additional facility reduced by 40%.

C. An applicant applying for individual permits for two or more facilities of the same category of facilities that, in addition, are engaged in similar operations, and have discharges of similar chemical characteristics, and are geographically contiguous is required to remit only that fee applicable to a single such facility.

D. With an application that is a request for modification to an individual Aquifer Protection Permit or for a transfer of an individual Aquifer Protection Permit, the applicant shall remit a fee in the same manner as described in subsection A., and according to the following schedule:

m. The proposed location of each point of compliance.

2. A detailed proposal indicating the alert levels, discharge limitations, monitoring requirements, contingency plans, compliance schedules, and temporary closure, closure, and post-closure plans which the applicant proposes to satisfy the requirements of Title 49, Chapter 2, Article 3 of the Arizona Revised Statutes, and this Article.

3. Any other relevant information needed by the Director to determine whether to issue a permit.

D. A person applying for an individual Aquifer Protection Permit shall certify in writing that the information submitted in the application is true and accurate, to the best of the applicant's knowledge.

R18-9-109. Special provisions: Recharge and Underground Storage and Recovery

A. A person who is applying for an individual Aquifer Protection Permit for a facility that is a recharge or an underground storage and recovery project shall provide the Director with the information described in R18-9-108.A., B., and C., except for that information described in R18-9-108.B.5.

B. When the Department receives an application for an individual Aquifer Protection Permit for a facility that is a recharge project or an underground storage and recovery project, the Department shall administer the application process described in this Article in coordination with the recharge and underground storage and recovery permit processes administered by the Department of Water Resources. The Department shall advise the Department of Water Resources of each permit application received for an individual Aquifer Protection Permit for a facility that is a recharge project or an underground storage and recovery project.

R18-9-110. Individual permit conditions: Alert levels

A. An individual Aquifer Protection Permit shall prescribe an alert level based on the site-specific conditions described by the applicant in the application submitted pursuant to R18-9-108, or otherwise known by the Director.

B. An alert level prescribed in an individual permit may be based on a pollutant which indicates the potential appearance of another pollutant.

C. An individual permit may prescribe the measurement of an alert level at the point of release, the point of compliance, or any intervening point.

D. An individual Aquifer Protection Permit shall require notification of the Department as described by R18-9-113 and the implementation of the appropriate parts of the contingency plan as described in R18-9-114 if an alert level is exceeded.

R18-9-111. Individual permit conditions: Discharge limitations

A. An individual Aquifer Protection Permit shall prescribe discharge limitations based on the considerations described in A.R.S. 49-243 A., B., C., and D.

B. An individual Aquifer Protection Permit shall require notification of the Department as described in R18-9-113 and the implementation of the appropriate parts of a contingency plan as described in R18-9-114 if a discharge limitation is exceeded.

R18-9-112. Individual permit conditions: monitoring requirements

A. An individual Aquifer Protection Permit shall require that the permittee conduct any monitoring activity necessary to assure compliance with any other Aquifer Protection Permit condition, with the applicable water quality standards established

pursuant to A.R.S. 49-221 and 49-223, and with A.R.S. 49-241 through 49-251.

B. An individual Aquifer Protection Permit shall specify all of the following:

1. The type and method of monitoring to be conducted.
2. The frequency of monitoring.
3. Any requirements for the installation, use, or maintenance of monitoring equipment.
4. The intervals at which monitoring results shall be reported to the Department.

C. An individual Aquifer Protection Permit shall require that a permittee make, for each sample taken or measurement made as required by the individual Aquifer Protection Permit, a monitoring record consisting of all of the following:

1. The date, time, and exact place of a sampling or measurement and the name of each individual who performed the sampling or measuring.
2. The procedures used to collect the sample or make the measurement.
3. The date on which sample analysis was completed.
4. The name of each individual or laboratory who performed the analysis.
5. The analytical techniques or methods used to perform the sampling and analysis.
6. The chain of custody records.
7. Any field notes relating to the information described in Paragraphs 1. through 6.

D. An individual Aquifer Protection Permit shall require that a permittee retain or have access to a monitoring record made pursuant to Subsection C. for a period of 10 years after the date of the sample or measurement.

R18-9-113. Individual permit conditions: Reporting requirements

A. An individual Aquifer Protection Permit shall require that a permittee give written notice to the Director 180 calendar days before any major modification to the facility, as described in A.R.S. 49-201.18.

B. Except as otherwise provided in R18-9-114.B., an individual Aquifer Protection Permit shall require that a permittee notify the Director within five days after becoming aware of a violation of a permit condition or that an alert level has been exceeded.

C. An individual Aquifer Protection Permit shall require that a permittee submit a written report within 30 days after the permittee becomes aware of the violation of a permit condition. The report shall document all of the following:

1. A description of the violation and its cause.
2. The period of violation, including exact date(s) and time(s), if known, and the anticipated time period during which the violation is expected to continue.
3. Any action taken or planned to mitigate the effects of the violation, or to eliminate or prevent recurrence of the violation.
4. Any monitoring activity or other information which indicates that any pollutants would be reasonably expected to cause a violation of an Aquifer Water Quality Standard.
5. Any malfunction or failure of pollution control devices or other equipment or process.

D. An individual Aquifer Protection Permit shall require that a permittee shall notify the Director within five days after the occurrence of any one of the following:

1. The filing of bankruptcy by the permittee.
2. The entry of any order or judgment against the permittee for the enforcement of any environmental protection statute and in which monetary damages or civil penalties are imposed.

any relevant information which is otherwise developed or acquired by the Department.

3. That the applicant has provided false or misleading information to the Department.

C. The Director may modify an individual Aquifer Protection Permit based upon a request or upon the Director's initiative. A request for permit modification shall be in writing and shall contain the facts and reasons which justify the request. The Director may modify an individual Aquifer Protection Permit if the Director determines any one or more of the following:

1. That material and substantial alterations or additions to a permitted facility justify a change in permit conditions.
2. That the discharge from the facility violates or could reasonably be expected to violate any Aquifer Water Quality Standard.
3. That rule or statutory changes have occurred, such as to require a change in the permit.
4. That there has been a change of an applicable point of compliance.

D. Notwithstanding Subsection G. and R18-9-124.F., and with the written concurrence of the permittee, the Director may make minor modifications to the individual Aquifer Protection Permit without giving public notice or conducting a public hearing, for any of the following reasons:

1. To correct typographical errors.
2. To increase the frequency of monitoring or reporting.
3. To change an interim compliance date in a compliance schedule if the permittee can show just cause and that the new date does not interfere with the attainment of a final compliance date requirement.
4. To change construction requirements, if the alteration complies with the requirements of this Article and provides equal or better performance.
5. To replace monitoring equipment, including wells, if such replacement results in equal or greater monitoring effectiveness.

E. The Director may transfer an individual Aquifer Protection Permit if the Director determines that the proposed transferee will comply with A.R.S. 49-241 through 251 and this Article. A permittee is responsible for complying with permit conditions, A.R.S. 49-241 through 251, and this Article, regardless of whether the permittee has sold or otherwise disposed of the facility, until the Director transfers a permit pursuant to this Subsection.

F. The Director may suspend or revoke an individual Aquifer Protection Permit or Groundwater Quality Protection Permit, for any of the following reasons:

1. Non-compliance by the permittee with any applicable provision of Title 49, Chapter 2, Article 3 of the Arizona Revised Statutes, this Article, or any permit condition.
2. The permittee's misrepresentation or omission of any fact, information, or data related to an Aquifer Protection Permit application or permit conditions.
3. If the Director determines that the permitted activity is causing or may cause a violation of any Aquifer Water Quality Standard.
4. If a permitted discharge has the potential to cause or will cause imminent and substantial endangerment to public health or the environment.

G. The Director shall issue a public notice of all proposed permit actions pursuant to R18-9-124.

R18-9-122. Consolidation of individual permits

The Director may consolidate into a single document, and may issue as a single permit, any number of individual Aquifer Protection Permits for which any one applicant applies if the

R18-9-118. Individual permit duration

Subject to modification or revocation as provided in this Article, and except as otherwise provided in R18-9-119, an individual Aquifer Protection Permit issued under this Article shall be valid for a specified term not to exceed the operational life of the facility and any period during which the facility is subject to a post-closure plan pursuant to R18-9-116. F.through H.

R18-9-119. Temporary permits

A. The Director may waive any or all of the application requirements, the application process, or the individual permit conditions described in this Article in issuing a temporary individual Aquifer Protection Permit to a person for the operation of a facility to be used for the remediation of an accidental discharge of a pollutant.

B. Subject to the other provisions of this Subsection, the Director may postpone any or all of the public notice or public hearing requirements of this Article and issue a temporary individual Aquifer Protection Permit in order to prevent a discharge or if circumstances which could not have been foreseen or controlled by the applicant do not allow the timely preparation and issuance of an individual Aquifer Protection Permit. Public notice shall not be postponed beyond 30 days after the issuance of the temporary individual Aquifer Protection Permit.

C. A temporary individual Aquifer Protection Permit issued under this Section shall be issued for a period not to exceed one year and shall not be renewed.

R18-9-120. Individual permits: Certification of permittee

The Director shall not issue an individual Aquifer Protection Permit unless the permittee certifies that the permittee understands the requirements and conditions of the permit and the penalties for violations of the permit conditions, this Article, and Title 49, Chapter 2, Article 3 of the Arizona Revised Statutes.

R18-9-121. Individual permits: Permit actions

A. The Director shall issue an individual Aquifer Protection Permit if the Director determines, based upon the information obtained by or made available to the Department, that the applicant will comply with A.R.S. 49-241 through 251 and this Article. The Director may issue an individual Aquifer Protection Permit conditioned upon the applicant providing evidence of a bond, an insurance policy, or a trust fund covering the costs of meeting the closure and post-closure requirements of the individual Aquifer Protection Permit if the Director otherwise would have denied the permit under Paragraph 2. of Subsection B. on the basis that the applicant was financially incapable of meeting the closure and post-closure requirements of the individual Aquifer Protection Permit.

B. The director may deny an individual Aquifer Protection Permit if the Director determines upon completion of the application process described in R18-9-107 and R18-9-108 any one of the following:

1. That the applicant has failed or refused to correct deficiencies in the permit application.

2. That the applicant has failed to demonstrate that the facility and the operation thereof will comply with the requirements of A.R.S. 49-241 through 251 and this Article. This determination shall be based on the information submitted in the Aquifer Protection Permit application, in addition to any information submitted to the Department pursuant to a public hearing, or

R18-9-114. Individual permit conditions: Contingency plan requirements

A. An individual Aquifer Protection Permit shall require that a contingency plan specify, in a manner consistent with this section, the actions to be taken in the event of a discharge that results in any one of the following:

1. Violation of a permit condition.
2. Violation of an Aquifer Water Quality Standard.
3. An alert level having been exceeded.
4. An imminent and substantial endangerment to the public health or the environment.

B. An individual Aquifer Protection Permit shall require that a contingency plan contain all of the following:

1. A plan to provide emergency response on a 24-hour basis in the event that a condition arises which results in an imminent and substantial endangerment to the public health or the environment.

2. The designation of an emergency response coordinator to be responsible for activation of the contingency plan and emergency response measures.

3. A requirement that the emergency response coordinator notify the Department immediately in the event that emergency response measures are taken or those portions of a contingency plan that address an imminent and substantial endangerment are activated.

4. A list of names, addresses and telephone numbers of persons to be contacted in the event that an imminent and substantial endangerment to the public health or the environment arises.

5. A general description of the procedures, personnel and equipment to be used to assure appropriate mitigation of unauthorized discharges.

C. Contingency plans required by the Federal Water Pollution Control Act (P.L. 92-500; 86 Stat. 816; 33 United States Code sections 1251, et. seq., as amended) or the Resource Conservation Recovery Act (P.L. 94-580; 90 Stat. 2796; 42 United States Code sections 6901 et. seq., as amended) may be amended to meet the requirements of this section and submitted to the Department for approval in lieu of a separate aquifer protection contingency plan.

D. An individual permit may require that a contingency plan provide for any one or more of the following actions to be taken in the event of a discharge that results in any of the conditions described in Subsection A.:

1. Verification sampling.
2. Further monitoring.
3. The submission of reports describing the causes, impacts, or mitigation of the discharge.
4. Submission of a proposed corrective action plan for approval by the Director as described by this Paragraph. The Director shall approve the proposed corrective action plan if the corrective action plan returns the facility to compliance with the facility's permit conditions, this Article and Title 49, Chapter 2, Article 3 of the Arizona Revised Statutes.

E. A permittee shall maintain at least one copy of the contingency plan required by the individual Aquifer Protection Permit at the location where the day-to-day decisions regarding the operation of the facility are made. A permittee shall advise all employees responsible for the operation of the facility of the location of copies of the contingency plan.

F. A permittee shall revise promptly all copies of the contingency plan upon any change in the information contained in the contingency plan.

R18-9-115. Individual permit conditions: Compliance schedule

A. A compliance schedule established in an individual Aquifer Protection Permit shall require compliance as expeditiously as is practicable. If a compliance schedule provides that actions be taken during a period that exceeds one year from the date of permit issuance, the schedule shall set forth interim requirements and the dates for their achievement. If the time necessary for completion of any interim requirements is more than one year and is not readily divisible into stages for completion, the permit shall contain interim dates for submission of reports on progress toward completion of the interim requirements and shall indicate a projected completion date. Within 30 days after a date specified in a compliance schedule, a permittee shall submit to the Department a report indicating whether the action or actions to be taken as of that date were taken.

B. In determining the requirements of and length of a compliance schedule for a facility, the Director shall consider all of the following factors:

1. The character and impact of the discharge.
2. The nature of construction or activity required by the permit.
3. The number of persons affected or potentially affected by the discharge.
4. The current state of treatment technology.
5. The age of the facility.

C. An individual Aquifer Protection Permit shall not establish a compliance schedule for a new facility for which the owner or operator is not subject to R18-9-103.A. and B. unless the facility will employ BADCT and will not exceed Aquifer Water Quality Standards when the facility begins to discharge. The requirement of this Subsection that a facility employ BADCT does not apply to a recharge project or an underground storage and recovery project.

R18-9-116. Individual permit conditions: Temporary cessation, closure, post-closure

A. An individual Aquifer Protection Permit shall require that the permittee notify the Director before any temporary cessation of operations at the facility. An individual Aquifer Protection Permit shall specify any measures to be taken by the permittee if there is any temporary cessation of operations at a facility.

B. An individual Aquifer Protection Permit shall require that a permittee notify the Director of the permittee's intent to cease operations prior to ceasing, without intent to resume, an activity for which the facility was designed or operated.

C. An individual Aquifer Protection Permit shall require that a permittee who ceases, without intending to resume, an activity for which a facility was designed and operated, submit to the Director for approval a closure plan within 90 days following the notification. A closure plan shall describe all of the following:

1. The approximate quantities and the chemical, biological, and physical characteristics of the materials to be removed from the facility.
2. The destination of the materials to be removed from the facility and an indication that placement of the materials at that destination is approved.
3. The approximate quantities and the chemical, biological, and physical characteristics of the materials that will remain at the facility.
4. The methods to be used to treat any materials remaining at the facility.
5. The methods to be used to control the discharge of pollutants from the facility.
6. Any limitations on future land or water uses created as a result of the facility's operations or closure activities.
7. The methods to be used to secure the facility.
8. An estimate of the cost of closure.
9. A schedule for implementation of the closure plan and the submission of a post-closure plan.

D. Within 60 days after receipt of a complete closure plan, the Director shall approve or reject the closure plan. The Director shall approve a closure plan that eliminates, to the greatest extent practicable, any reasonable probability of further discharge from the facility and of exceeding Aquifer Water Quality Standards at the applicable point of compliance.

E. An individual Aquifer Protection Permit may prescribe any part of a closure plan submitted pursuant to Subsection C.

F. An individual Aquifer Protection Permit shall require that a permittee submit to the Director for approval, and shall adhere to, a post-closure monitoring and maintenance plan for a facility, unless the Director determines that the closure of the facility will eliminate to the greatest degree practicable, any reasonable probability of further discharge from the facility and of exceeding Aquifer Water Quality Standards at the applicable point of compliance. The post-closure plan shall describe all of the following:

1. The duration of post-closure care.
2. The monitoring procedures to be implemented by the permittee, including monitoring frequency, type, and location.
3. A description of the operating and maintenance procedures to be implemented for maintaining aquifer quality protection devices, such as liners, treatment systems, pump-back systems, and monitoring wells.
4. A schedule and description of physical inspections to be conducted at the facility following closure.
5. An estimate of the cost of post-closure maintenance and monitoring.
6. A description of limitations on future land or water uses, or both, at the facility site as a result of facility operations.

G. Within 60 days after receipt of complete post-closure plan, the Director shall approve or reject the post-closure plan. The Director shall approve a post-closure plan that eliminates, to the greatest extent practicable, any reasonable probability of further discharge from the facility and of exceeding Aquifer Water Quality Standards at the applicable point of compliance.

H. An individual Aquifer Protection Permit may prescribe any part of a post-closure plan submitted pursuant to Subsection F.

I. An individual Aquifer Protection Permit shall require that the permittee give the Department written notice that a closure plan or a post-closure plan has been implemented fully.

R18-9-117. Individual permit conditions: Technical and financial capability

A. An individual Aquifer Protection Permit shall require that a permittee have and maintain the technical and financial capability necessary to fully carry out the terms and conditions of the permit.

B. The Director may establish any of the permit conditions described in R18-9-109 through R18-9-116 on the basis of the Director's evaluation of the permittee's technical or financial capability necessary to carry out the terms and conditions of the individual Aquifer Protection Permit.

C. An individual Aquifer Protection Permit shall require that a permittee maintain any bond, insurance policy, or trust fund provided under R18-9-108.B.8.c.iii. or R18-9-121.A. A bond, insurance policy, or trust fund required to be maintained under this Subsection shall remain in effect for the duration of the permit.

JABA INC.
2100 N. Wilmot Rd. #218
Tucson, AZ 85712
(602) 885-9141
(FAX) 721-2768

June 11, 1993

COPY

Mr. Donald G. Bell
Water Pollution Compliance Officer
AZ Dept. Of Environmental Quality
Office Of Water Quality
3033 N. Central Avenue
Phoenix, AZ USA 85012

Dear Mr. Bell,

Re: **Monthly report for May, 1993 on the Contention Mine area, Tombstone Mining District, Cochise Co., Arizona - prepared on behalf of the Tombstone Development Co., Inc., Grand Island, Nebraska.**

The primary activity on the Contention Mine area during the month was exploration drilling by USMX Inc. of Denver Colorado. USMX on the first of May decided to join as a formal joint venture partner of Excellon Resources US Inc. the lease holder and Valdez Gold Inc. (see attached news release).

Starting in early January of 1993, USMX acted to test mineralization in the Tombstone area on a month by month basis. Joining in a Joint Venture with Excellon / Valdez in May for a minimum 3 month period is indicative of encouraging results from the previous work.

Excellon had prepared a computer model of the Contention Mine and surrounding area including the southeastern portion of the town of Tombstone. This model, known as a digital elevation model (DEM) can be displayed in a variety of formats and viewed from any angle. For this report, a typical topographic map was constructed and is shown in Figures 1, 2, and 3. Though the topography is available with 5 foot contour intervals, only the 25 foot contours are shown in these figures, so cultural features would stand out. All wells and exploration holes as of 4/15/93 were surveyed and plotted accurately on the map views, showing collar position as well as true bottom hole location in plan. Figure 4 is a north - south crossectional view showing all exploration drill holes, current monitor wells including Tombstone City Well #1, anticipated monitor wells MW #1, and #2 and the mean water level plotted from TEI # 2.

As can be seen from Figure 4, all exploration drill holes are above the water table. These holes have been backfilled and plugged according to Arizona regulation. Samples of all cuttings

have been retained for further analysis, including surface intervals where dump material was cut. No perched water has been encountered.

Monitor wells #1 and #2 were spudded. After a 20 foot surface casing was cemented in, Monitor Well # 1 encountered broken and caving ground at about 80 feet, and was temporarily abandoned until a casing program could be designed and material acquired. Surface casing could not be placed because of caving conditions at Monitor Well # 2 and the site was abandoned. Monitor Well #3 was sited 900 feet east and due south of Monitor Well #1. After setting the 20 feet of surface casing, caving conditions were encountered in this well also. It too was temporarily abandoned.

PVC casing and screen has been designed for Monitor Wells # 1 and #3, and drilling them to 600 feet and casing is planned for the last half of June, or as soon as a rig is available. Sampling of the water table will begin after well completion.

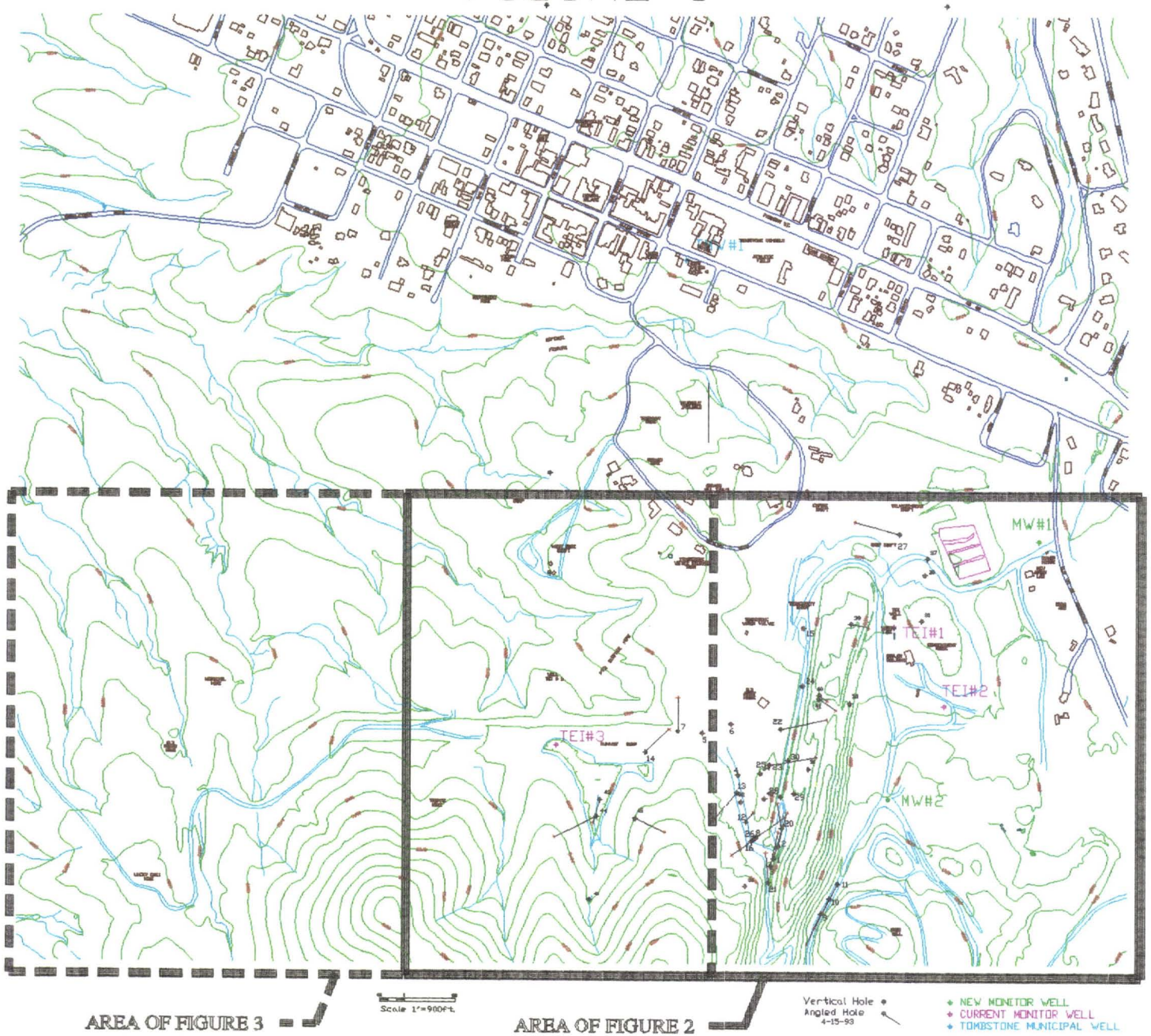
It is anticipated that the drilling program in the Contention area may define an ore body. Thus an APP for operation may be required. It is understood that the permit issued to PBR Minerals Inc. is in noncompliance, and an APP for closure is required. Both will be started on by mid June.

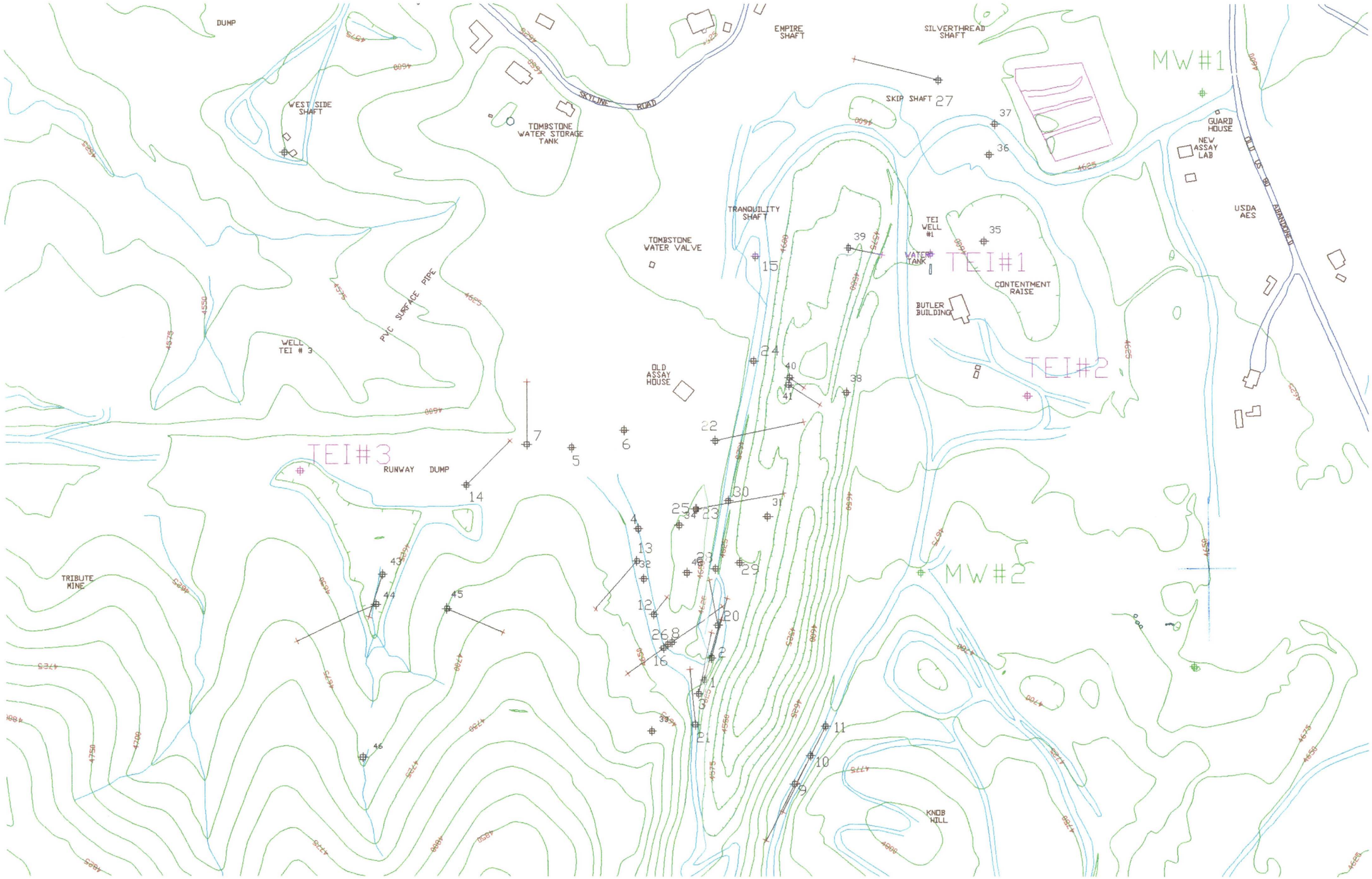
Very truly yours;

James A. Briscoe
Registered Geologist

DGB06/01/93
cc: Jerry Niedfelt, Pres., Tombstone Development Co.
A. Douglas MacKenzie, Pres., Excellon Resources USA Inc.
James Knox, Pres., USMX Inc.

FIGURE 1

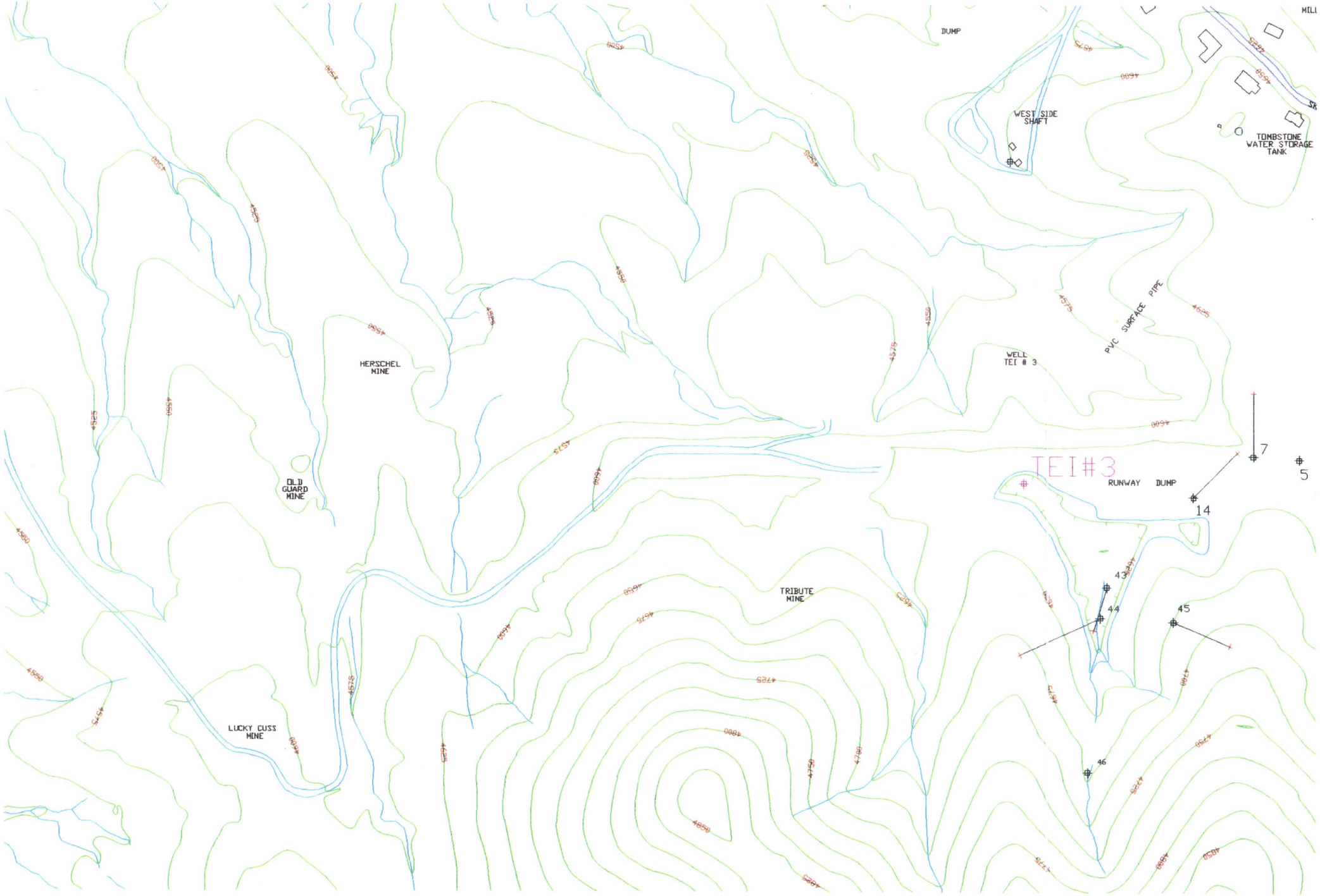

MW#1
TEI#1
TEI#2
TEI#3
MW#2
AREA OF FIGURE 3
Scale 1"=900ft.
AREA OF FIGURE 2
Vertical Hole
Angled Hole
4-15-93
NEW MONITOR WELL
CURRENT MONITOR WELL
TOMBSTONE MUNICIPAL WELL



Scale 1"=300ft.

FIGURE 2

- NEW MONITOR WELL
- CURRENT MONITOR WELL
- TOMBSTONE MUNICIPAL WELL



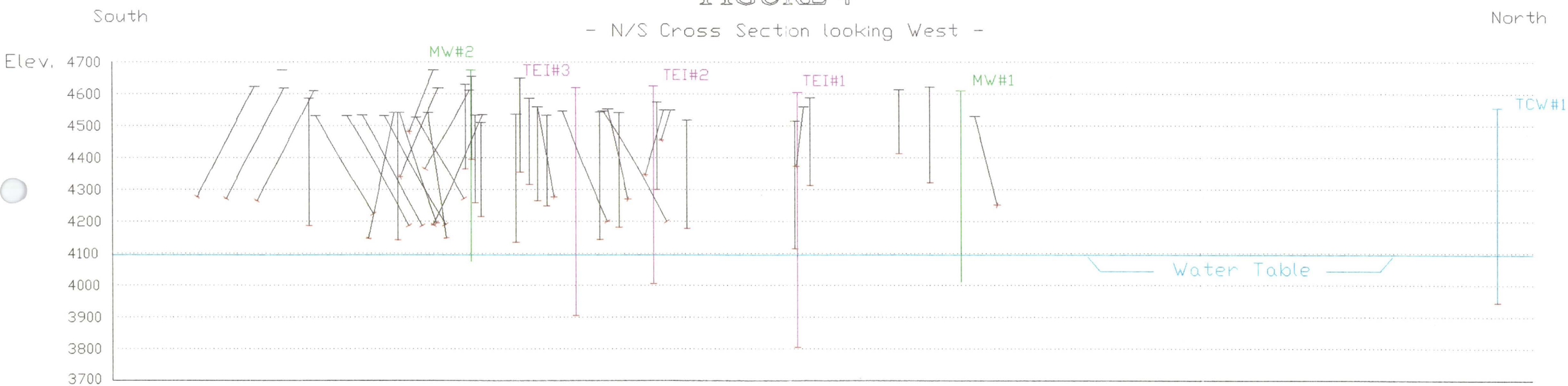
150 0 300
Scale 1"=300ft.

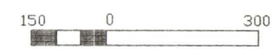
FIGURE 3

- NEW MONITOR WELL
- CURRENT MONITOR WELL
- TOMBSTONE MUNICIPAL WELL

FIGURE 4

- N/S Cross Section looking West -





Vertical & Horizontal Scale 1"=300 ft.
4-15-93

ADEQ MEETING

ATTENDANCE LIST

PURPOSE: Application Mtg. **DATE:** 4/28/94

FACILITY: Tombstone Development **INV. NO.** 102806

NAME	AFFILIATION/ADDRESS	PHONE/FAX
1. Michael Greenslade	ADEQ Mining Unit	207-4621
2. Tim Davis	" "	207-4571
3. Frank E. Gallup	TDC	308/382-8006
4. Barry W. Niedfelt	Tombstone Devel. Co., Inc.	(308)382-7480
5. Jean Black	ADEQ Mining Hydrologist	207-4668
6. Don Bell	ADEQ Surface Water Eng.	207-4613
7. Jim Brewer	TABA Inc. Rep. TDC	721-1375
8.		
9.		
10.		

NOTES:

Design Plan

Must have Engineering drawing of each bldg or facility. If doesn't have must draw up.

Heap - T Clip

Waste Dumps. T CIP

For each discharge area we must have a discharge plan.

Tim Davis 5/12/94
11:05

I. Temporary Closure

Site Plan

Label all Bldgs
" " wells by type

all bldgs will be discharge

Sites

If they don't have H2O to them they prob. won't. We have to say.

We have to manage all Facilities so there is no discharge

Gary Lindroos — Get statement from him re: washing of the TEI Cyanide drums that are now in the cell.

Local Fill is from the solid waste permit

Location of Discharge points

Leach heaps

TCLP Assay's — for Toxic

Reuse :- Chemicals

Break permit up into

I Closure Section

II Operations (New)

- Closure plan

Include all wells within 1/2 mile.

- Site Plan Map.
  - 1 for Closure with any areas for post closure monitoring.
  - 1 for Operation.

Drums - If they've been rinsed - they are just garbage & can be disp. in dump.

Mark out tables w/ spray paint

Chlorox - H_2CN

Peroxide →

1st Piece

Arizona Department of Environmental Quality

AQUIFER PROTECTION PERMITS DETERMINATION OF APPLICABILITY

Contention Mine
NAME OF THE OPERATION

Tombstone Development Company
NAME OF OWNER

NAME OF OPERATOR

Old Bisbee Highway
LOCATION OF OPERATION (STREET ADDRESS)

31° 42' 28", 110° 2'
LATITUDE AND LONGITUDE

T.20S., R.22E., SE1/4 Sect. 11, SW1/4 Sect. 12, NW1/4 Sect. 13
TOWNSHIP, RANGE, SECTION, QUARTER SECTION NE1/4 Sect. 14

MAILING ADDRESS

Jerome Niedfelt, Pres.
NAME

P. O. Box 1445
NUMBER, STREET OR POST OFFICE BOX NUMBER

Grand Island, NE 68802
CITY, STATE, ZIP CODE

James A. Briscoe (602) 721-1375
CONTACT PERSON NAME AND TELEPHONE NUMBER

Provide a description of the operation (the nature of the business or activity), noting any discharges. See attached definitions.

Dormant open pit mine and precious metal heap leach operation previously leased and operated by PBR (Cowichan) Minerals, Inc., circa 1986 through 1989, and previously by Tombstone Exploration, Inc., circa 1979 to 1985, and Cochise Silver Mines, circa 1985-1986. This operation used cyanide heap leaching to recover gold and silver. This is a closure permit to finalize these previous operations.

Return to:

Arizona Department of Environmental Quality
Plan Review & Permits Section
3003 N. Central Ave., 5 Floor
P.O. Box 600
Phoenix, AZ 85001-0600

WPU Form (Revised 6-91)

The purpose of this form is to help enable the staff of the Water Permits Unit of the Arizona Department of Environmental Quality to determine which, if any, regulatory programs may apply to an activity in which you are engaged or in which you may become engaged. The Department regulates many kinds of activities; therefore, many of the kinds of facilities or activities listed below may not apply to your operation or property. None of the questions below pertain to non-commercial use of products generally available to the public. Please answer all questions and, where applicable, explain with sufficient detail in the requested description. Attach additional sheets and reference sheets as needed. Please attach any design plans, site plans, maps etc., that may assist in this review.

Is the operation involved in any of the following?

		If yes, Describe. Attach additional sheets as needed.
Industrial Wastewater Disposal	Yes (No)	
Industrial Wastewater Treatment	Yes (No)	
Sanitary Wastewater Disposal	Yes (No)	
Sanitary Wastewater Treatment	Yes (No)	
Settling, Flocculation or Filtration	(Yes) No	Settling ponds were used in rock washing operation.
Release or Storage of Liquids or Semi-liquids to a Ditch, Pit, Pond, or Land Surface	(Yes) No	Previous use included this as part of heap leach operation.
Disposal of Waste Solvents or Oil to a Ditch, Pit, Pond, or Land Surface	Yes (No)	
Reuse of Industrial or Commercial Process Wastewater	(Yes) No	The leaching circuit recirculated all water.
Reuse of Sanitary Wastewater	Yes (No)	
Discharge to a Community Sewer System	Yes (No)	
Pre-Treatment of Wastewater before Discharge to Sewer	Yes (No)	
Release of Water or Wastewater to a Lake, Stream, River, Dry Wash or other Surface Water Body	Yes (No)	
Groundwater Recharge Project	Yes (No)	
Underground Storage and Recovery Project	Yes (No)	
Operations that Add a Pollutant to a Salt Dome or Salt Bed Formation	Yes (No)	
Operations that Add a Pollutant to a Drywell	Yes (No)	
Operations that Add a Pollutant to an Underground Cave or Mine	Yes (No)	
Bioremediation	Yes (No)	
Application of Materials to the Land Surface	Yes (No)	

If yes, describe. Attach additional sheets as needed.

Land Treatment of Wastewater	Yes (No)	
Burying of Wastes	Yes (No)	
Disposal of Garbage, Trash, Refuse, Manure, Process Waste, Rubbish, Construction Debris, or other Solid Waste	(Yes) No	Construction debris ~~associated with~~ last phase of mining
Sludge Disposal	Yes (No)	
Mining	(Yes) No	Inactive open pit mine 140' deep x 7,000' long x 300' wide
Milling	(Yes) No	Rock crushed for heap leaching-inactive
Ore Processing	(Yes) No	Gold/silver cyanide heap leaching
Leaching Operations	(Yes) No	Gold/silver cyanide heap leaching
Placer Mining	Yes (No)	
Sand and Gravel Extraction or Washing	(Yes) No	Neutralized heap leach tails are used for ABC road metal & gravel applications
Chemical Use	(Yes) No	Assay laboratory chemicals-stored in fenced, locked, block building
Chemical Storage	(Yes) No	Metallurgical chemicals were stored-now have been neutralized
Chemical Production	Yes (No)	
Fuel Storage	(Yes) No	Fuel was stored in above ground tanks, now removed
Use of Hazardous Substances	(Yes) No	Cyanide - now neutralized
Storage of Hazardous Substances	(Yes) No	See above
Generation of Hazardous Wastes	Yes (No)	
Treatment, Storage, or Disposal of Hazardous Wastes	(Yes) No	Cyanide used in heap leach process-all has been neutralized
Dust Control	Yes (No)	
Truck or Car Washing	Yes (No)	
Aircraft or Automobile Servicing	(Yes) No	Trucks & Heavy equipment serviced-minor oily filters remain-to be disposed of
Printing	Yes (No)	
Waste Recycling	Yes (No)	
Manufacturing	Yes (No)	
Parts Assembly	Yes (No)	
Photographic Processing	Yes (No)	
Drilling	(Yes) No	Permitted exploration drilling-holes all backfilled & properly abandoned
Well Development	(Yes) No	Permitted water (3) & monitor wells (2) are on property

If yes, describe. Attach additional sheets as needed.

Groundwater or Vadose Zone Monitoring	(Yes) No	By monitor wells PBR #1 & TDC #1 as well as water wells TEI #1, 2 & 3
Agricultural Production	Yes (No)	
Tree Farming	Yes (No)	
Horticulture	Yes (No)	
Silviculture	Yes (No)	
Aquaculture	Yes (No)	
Animal Feeding Operations	Yes (No)	
Raising Livestock	Yes (No)	
Agricultural Application of Sludge	Yes (No)	
Irrigation	Yes (No)	
Boarding Animals	Yes (No)	
Tick-Dipping of Animals	Yes (No)	
Food Preparation	Yes (No)	
Dry Cleaning	Yes (No)	
Painting	Yes (No)	
Paint Stripping	Yes (No)	
Medical, Dental or Veterinary Services	Yes (No)	
Mortician Services	Yes (No)	
Other Activity (Other than Household Activity)	Yes No	Describe:

If you answered yes to any of the above please provide a brief description of the type, composition, quantity of any materials used, stored, handled or disposed of. (Attach additional sheets and reference sheets as needed)

As part of 3 separately managed gold-silver heap leaching operations from circa 1980 to circa June, 1990, cyanide was used as the leaching agent. Various water and monitor wells were analyzed regularly. Elevated cyanide and mercury were found in TEI well #2, approximately 10 years ago. Sampling in the spring of 1993 showed elevated nitrate (16 ppm) but no cyanide or mercury (see assay sheets). No pollutants have ever appeared in adjacent monitor and water wells PBR #1 & TEI #1 have never shown nor now show pollutants. Monitor well TDC #1 was drilled to determine if any plume had migrated from the area of TEI #2.

Analyses showed there was no migration.

As is typical for heap leach operations, all solvent solutions and pregnant (metal bearing) solutions were carefully circulated so that no metal or solvent would be lost. It appears that there was some leakage from the TEI preg/barren solution pond. Remediation of this area was done by PBR Minerals, circa 1986-88. Recent sampling in backhoe trenches up to 12 feet deep showed small amounts of cyanide in localized areas. These areas are still being mapped.

The PBR heap leach installation was constructed in 1988. It has double lined reuseable heap leach pads and ponds. PBR ceased operations in the spring of 1989, and shortly thereafter declared bankruptcy. Recent testing show the pads and ponds have been neutralized, except for very small areas of low level cyanide. Cyanide containers in a fenced area as part of this APP for closure application have been triple washed with sodium hypochlorite and rinsed, destroying any remaining cyanide.

Above ground fuel and waste oil tanks have been pumped clean by Metro Oil and the tanks sold to other users. Various non-hazardous waste has been disposed of by hauling to the Tombstone public land fill. Scrap metal has been collected and sold to scrap metal dealers. Mine tires over 36" in diameter have been collected and placed in a tire cell (see map) and will be buried. Chemicals have been inventoried in the assay lab and stored for future use. Drainage of surface run-off has been channeled away from the open pit.

The land fill in use during the previous mining operations (see map) is awaiting permit for closure. Old PVC leach pipe

has been piled at the edge of this dump for disposal. Several hundred cyanide barrels dating back to the period 1980-1985. These drums were reportedly washed and are crushed. An impermeable membrane and clay capsule was constructed to receive these drums. They are awaiting a disposal permit before covering.

Attached colored maps at a scale of 1" = 200' show details of the above.

Does the Operation include any of the following features?

		Indicate number and type of features and describe briefly
Surface Impoundments	(Yes) No	Old preg/barren cyanide solution ponds & fresh water makeup surge ponds
Evaporation Ponds	(Yes) No	Tailings wash ponds - slime evaporation ponds
Holding, Storage or Retention Basins or Ponds	(Yes) No	No longer in use - associated with past heap leach operation
Treatment or Disposal Pits	Yes (No)	
Sewage Treatment Ponds or Lagoons	Yes (No)	
Settling Ponds	Yes (No)	
Percolation Ponds	Yes (No)	
Sludge Ponds	Yes (No)	
Sludge Drying Beds	Yes (No)	
Evapotranspiration Beds	Yes (No)	
Wisconsin Mounds (Mound Disposal Systems)	Yes (No)	
Septic Tanks	(Yes) No	At the assay lab, Butler office building & the metallurgical buildings all have small
On-Site Sewage Disposal System	Yes (No)	septic tanks for ~~tails~~ toilets & sinks
Leach Lines/Leach Field	(Yes) No	See septic tanks
Disposal or Seepage Pits	Yes (No)	
Wastewater Treatment Plant	Yes (No)	
Storm Sewer	Yes (No)	
Storm Water Impoundments or Containment Features	Yes (No)	
Storm Water Diversion Features	Yes (No)	
Canals, Ditches or Other Facilities for Surface Transportation of Water	Yes (No)	
Swimming Pool	Yes (No)	
Drywell Which Receives Storm Water Runoff	Yes (No)	
Drywell Which Receives Storm Water in an Area Where Chemicals are Used, Stored, Treated, Handled, or Manufactured	Yes (No)	
Injection Wells	Yes (No)	
Water Wells	(Yes) No	3 to an average depth of 600'-see cross section
Monitor Wells	(Yes) No	2 as above - see cross section

Indicate number and type of features and describe briefly.

Oil, Gas, Geothermal or Helium Wells	Yes (No)	
Mine Tailings Piles	(Yes) No	See map-tails all neutralized & cyanide free
Mine Tailings Pads	(Yes) No	See map-neutralized & cyanide free
Mine Tailings Ponds	Yes (No)	
Mine Leaching Pads	(Yes) No	See map-neutralized & cyanide free
Mine Leaching Ponds	(Yes) No	Empty and contain no metals
Above Ground Storage Tanks	(Yes) No	Removed from property
Underground Storage Tanks	Yes (No)	
Landfill or Solid Waste Disposal Facility	(Yes) No	Used for mine opreation solid waste

Are there any wastes or by-products created in the operation or activity?

a. If yes, what are they?

b. How are they discharged or disposed?

c. Where is the location of the discharge?

d. What is the frequency and volume of discharge?

e. Is there any treatment before discharge? If yes, describe.

Do you own or operate any land, building, installation, structure, conveyance, area or source associated with the discharging or disposal activity, operation, or facility in question? Yes

If yes, a. When was it constructed? 1988

b. Have there been any modifications since the original construction? No

c. If yes, when?

d. What was the nature of the change? (provide details regarding changes in quality or quantity)

e. Are there any wastes or by-products that resulted from the modification?

f. How are they disposed?

Are there any wastes or by-products stored on-site? No

a. If yes, describe type, quantity and nature of storage.

Does the operation or activity involve sewage disposal or reuse of reclaimed wastewater? No

a. If yes, describe. Attach additional sheets as needed.

b. Attach copies of an Approval to Construct and Approval to Operate from authorized agency.

Are there any industrial or non-domestic sources of sewage or wastewater? Yes

a. If yes, describe A septic tank for toilet facilities for office, assay lab and mill buildings.

How long has the facility operation or activity been at it's present location? About 14 years

Is the facility in operation now? No

a. If no, when did operations cease? Circa June 1990

or: b. When are operations expected to begin?

List any environmental permits held by the operation, facility or activity. Provide the permit number and the name of the issuing entity. GWIP #_____ from AZ DWR. This permit was allowed to lapse during the bankruptcy of PBR Minerals, Inc.

What is the depth to groundwater beneath the operation or activity? Approximately 500' to static water table

a. Source and date of data: Recent measurements in water wells TEI #'s 1, 2 & 3, and monitor wells PBR #1 & TDC #1

Does the operation involve any groundwater monitoring or environmental remediation?

a. If yes, describe Ground water has been recently tested from all water and monitor wells.

b. Attach most recent groundwater analyses

c. Attach any wastewater or effluent analyses, waste characterization studies or ambient groundwater analyses.

I James A Briscoe, certify that the information provided in this form is true to the best of my knowledge.

James A Briscoe Pres. JABA Inc. 3/29/94

Signature, Date, Title

Return to:_____ _____

Evaluator's Name

Arizona Department of Environmental Quality

AQUIFER PROTECTION PERMIT APPLICATION

(see guidance document for details)

A. FACILITY DATA

1. NAME OF FACILITY (List previous names, if any)

   Contention Mine

2. a) DATE FACILITY BEGAN (or is expected to begin) OPERATIONS

   Circa 1980 to Circa June, 1990

   b) EXPECTED LIFE OF THE FACILITY

   Currently dormant

3. MAILING ADDRESS OF FACILITY

   2100 N. Wilmot Rd., #218

   Tucson, AZ 85712 and

   P. O. Box 1445

   Grand Island, NE 68802

4. FACILITY ADDRESS

   Old Bisbee Highway, Tombstone, Arizona

5. COUNTY Cochise

6. FACILITY LOCATION

   a)

Township	Range	Section(s)	Quarters
20S.	22E.	11	SE 1/4, ___ 1/4, ___ 1/4
20S.	22E.	12	SW 1/4, ___ 1/4, ___ 1/4
20S.	22E.	13	NW 1/4
20S.	22E.	14	NE 1/4

   b) Latitude 31° 42' 28"

   Longitude 110° 2'

7. FACILITY CONTACT PERSON James A. Briscoe

8. TELEPHONE NUMBER (602) 721-1375

9. NATURE OF BUSINESS (FACILITY)

Gold/silver mine and heap leach facility

B. APPLICANT INFORMATION

1. NAME OF APPLICANT

Jerome Niedfelt, President
Tombstone Development Company

2. APPLICANT MAILING ADDRESS

P. O. Box 1445
Grand Island, NE 68802

CONSULTANT MAILING ADDRESS (OPTIONAL)

James A. Briscoe
JABA, Inc. (602) 885-9141
2100 N. Wilmot Rd., #218, Tucson, AZ 85712

3. TELEPHONE NUMBER OF APPLICANT

(308) 382-7480

C. OWNER INFORMATION

1. NAME OF OWNER

Tombstone Development Company

2. OWNER MAILING ADDRESS

P. O. Box 1445
Grand Island, NE 68802

3. TELEPHONE NUMBER OF OWNER

(308) 382-7480

4. LAND OWNER

As above

5. LAND OWNER ADDRESS

As above

D. OPERATOR INFORMATION

1. OPERATOR NAME

As above

2. OPERATOR ADDRESS

3. OPERATOR TELEPHONE NUMBER

E. EXISTING ENVIRONMENTAL PERMITS

1. NPDES PERMITS & NUMBERS

_____

_____

2. REUSE PERMITS & NUMBERS

_____

_____

3. RCRA PERMITS & NUMBERS

_____

_____

4. AIR QUALITY PERMITS & NUMBERS

_____

_____

5. SOLID WASTE PERMITS & NUMBERS

_____

_____

specify which wells are which
- Drinking water wells
- monitor wells
- stock wells

list each wells.

G. REQUIRED ATTACHMENTS

Please indicate in the spaces provided that the appropriate attachments or information have been included.

1. LOCATION MAP

_____Have you attached 2 copies of the appropriate map?

Is all the following information indicated on the map?

_____The facility site boundary?

_____An area of at least 3 miles around the boundary?

_____Location of all wells within 1/2 mile of the boundary?

_____Land ownership or use of properties adjacent to the site?

_____Have you included well construction details and well uses?

2. SITE PLAN - TWO COPIES

_____Have you included the site plan?

Is all the following indicated on the plan?

_____Property lines?

_____Buildings and structures?

_____Locations of water wells, borings or samling points?

_____Locations of discharge sites?

_____Topography?

_____Proposed Point of Compliance?

3. FACILITY DESIGN PLANS - TWO COPIES: PROPOSED AND/OR "AS BUILT"

_____Have you included the design drawings?

4. CHARACTERIZATION OF DISCHARGE

Summarize past (or anticipated) discharge practices:

All mining and heap leaching facilities are inactive

a) _____ Have you attached analytical reports or projected data describing the chemical, biological and physical properties of the discharge described above?

b) List the rates at which a discharge has or will occur.

No discharge will occur

What is the duration and frequency of the discharge?

c) List the location of each discharging facility.

Descriptive Name	Latitude	Longitude

Keep liners in good condition

5. DEMONSTRATION OF BADCT

Indicate that you have attached a description of pollutant control methodologies for the facility and a discussion of why they meet the BADCT requirement. You may use this page if convenient.

I. Mine Dumps

The rock comprising the dumps is non-acid generating (composed of oxidized material) and contains sufficient carbonate rock to keep pH neutral to basic. All dumps are at or near head waters of drainage so no significant runoff component is present.

II. Leach Tails

Crushed (-3/8") rock has been leached of its gold and silver values using cyanide, rinsed with water, neutralized with sodium hypochlorite so the cyanide was oxidized. The tails were then removed from the pads to clay lined storage areas (see maps). Some of this material was washed to separate fines from coarse material. All material has been tested with backhoe sample cuts and found (with one small exception - see map) to be cyanide free. Addition of lime during the processing as well as presence of limestone in the rock results in neutral to alkaline character of the tails. Only rainfall directly on the tails inputs water and there is no drainage from the tails.

III. Open Pit Mine

The Contention mine bottom is well above the water table. There is no standing water in the mine. All surface drainage is conducted away from the mine.

6. DEMONSTRATION OF COMPLIANCE WITH STANDARDS.

_____Have you indicated a proposed Point of Compliance on the appropriate site plan or map?

Is the proposed Point of Compliance for:

_____Hazardous substances?

_____Non-hazardous substances?

Provide justification for selecting the proposed Point of Compliance.

_____

_____

_____

_____

_____

_____

_____

_____

Who was responsible for the design & construction of the various facilities.

Keep all facilities grouped together

Do same for the operations portion.

Cover each area thoroughly.

Proposed ops. & then modification of the proposal.

Put in letter as what we've done to remediate areas.

7. DEMONSTRATION OF TECHNICAL CAPABILITY

a. Who is responsible for the design of the facility?

James A. Briscoe, Registered Geologist AZ #9424 & CA #518

Provide the basis for the party's capability:

B.S. 1964 & M.S. 1967 from University of Arizona in Geology, short courses - Eng. & Environmental Aspects of Mine Waste Disposal, 1992, AZ APP Application Process, 1992

b. Who is responsible for the construction of the facility or its components?

No construction involved

Provide the basis for the party's capability:

c. Who is responsible for the operation of the facility?

Tombstone Development Co. through JABA, Inc.

Provide the basis for the party's capability:

See above

8. DEMONSTRATION OF FINANCIAL CAPABILITY

Please indicate in the spaces provided that the appropriate attachments or information have been included. Please submit financial information in a form that will easily allow ADEQ to keep such information confidential.

a) Have you included estimates for the total costs of each of the following aspects of the facility?

_____Construction;

_____Operation;

__X__Closure;

__X__Post-closure care;

b) _____Have you attached the required statement from the applicant's chief financial officer that the applicant is financially capable of meeting the costs estimated in sub-section a) above?

c) If the applicant is not a governmental entity, have you included one of the following?

_____The most recent 10K form of the applicant;

_____A report containing <u>all</u> of the following:

___Applicant's organizational structure Corporation

___Description of applicant's business Real Estate Holding Company

___Applicant's net worth, describing major assets and liabilities

___Description of judgments exceeding $100,000.00 against applicant during five years prior to making this application None

___Description of bankruptcy or insolvency proceedings by applicant during five years prior to making this application. None

___Names & dates of birth of executive officers (If applicant is a corporation);

_____Evidence of a bond, insurance, or trust fund.

9. ENFORCEMENT ACTIONS

Provide a brief description of any action for the enforcement of any federal or State law, rule or regulation, or any county, city or local government ordinace relating to the protection of the environment, instituted against the applicant during the five years prior to making this application.

None

10. ZONING

___Indicate that you have included evidence that the facility complies with applicable municipal or county zoning ordinances and regulations.

H. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

_____

NAME AND OFFICIAL TITLE

_____

SIGNATURE

_____

DATE SIGNED

Jaba Inc.

P E R S O N A L C O N T A C T P R O F I L E

Mr.:Mr. First:Donald Init:G Last:Bell
Title:Water Pollution Compliance Officer Dear:Don
Company:AZ Dept. Of Environmental Quality Bus. Phone:1(602)207-4613,,,,159
Address1:Office Of Water Quality FAX Phone :1(602)207-4634,,,,159
Address2:3033 N. Central Avenue OtherPHONE:
City:Phoenix Executive:James Briscoe
State:AZ Zip:85012 Country:USA
Code:Government User 8:
Type:Hydrologist User 9:
ID Number: User 10:
User 4: User 11:
User 5: User 12:
User 6: User 13:
User 7: User 14:

Notes

Friday 01/29/1993 12:31 PM JB

DB will revoke tha PBR GWIP, & send it to the bankruptcy judge & see what he has to say. Wanted to give me notice so I wasn't suprised.

In April we need to get togather for a pre application meeting, and I will need a completed compliance schedule -- such as what are we going to do about the nitrate & cyanide plume, ? what about the heap leach ? will we do about closure or opening. Closure will require temporary closure, revegetation etc - see my BADCT documents. Review with Ed or Don. They will then review & give opinions for corrections revisions etc. Within the next 6 months have an outline of a APP with the gist of what will be done. Then 6 months later will submit a full application (early 1994). Then after review for approval which could take 6 months to a year and that includes Public Notice. If substantial comment from the public, then will have to hold a public meeting(s) in Tombstone or Bisbee and respond adaquately to those meetings. Then we can get approval for construction of the remediation plan.

The ADEQ will demand that the APP have TDC involved with it - cosigning or whatever. TDC has always been responsible for the property but they haven't been paying attention -- ie they can't retreat to Nebraska and be oblivious to what is going on with the leasors. ADEQ will assess fines against TDC for non-compliance on the part of leasors. Examp. $8mm fine Magma at Pinto Valley for letting Tails slump into Pinto Creek.

Tuesday 01/26/1993 9:46 AM JB

Pumping of TEI #2 is not the solution according to Don Bell. They (the ADEQ) are concerned that there is a plume of contaminate that has to be measured to see how large it is. This will entail measuring other wells to determine the extent of contamination and the direction of ground water flow. We have to design the test work and remediation, and show why it is

Notes

adaquate to solve the problem. If we don't they will at 3 to 10 x our cost. He says it won't be expensive, just a few more small test wells (1 or 2 or 3) to determine the amount, depth and direction of flow.

He enphasized that I should talk w/ Dave Anderson (the hydrologist) before proceeding too much further.

He emphasized the need to take it slowly and design the right program (inferred with the checking of their dept.) so we don't do any wheel spinning.

He will be happy to talk w/ Jerry, ADM, Jim Knox or whoever.

Monday 01/25/1993 4:15 PM JB

Don't think we should contimue pumping into the unlined pond which is a violation of the .

Give Dave Anderson a call 207-4669

Monday 01/25/1993 1:08 PM JB

Concerned that we're pumping water with above MCL nitrate into an unlined pond and "robbing peter to pay Paul" as far as potentially contaminating the ground water with itself. He suggests we stop pumping until he can research the problem to see what can be done.

Monday 01/04/1993 9:33 AM JB

Concerned about the bankruptcy judge re: what to do about the real property like the PBR pump. He would like to see my map of the area to be drilled. He has some suggestions on my letter & will fax me his notes.

Tuesday 12/22/1992 3:41 PM JB

May just be able to work toward closure with just the GWQPP, without going to an APP.

He'll review & get back tomorrow. Roger Kennett is snowed under & will get back to me after the 1st of the year.

FAX transmittal is fine no need to mail copies.

Sampling will simplify and better direct the document preparation, and it is his top priority and what we should do first ASAP. Lack of cooperation and speed will result in movement toward a consent decree from the Attorney Generals office. Costs could scalate 10 x by the time all the attorneys are paid.

Tuesday 12/22/1992 10:15 AM JB

Ph & Conductivity ?yes.

Frequency for sampling will be determined on the basis of what these samples show.

Inspection in Mid Jan.

Washed Cyanide drums - what can we do about disposal? Just get it all togather & determine whether we need to get it into a certified land fill. Let it go until we can deal with everything togather rather than making it worse by burying it

Notes

and then digging it up etc.

Have to address what to do with leachate in the bottom of the leach pond.

Inspection of runoff control. Measure rainfall at site. Report on all these things. Photos of problems & solutions before and after, once we've established a definitive plan of action.

Wednesday 12/09/1992 4:23 PM JB

What is the nature of the relationshipof TDC to Briscoe ? They have given me authorization as their consultant to proceed with the work proposal and sampling discussed.

Fly in the ointmentment - bankrupt proceedings Cowichan & PBR was left alive - may have some criminal proceedings against some of the PBR - Cowichan.

Point DB wants to make as far as Don Bell is concerned we are working toward starting on the application for APP at TDC's expense.

DB will write a memo to all players including Roger Kennett. Within the next two months get a compliance schedule as a target. It might cost 10 - 20 K to clean up things to make ADEQ comfortable -Over next 2 - 3 months

Friday 11/27/1992 2:23 PM JB

If drilling is done within their precepts they will allow us to proceed with the exploration.

Will be a need for them to apply for an APP as the last permit no longer exists as the Co. no longer exists. Have an APP to run the pollution control system & water shed management. Proper treatment would be capping or vegetating, Within 3 years, they would have to come into compliance..

Tuesday 11/24/1992 11:21 AM JB

Don called out of the blue. First wanted to apologize for not getting back to me sooner -- but he's been pressed on various other more serious cases. Wanted to know what was going on down there. I said that we would be JVing with USMX in the very near future and they would be drilling about 25 holes within the month. He immediately said he couldn't go along with that until they got an environmentally responsible party to respond to the current permit, which was the point of his call this morning. I asked why he thought that exploration holes would have any effect on pollution. He said it would co-mingle potentially polluted ground water. I said there was no intent to drill into the water table & there wouldn't be any cross contamination as the holes would be plugged. He said regardless, unless there was someone to take responsibility for the current permit owned by PBR, he wouldn't allow any further work on the property - regardless that it was related to

Notes

exploration or not.

We went thru the repeat of our earlier conversation that this was an opportunity for the State of Arizona to get a responsible party to perhaps develop a mine but that without exploration, no one was going to take environmental responsibility for predecessors activities so they could do exploration. He said it was the responsibility of the owner for failures of past lessors who didn't live up to their contracts. That TDC had all indications of an absentee landlord who wasn't paying attention to their responsibilities -- and they would have to bear the brunt of clean up and show financial responsibility. If the cleanup bankrupted them, then so be it, and the property would revert to WARF (sp?) an acronym that he neither knew the correct letters for nor the derivation. But it is the state Super Fund and the equivalent of the Federal CERCLA SuperFund. It is important not to force them into enforcement and their doing any study and remediation because there will be non-compliance penalties (fines) plus the law states they can charge their costs (perhaps done by a subcontractor) times 3. Thus its conceivable that costs could be in the $100/ hr range x 3 or $300. Not inconceivable that personal responsibility on the part of the officials of TDC could be assessed. What ever is done it will be much less expensive to have it done by TDC & their subcontractors.

They need:

1. The owners to take responsibility for the ground & what ever is needed for remediation.
2. The owners (since PBR for all intents & purposes no longer exists) to take responsibility for the permit that is now in existence. They must then abide by and administer the permit.
3. The owner must be able to show financial responsibility.
4. The owner (responsible party) must come to Phoenix and meet with the ADEQ (Don Bell & others), and explain how the permit administration and closure will be done. This will not be free. Sampling must be done and a remediation plan executed. The permit must be either maintained as an operating permit or closure must be pursued. He suggests that Jerry Neidfelt authorize me to look into an APP (Aquifer Protection Permit) -- he will then send one to me and Jerry.

If TDC gets underway and starts meeting its responsibilities, he will work with the current lessors, so that the APP will include drilling as part of the activities of the APP and they can proceed so that an ore zone can be drilled out and then an operating mine can be permitted.

He has time to meet in Phoenix on Dec. 10 to review with the owners how they will proceed to administer the permit and will

Notes

coach them on proper proceedure. If the ADEQ has to proceed on this on their own, they will first issue fines for noncompliance & that will end up in TDC's lap for payment. Then they will study the site themselves (thru subcontractors) at cost x 3. They will bill TDC for that.

He pointed out that the only reason that they haven't proceeded before this to levy non-compliance fines is because I contacted them first and have acted in a professional & competent manner in starting compliance. He suggests that TDC, because of my familiarity with the project, act as contractor to do what is necessary to bring the current permit into compliance and proceed with closure. He will so inform Jerry Neidfelt of that when he talks to him. He doesn't think there is a great problem, but there must be timely reporting and compliance. If not, they are not doing their job & they suffer the repercussions.

Thursday 09/10/1992 10:13 AM JB

Don will come down tomorrow with Dale Anderson a hydrologist. They will leave Phx. @7:30 & be here about 10 at Wilmot office. Andy Rendes of the Tucson AZDEQ - Water Quality branch will me us there. I will give a presentation on what we will be doing in Tomb. as part of the geologic exploration program. This is important that they get an overall picture of the geologic environment and what the outcome could be. Also as it relates to the metal zoning pattern & how that relates to the soluble metals. Again I explained that we will be using no cyanide. That no mercury to my knowledge has been used in the district, and that any present probably comes from the oxidation of sphalerite which almost always contains minute amounts of Hg.

He said that the AZDEQ was most interested in getting a good scientific basis of what was going on in the district as it relates to the geohydrology. He felt that from what I have told him of our proposed work that with a few embellishments in water sampling it would probably be applicable to what the AZDEQ needs for an Aquifer Protection Permit (APP), which they will require that we have (get). He also pointed out there the Tombstone people, because of lack of knowledge of what is going on, have been coming to the Phx. office of AZDEQ & checking the file. This of course catalyses them into further activity.

Because of the problems of repeated bankruptcies leaving pollution questions un answered, he wants to involve the TDC people early on and make it clear to them that they have the ultimate responsibility for the property. Further, that he thinks that it may be best that the APP reside with them, and is

Notes

part of our lease, as it hasn't worked the other way around in the past. It is very clear to the AZDEQ that cleanup of any ground water is TDC's problem, and that if Excellon should terminate, TDC would be required to get an APP and do any clean up that is necessary. Thus their insistence in the Lease Contract that Excellon pay remediation out of its pocket is ultimately counter productive as it discourages Excellon from continuing, & giving the property back to TDC at which point they would be responsible for cleanup, with no lessor.

I explained to DB that if we made the discoveries I expected, we might develop a well field for the Town out of the mineralized area to the northwest. He suggested that at some point it would be worthwhile to have a town meeting and explain to the townfolk what is happening. I agreed & said I personally didn't have a problem with that.

After the conversation, Tom Waldrip & I discussed whether he should go on the trip to Tombstone that will follow the office presentation. We determined it would be best for the two of us to go, so there would be a second party that could confirm what took place at the field meeting.

Tuesday 08/25/1992 1:19-1:57 PM JB

Don Bell called to make an appointment to come to Tucson to review the situation w/ Tombstone water permit compliance. He'll come w/ Dale Anderson, a new employee who they're breaking in. He'll bring the entire file which we can copy on our copier. He'd like to review what we have planned & then go down to the property and review it on site. He said there may be a way of getting a temporary permit to get us thru the exploration period. Then if we define an ore body we can go forward with a new permit or if we drop the property, TDC will then have to go thru closure. The innuendo is they'd like to cooperate with us as much as possible.

It appears that PBR did everything right, they just didn't complete it. All that may be necessary is to do additional pumping and testing of the PBR wells.

There have been several people up looking at the file in the last two months perhaps from Tombstone. If their hand is forced by public opposition, they'll have to be more stringent.

He again mentioned nitrogen & Hg. I think the only source of nitrogen is either bat guano or sewage from the town of Tombstone & said so. I also pointed out that Hg is contained in Sphalerite & that is the only source of Hg I know of. Early milling could have used amalgamation - but most of the mills built right after discovery were along the San Pedro - Charleston or Fairbank. The mills built in Tombstone were chloride & later cyanide mills.

Notes

If there is legal questions to be answered their lawyer, and Assistant Attorney General is J. Skardon, phn. (602)542-1610.
Wednesday 08/12/1992 10:15 AM JB

Haven't kept up with ground water permit reports. One well came up with some lead & nitrate.

Would be difficult to get permission to drill since the area is in non compliance.

Could get a 1 year temporary permit to develop an aquifer protection permit.

APP(Aqifer protection Permit) permit would cost $20 to $50 thousand. Will have a permit to open or close the facility. I explained that we had no interest in opening the project, only exploration to see if there was any economic reserves that would justify the opening of the project. I emphasized that risk capital being what it is, there was no tolerance to undergo extensive testing before confirming there is economic reserves. He pointed out that there was no way around it, that there had to be compliance with the pollution regulations. We then got into a discussion of the presence of lead in the water samples - not unusual for a lead district & I pointed out that there had been dewatering in the district from about 1890 to 1915, that there was at least 30 miles of workings in the district & that a new lessor couldn't be responsible for any metal content that had accumulated in the underground workings.

Trip 2-3 weeks after he gets some other things lined up, ie investigation into what data must be completed. etc, etc.

Table of Contents

JANUARY

FEBRUARY

MARCH

APRIL

MAY

JUNE

JULY

AUGUST

SEPTEMBER

OCTOBER

NOVEMBER

DECEMBER

AVERY® READY INDEX™ INDEXING SYSTEM

JAN

FILE PHDS

JABA INC.
2100 N. Wilmot Rd. #218
Tucson, AZ 85712
(602) 885-9141
(FAX) 721-2768

January 14, 1994

Mr. Allon Owen, PE
Director
Cochise Co. Highway & Flood Plain Dept.
619 Melody Lane
Bisbee, AZ USA 85603-3090

Dear Mr. Owen, PE:

Re:Sale of crushed rock to the County of Cochise, Arizona.

I have been authorized by Mr. A. Douglass MacKenzie, President of Excellon Resources USA, Inc. Lessee of the Tombstone Development Company Inc. patented mining land in the Tombstone Mining District, just south of the town of Tombstone on the Old Bisbee Road, to sell to Cochise County crushed unsorted or screened rock from the Contention Mine. You have sampled the rock material in question and have found it satisfactory to your needs. The rock is sold as is, where is and the County will load and haul the crushed rock.

The county shall pay to Excellon $2.75 per ton for such rock.

We would be happy to assist you in any way possible. I may be reached at the letter head address and phone or at (602)721-1375, and Fax (602)298-6688.

Very truly yours;

James A. Briscoe, President
Rock Sale Agent, Excellon Resources USA Inc.

cc: A. D. Mackenzie, Pres., Excellon Resources USA, Inc.
Jerome Niedfelt, Pres., Tombstone Development Co., Inc.

AO01/14/94

COPY

FILE Proj. TDC

JABA INC.
2100 N. Wilmot Rd. #218
Tucson, AZ 85712
(602) 885-9141
(FAX) 721-2768

January 18, 1994

Mr. Donald G. Bell
Water Pollution Compliance Officer
AZ Dept. Of Environmental Quality
Office Of Water Quality
3033 N. Central Avenue
Phoenix, AZ USA 85012

Dear Mr. Bell:

Re: Results of analysis of water samples of TDC Monitor Well #1, Contention Mine Area Tombstone Mining District, Cochise Co., Arizona.

Appended with this letter are the results of the sampling of the new TDC Monitor Well # 1 on December 31, 1993. Two samples were taken. One upon the start of pumping of the well at 10:45 am and one at 9:45pm after the well had been continuously pumped for approximately 12 hours.

These results show the well to be within EPA allowable limits for the analyzed elements and compounds.

PBR Monitor Well #1 had a new pump installed in it but it failed to pump water to the surface on December 31, 1993. Yet another pump will be installed and hopefully it will pump properly. It is planned to be sampled January 22, 1993.

Very truly yours;

James A. Briscoe

DGB01/18/94

cc: J. Niedfelt, Pres. TDC

FAXed 1/18/93 12:08pm

American Analytical Laboratories

Tucson — Phoenix — Mexico

LABORATORY ANALYSIS REPORT

Code: TOMDEV
TOMBSTONE DEVELOPMENT CORP.
MR. JAMES BRISCOE
5610 E. SUTLER LANE
TUCSON, AZ 85712-

SAMPLE INFORMATION

Sample..: 018795-01
Clnt Smp:
Descript: WELL WATER
Location: TDC, WELL #1
Samp D/T: 12/31/93 10:45am
Sampler.: G. LINDROOS
Trans By: R. SMITH
Recvd By: G. ABAD
Date Rcv: 01/06/94
Date Rpt: 01/12/94

Analysis		MCL	Results	Date
6.2	ARSENIC		0.007	01/11/94
BE200.7	BERYLLIUM		<0.003	01/10/94
CD200.7	CADMIUM		<0.007	01/10/94
CR200.7	CHROMIUM		<0.03	01/10/94
335.1	CYANIDE AMENABLE/CHLORINATION		<0.01	01/10/94
335.2	CYANIDES, TOTAL		<0.01	01/10/94
PB200.7	LEAD		0.043	01/12/94
245.1	MERCURY		<0.0001	01/12/94
353.2	NITRATE		2.40	01/11/94
270.2	SELENIUM		0.002	01/11/94
AG200.7	SILVER		<0.01	01/10/94

Comments:
All units are MG/L unless otherwise specified.
ND means analyte not detected.
MDL is the Method Detection Limit.

Analyst(s)

3441 East Milber St. Tucson, Arizona 85714 FAX 602-294-1753 602-889-5787 800-658-8601

American Analytical Laboratories

Tucson — Phoenix — Mexico

LABORATORY ANALYSIS REPORT

Code: TOMDEV
TOMBSTONE DEVELOPMENT CORP.
MR. JAMES BRISCOE
5610 E. SUTLER LANE
TUCSON, AZ 85712-

SAMPLE INFORMATION
Sample..: 018795-02
Clnt Smp:
Descript: WELL WATER
Location: TDC, WELL #1
Samp D/T: 12/31/94 09:55 pm
Sampler.: G. LINDROOS
Trans By: R. SMITH
Recvd By: G. ABAD
Date Rcv: 01/06/94
Date Rpt: 01/12/94

Analysis		MCL	Results	Date
6.2	ARSENIC		0.009	01/11/94
BE200.7	BERYLLIUM		<0.003	01/10/94
CD200.7	CADMIUM		<0.016	01/10/94
CR200.7	CHROMIUM		<0.03	01/10/94
335.1	CYANIDE AMENABLE/CHLORINATION		<0.01	01/10/94
335.2	CYANIDES, TOTAL		<0.01	01/10/94
PB200.7	LEAD		0.041	01/12/94
245.1	MERCURY		<0.0001	01/12/94
353.2	NITRATE		2.69	01/11/94
270.2	SELENIUM		<0.002	01/11/94
AG200.7	SILVER		<0.01	01/10/94

Comments:
All units are MG/L unless otherwise specified.
ND means analyte not detected.
MDL is the Method Detection Limit.

Analyst(s)

3441 East Milber St. Tucson, Arizona 85714 FAX 602-294-1753 602-889-5787 800-658-8601

January 28, 1994

Tombstone Development
c/o Steve Henderson
Tombstone, Arizona 85638

Gentlemen:

Associated Images is interested in doing some filming on the old mine road, which is part of your property. This filming is expected to take place on Sunday afternoon, February 20, 1994.

Associated Images agrees to hold Tombstone Development and its agents harmless and free of any liability with regard to this filming. All arrangements to gain entry to the old mine road will be made through Steve Henderson of Tombstone and he will be present during the filming.

We appreciate your giving us access to this property.

Sincerely,

for Mark Webb
Line Producer
Associated Images

cc: Steve Henderson

REVIEWED
J.A.B.

Gary A. Lindroos
P. O. Box 1011
Tombstone, Arizona 85638

January 9, 1993

Mr. James Briscoe
5610 E. Sutler Lane
Tucson, Arizona 85712

Dear Jim:

Enclosed are the testing results for TDC Well No. 1. Also I am in receipt of your letter of Dec. 30, 1993. I will send you $25.00 each week until the balance of $200.00 is paid in full. We will send more if possible. Also when I receive this next check from TDC I will send you that money as payment on our balance to you.

I received the application from GEOTEMPS and am getting ready to send that back to them this weekend also. Thanks for everything.

Sincerely,

Gary Lindroos

JABA INC.
2100 N. Wilmot Rd. #218
Tucson, AZ 85712
(602) 885-9141
(FAX) 721-2768

James A. Briscoe
5610 E. Sutler Lane
Tucson, AZ 85712
(602) 721-1375
Fax (602) 298-6688 (*2 after second ring)

Fax Cover Sheet

DATE 1/14/94 THIS IS PAGE 1 OF 3 SENDER J. A. Briscoe

TO Barry Jacoby COMPANY Cochise Co.

FAX # (602) 432-9432 LOCATION (City/State) Bisbee Az

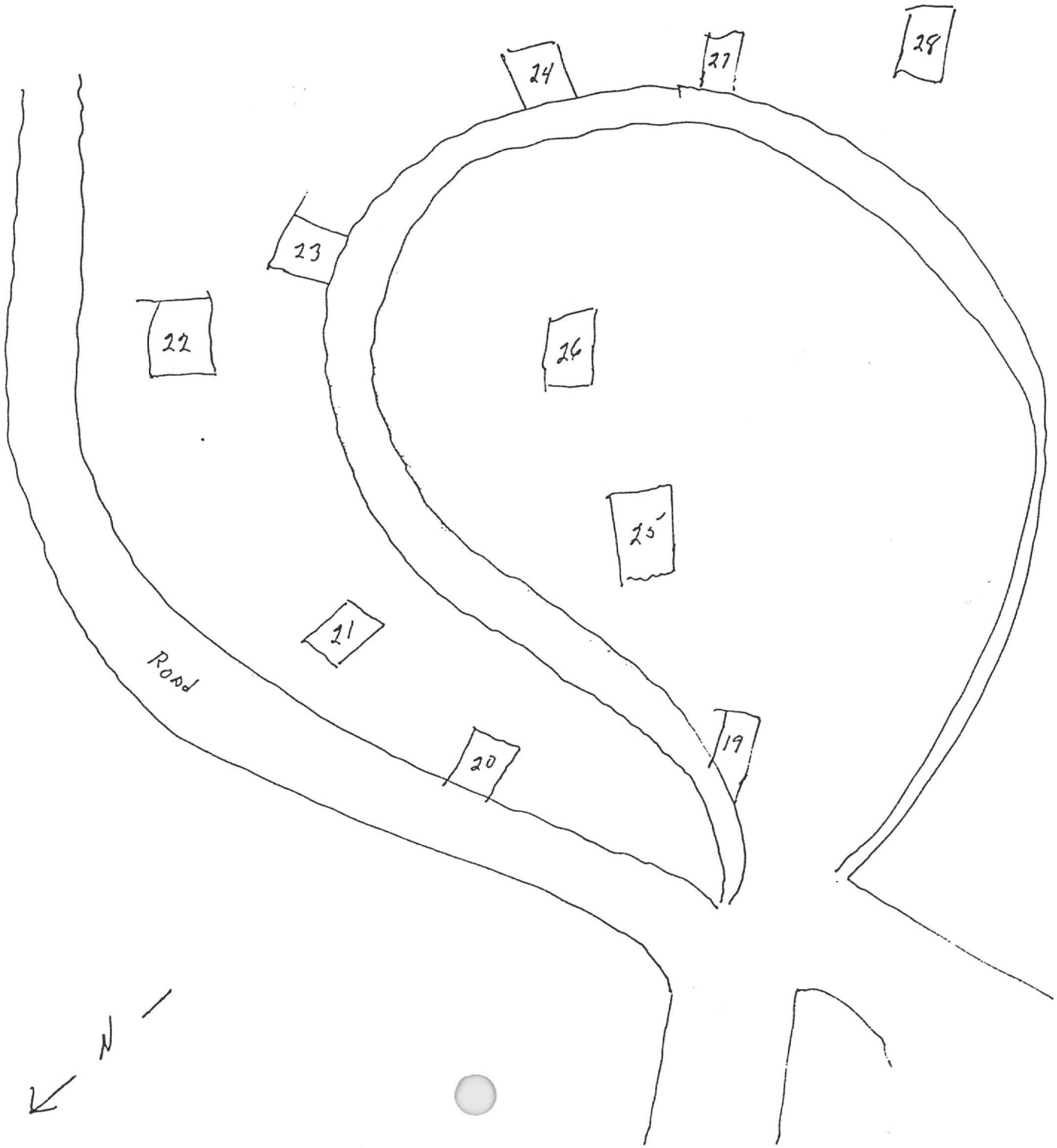
COMMENTS These are the cyanide assays from the crushed rock stockpile you will be drawing from. The map shows the sample sites. We will be producing a better map by the end of the month

JAB

CONFIDENTIALITY CAUTION

This message is intended only for the use of the individual or entity to which it is addressed and may contain information that is privileged and confidential. If the reader of this message is not the intended recipient, or the employee or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and return the original message to us at the above address at our cost.

TEI 7 Lings Pile



CERTIFICATE OF ANALYSIS

18-Sep-93

Sample ID	Mg/L Free Cn	pH	Sample ID	Mg/L Free Cn	pH
No. 19 0' - 3'	<0.01	6.5	No. 28 0' - 3'	<0.01	6.5
3' - 6'	<0.01	6.5	3' - 6'	<0.01	6.5
6' - 9'	<0.01	6.5	6' - 9'	<0.01	6.4
9' - 12	<0.01	6.5	9' - 12'	<0.01	6.5
No. 20 0' - 3'	<0.01	6.4	No. 29 0' - 3'	0.98	7.2
3' - 6'	<0.01	6.5	3' - 6'	1.96	7.4
6' - 9'	<0.01	6.4	6' - 8.5	1.44	6.8
No. 21 0' - 3'	<0.01	6.5	No. 30 0' - 3'	0.72	6.5
3' - 6'	<0.01	6.6	3' - 6'	0.86	6.9
6' - 9'	<0.01	6.5	No. 32 0' - 3'	0.13	6.5
No. 22 0' - 3'	<0.01	6.5	3' - 6'	0.11	6.5
3' - 6'	<0.01	6.7	6' - 9'	0.48	6.9
6' - 9'	<0.01	6.5	No. 33 0' - 3'	0.19	6.6
9' - 12	<0.01	6.5	3' - 6'	0.56	7.0
No. 23 0' - 3'	<0.01	6.6	6' - 9'	0.05	7.0
3' - 6'	<0.01	6.7	9' - 11'	0.04	6.5
6' - 9'	<0.01	6.4	No. 34 0' - 3'	<0.01	6.4
9' - 11	<0.01	6.5	3' - 6'	<0.01	6.4
No. 24 0' - 3'	<0.01	6.3	6' - 9'	<0.01	6.5
3' - 6'	<0.01	6.5	9' - 11'	<0.01	6.6
6' - 9'	<0.01	6.5	5C 6' - 9'	<0.01	6.5
9' - 12	<0.01	6.5	9' - 12'	<0.01	6.5
No. 25 0' - 3'	<0.01	6.5	12' - 15	<0.01	6.5
3' - 6'	<0.01	6.5	5D 0' - 3	<0.01	6.4
6' - 9'	<0.01	6.6	3' - 6'	<0.01	6.6
9' - 12	<0.01	6.5	6' - 9'	<0.01	6.4
No. 26 0' - 3'	<0.01	6.4			
3' - 6'	<0.01	6.4			
6' - 9'	<0.01	6.6			
9' - 11	<0.01	6.5			
No. 27 0' - 3'	<0.01	6.6			
3' - 6'	<0.01	6.4			
6' - 9'	<0.01	6.4			
9' - 11	<0.01	6.5			

REGISTERED ASSAYER CERTIFICATE NO. 14160 CARY ALVIN ANDROOS Date Signed 9-19-93 ARIZONA, U.S.A.

Note: Holes No. 19 through No. 28 are from old TEI Tailings Pad

Instrumentation: Hach DR 1A Colorimeter

JABA INC.
2100 N. Wilmot Rd. #218
Tucson, AZ 85712
(602) 885-9141
(FAX) 721-2768

January 14, 1994

Mr. Allon Owen, PE
Director
Cochise Co. Highway & Flood Plain Dept.
619 Melody Lane
Bisbee, AZ USA 85603-3090

Dear Mr. Owen, PE:

Re: **Sale of crushed rock to the County of Cochise, Arizona.**

I have been authorized by Mr. A. Douglass MacKenzie, President of Excellon Resources USA, Inc. Lessee of the Tombstone Development Company Inc. patented mining land in the Tombstone Mining District, just south of the town of Tombstone on the Old Bisbee Road, to sell to Cochise County crushed unsorted or screened rock from the Contention Mine. You have sampled the rock material in question and have found it satisfactory to your needs. The rock is sold as is, where is and the County will load and haul the crushed rock.

The county shall pay to Excellon $2.75 per ton for such rock.

We would be happy to assist you in any way possible. I may be reached at the letter head address and phone or at (602)721-1375, and Fax (602)298-6688.

Very truly yours:

James A. Briscoe, President
Rock Sale Agent, Excellon Resources USA Inc.

cc: A. D. Mackenzie, Pres., Excellon Resources USA, Inc.
Jerome Niedfelt, Pres., Tombstone Development Co., Inc.

AO01/14/94

FEB

LAW OFFICES OF
LEO N. SMITH
CASAS ADOBES PROFESSIONAL PLAZA
6985 NORTH ORACLE ROAD
TUCSON, ARIZONA 85704
FAX (602) 797-9770 TELEPHONE (602) 797-0777

February 1, 1994

Bisbee Salvage and Equipment Company
Attn: Bill Gianetto
P.O. Box 4517
Bisbee, AZ 85603

Dear Bill:

Confirming our telephone conversations of this afternoon, final steps must now be taken to obtain a closure permit at the Tombstone Development Company property. This is a requisite to the permitting of new operations by TDC's Lessee.

Any salvaging operations you or your contractors hereafter conduct must be conducted at the site of the conveyor and tanks (the "Tanks Area"). Unless sooner removed from the TDC property by you or your contractors, all other machinery and equipment purchased by you at the bankruptcy auction (as shown on the manifest) will be removed to the Tanks Area. TDC will look to you for reimbursement of costs incurred in removing such items to the Tank Area, of any fencing of the Tank Area required of my client by the Arizona Department of Environmental Quality and costs of any sampling and analyses of any equipment for any chemicals thereon or therein.

All material and equipment not listed in the auction manifest are being scrapped and removed at my client's cost and expense and for its account.

It is unfortunate that your efforts have been thwarted by reasons of your health and the failure of your contractors to timely respond.

Best personal regards.

Very Truly Yours

Leo N. Smith

LNS:es

xc: Jerome Neidfelt
James Briscoe

REVIEWED J.A.B.

received 2/2/94

RELEASE

In consideration of the use of the surface of property owned by Tombstone Development Company for dismantling and cutting up equipment and scrap metal located thereon and owned or claimed by Bill Gianetto dba Bisbee Salvage and Equipment Co., the undersigned agrees:

1. To maintain fire suppression devices at the site of any such operations; and

2. To release, indemnify and hold harmless Tombstone Development Company, its lessee, Excellon Inc., and their respective employees and agents from all damages and claims of damages resulting from operations conducted by the undersigned in the salvage and removal of any such equipment and scrap.

DATED this 15th day of February, 1994.

Wendall Gleave

Wendall Gleave, dba
Arizona Metal Salvors

GARY A. LINDROOS
P. O. Box 1011
Tombstone, Arizona 85638

February 13, 1994

Mr. James Briscoe
5610 East Sutler Lane
Tucson, Arizona 85712

Client: Tombstone Development Company
P. O. Box 1445
Grand Island, Nebraska 68802

February 10, 1994:

Approximately 100 cyanide drums from the PBR storage area were neutralized using calcium hypochlorite solution and triple rinsed with fresh water. Neutralized drums are all stored in the fenced storage area.

February 13, 1994

Following are results of sample analysis for pH and free cyanide content of samples located on the TDC property. Samples were collected by James Briscoe on February 6, 1994.

Sample Identification	pH	Mg/L Free CN
✓13-100' SW Tails	6.8	0.082
✓13-100' SW Gila	6.5	0.005
✓13-100' NE	9.4	1.520
✓13-50' NW	6.7	0.045
13-100' SE Gila	6.5	<0.002
14-50' NW	6.5	<0.002
14-100' NE	6.6	<0.002
14-100' SW	6.5	<0.002
✓13-175' SE Gila	8.4	0.038
13-175' SE Tails	6.7	< 0.002
No. 35	6.4	<0.002
No. 36	6.5	<0.002
No. 39	6.5	<0.002

Respectfully submitted:

Gary A. Lindroos

received
2/15/94

REVIEWED
J.A.B.

JABA INC.
2100 N. Wilmot Rd. #218
Tucson, AZ 85712
(602) 885-9141
(FAX) 721-2768

February 15, 1994

Mr. Jerry Niedfelt
President
Tombstone Development Company Inc.
P.O. Box 1445
Grand Island, NB USA 68802

Dear Jerry:

Re: Recommendation to remove valuable core and cutting samples from the Empire core building and dismantle it.

I am including a clipping from a recent Tucson Citizen newspaper about "Killer Bees". I believe they may pose a threat of infestation of the Empire Mine building (core storage) and then threaten the nearby apartments where children play. This, combined with danger from potential transmittal of the Hanta virus and bubonic plague from rodent droppings and dried urine I think there is substantial reason for concern. I would not work with material in the building with out first spraying to saturation with a strong Lysol solution from a hand pumper, 24 hours before entering and wearing of a high filtration dust mask and rubber gloves, nor would I ask anyone else to do so. The ADEQ is also requiring control or removal of any rodent~~s~~ infested buildings.

I recommend removing the valuable core and cutting samples from the building and storing them on racks built into a Mobile Mini container and dismantling the old Empire building.

I am enclosing brochures on the Mobile Mini units and the first part of Tom Waldrip's memo to me regarding costs of the units. It may be that if we put racks in the two Mobile Mini's TDC obtained from Santa Fe Minerals, the extra storage provided thereby may be enough to store all existing samples. We won't know until we try it. These samples should remain as they cost literally millions of present day dollars to obtain and may be a key element in successful discovery of additional mineralization at Tombstone or effectuating a favorable sale of the TDC property in the future.

I talked with Charlie Escapule last night and found that Santa Fe will not be moving their samples and Mobile Mini containers but

COPY

James A. Briscoe, Registered Professional Geologist, Arizona #9424,. California #518

will instead pay rent to the new owner. This means that TDC will have to foot the bill to have Mobile Mini come down from Tucson to move your container. As JABA has to move our container - which you generously gave me permission to put temporarily on the Contention property - we would be happy to split the mobilization cost with TDC. It will cost $35/ hour to move the containers once the Mobile Mini truck gets to Tombstone. I propose that we put these containers in the flat area just to the right of the entrance gate, just south of the new well-TDC# 1. There is both water and power to that site and Steve Henderson points out that the City Marshall can keep an eye on them from the road so they won't be broken into or vandalized. As the containers are steel and are fire proof, water tight and rodent and vermin proof, the samples should remain in good condition indefinitely.

I would be happy to answer any questions you might have on the above recommendations.

Very truly yours;

James A. Briscoe

JN02/15/94b

Drilling to save sting victims

• Bees a year-round problem, **10A**

Source: Greg Flakus, "Living with Killer Bees"

Tucson Citizen

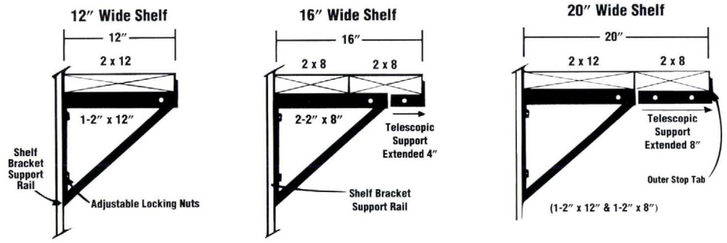
Bee seminar

The Rural/Metro Fire Department is launching seminars to educate the public on Africanized "killer" bees. To attend a seminar, or to schedule

EXCLUSIVE OPTIONAL EQUIPMENT

SHELVING SYSTEM - MAXIMIZE YOUR SPACE!

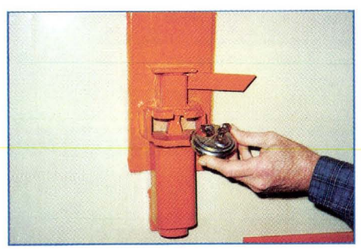
- Optional heavy-duty shelving brackets are fully adjustable for width and height so you can custom tailor them to your storage needs.
- Widths available - 12", 16" and 20".
- Shelves inside or outside.
- Ideal for construction, business or industrial applications.



New Product

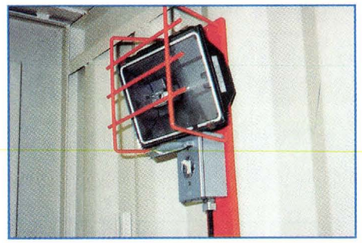
BURGALARM...
Mobile Mini's exclusive battery powered Burgalarm is specifically designed to add an extra level of security to your storage or office unit where electrical power is not readily available. The Burgalarm is equiped with a siren, strobe light, 2-6 volt batteries and dual vibration sensors. The system does not require 110 volt electricity and is designed to use very little standby power from it's battery supply. Ask for detailed brochure.

mobile mini®
STORAGE SYSTEMS
CAL PUC #T-162042 UCC #MC216878



BOLT LOCK SYSTEM...
Our exclusive burglar resistant "bolt lock" system is designed to give you that extra edge of security not available on other products. The "bolt lock" system is a substantial improvement over simple lock box type designs and utilizes the patented German discus lock. Unlike standard padlocks, the discus lock shank will not rotate or spread even if hole is drilled.

RAMP...
Even through our storage unit sits directly on the ground, it is sometimes inconvenient to maneuver hand carts in and out of storage unit. This portable ramp is designed specifically for this situation. Each ramp is coated with a non-slip surface to provide adequate traction while using ramp. They are also painted a bright orange to prevent them from being misplaced.



MAGNET LIGHTS...
These lights are built to magnetically stick to any steel surface. You can use them either inside the storage unit or outside. They come complete with an on-off switch and a 110 volt standard pig tail. Simply set the light on the storage unit, attach an extension cord, and flip the switch-- You have 300 watts of quartz halogen light just where you need it.

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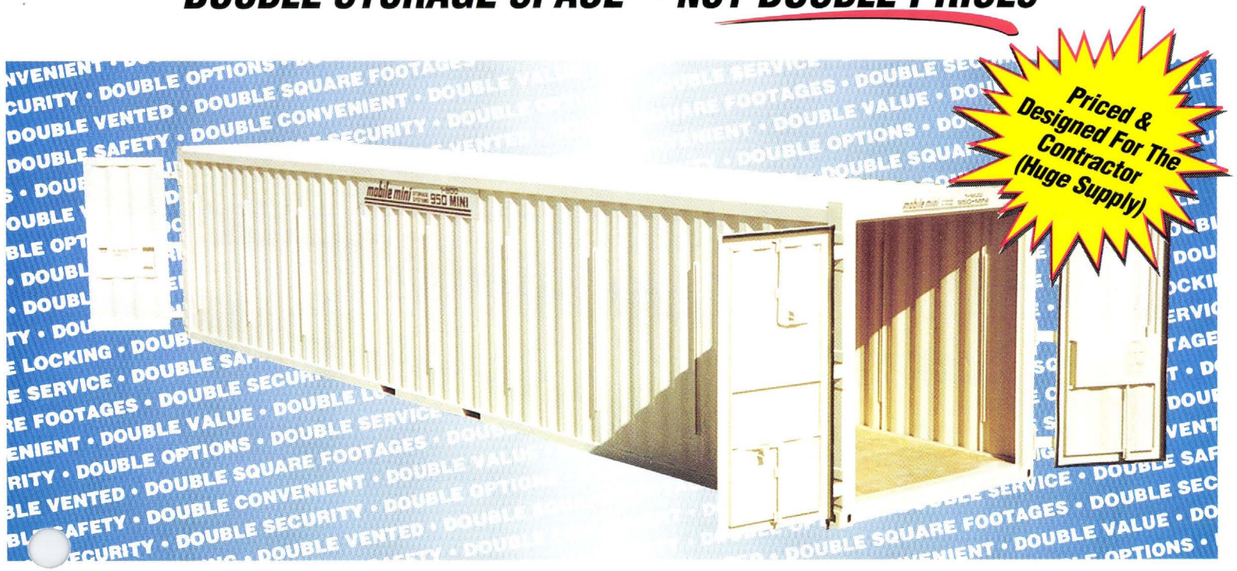
mobile mini® STORAGE SYSTEMS

BULK RATE
U.S. POSTAGE
PAID
PERMIT NO. 1281
Santa Ana, C

mobile mini®

NEW PRODUCT-LOWER PRICES!

DOUBLE STORAGE SPACE- - NOT DOUBLE PRICES

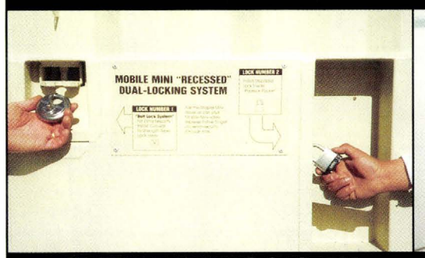


Priced & Designed For The Contractor (Huge Supply)

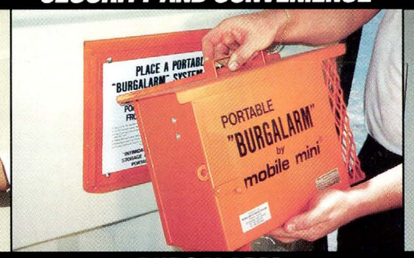
THE "DOUBLE DOOR SERIES"- STORAGE UNITS WITH DOUBLE DOORS ON BOTH ENDS

We have just received over 1,000 ground mounted 40' long storage containers for our rental fleet. These containers are modified with double doors on both ends to allow complete utilization of storage space and convenient access. For maximum security each door is equipped with our patented double secure locking system. Other sizes include 10' and 20' long units. CALL US TODAY FOR OUR LOW PRICES - - WE DOUBLE DARE YOU!

SECURITY AND CONVENIENCE



DOUBLE LOCKING SYSTEM



BURGALARM

MAGNET LIGHT

Mobile Mini offers many options for our storage customers. These options include custom height, width and length containers, shelving, ramps, magnet lights, burgalarms, doors, windows, offices, forklift pockets, and much more. We'll even paint to your colors.

FOR SALE OR RENT

mobile mini® STORAGE SYSTEMS

Los Angeles and Surrounding Counties	1-800-950-6464
San Diego and Surrounding Counties	1-800-283-6464
Phoenix and Northern Arizona	1-800-950-3131
Tucson and Southern Arizona	1-800-456-4641

STORAGE UNITS!

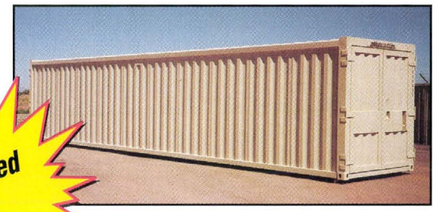
RESIDENTIAL **COMMERCIAL** **CONTRACTORS**

RENT, BUY OR LEASE

(LEASE-PURCHASING AND FINANCING AVAILABLE)

- 8' wide, 8'6" high, 5'-40' in length.
- Store at your location or at our high security storage facility.
- Heavy duty all steel design
- Delivered flat on the ground for your safe and convenient access.
- Saves loading and unloading time compared with van trailers.
- Reduces accidents related to loading and unloading.
- Painted with a light beige "earthtone" for appearance.
- High strength swingout doors offer recessed concealed lever-lock for burglar frustration and at the same time, ease of opening.
- Our exclusive "Bolt-Lock" System is designed to give you that extra edge of security not available on other products.
- Rental units come standard with forklift pockets and vents.

New or Used Units Available



8' x 40'

8' x 20'

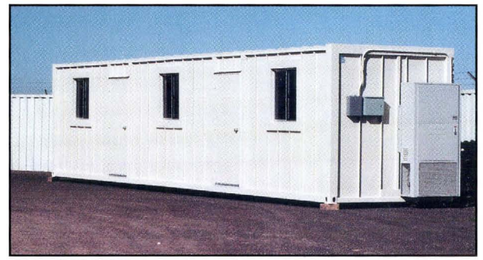
8' x 5' or 8' x 10'

CONTAINERS ON WHEELS ALSO AVAILABLE!

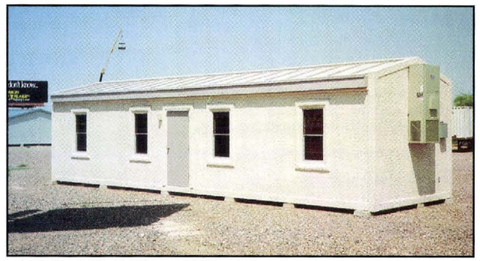
CUSTOM UNITS!

PORTABLE OFFICES AVAILABLE

Any custom size, width, length or design

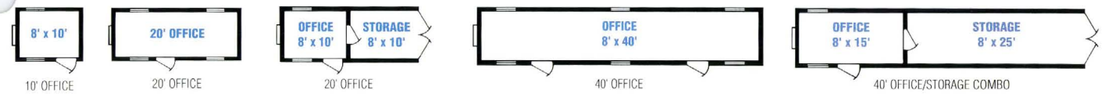


8' x 40' Office



12' X 40' Office With Stucco

- OFFICE UNITS - Offices feature doors, windows, lighting, outlets, phone jacks, air conditioning, tile flooring, drywall and insulated walls and ceiling.
- COMBINATION UNITS - Office space at one end and large storage or shop space with double swingout doors at the other end. Electrical outlets available in storage area.
- SECURITY - All steel heavy duty design, security bars on windows and Mobile Mini's exclusive "Bolt Lock System" on all doors.
- CONVENIENCE - Units sit directly on the ground for easy access making wheels, steps, skirting and tie downs not necessary.



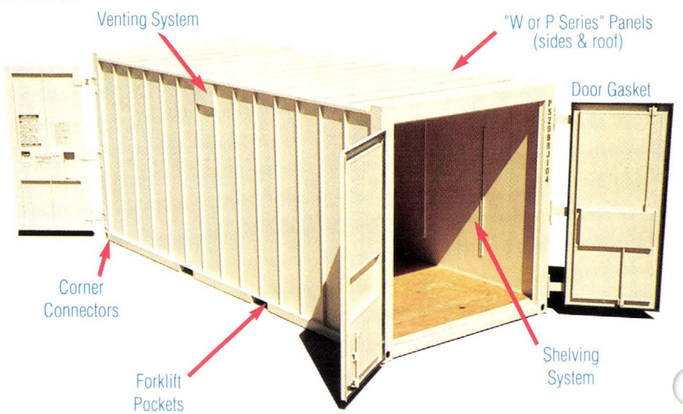
CUSTOM CONFIGURATIONS

(AND OPTIONS)

Optional lease or sale modifications offered include...

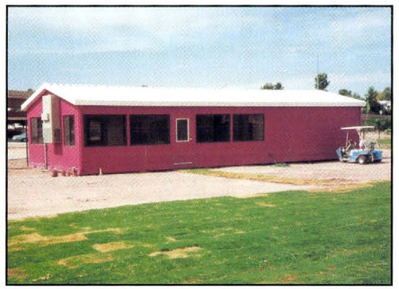
- Custom colors
- Forklift pockets.
- Vents or wind turbines.
- Upgraded flooring.
- Undercoating.
- Shelving.
- Windows and partitions.
- Stacking blocks and lifting connectors.
- Doors-swingout or rollup, side or end mounted.
- Electrical-outlets, lights, A/C, etc.

Doors on <u>both</u> ends



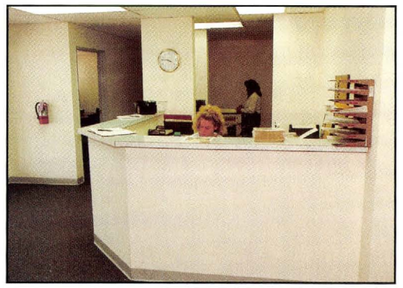
MOBILE MINI'S "ADVANTAGE" MODULARS

You can now gain the"ADVANTAGE" of all steel construction for the price of wood.



Golf Club House

School Classroom



Interior Buildout

The "ADVANTAGE" modulars are a fully modular concept that allow for easy sizing from 5' to 67' in length and 8' to 20' in width. Units can be combined in width or h[illegible] to create a multi-wide or extra high units. We construct modular buildings using high strength rigid steel framing with wood or steel siding.

The "ADVANTAGE" modulars have many benefits over the conventional all wood construction. These benefits include: 1) <u>All steel framing which resists twisting</u> and damage during delivery and relocation; 2) <u>Steel or wood siding</u> - you choose the outside finish; 3) <u>Ground mounted</u> installation eliminates costly stairs, skirting, ramps and tie downs and reduces expensive injury liability; 4) <u>Fire damage</u> is greatly reduced creating a possible savings on insurance; 5) <u>Security</u> is a cinch with MOBILE MINI 'S construction, bars on windows and "bolt locks" on doors; 6) <u>Maintenance</u> is reduced with plexiglass windows and recessed lighting. The options are unlimited!

mobile mini® STORAGE SYSTEMS

Los Angeles and Surrounding Counties	***1-800-950-6464***
San Diego and Surrounding Counties	***1-800-283-6464***
Phoenix and Northern Arizona	***1-800-950-3131***
Tucson and Southern Arizona	***1-800-456-4641***

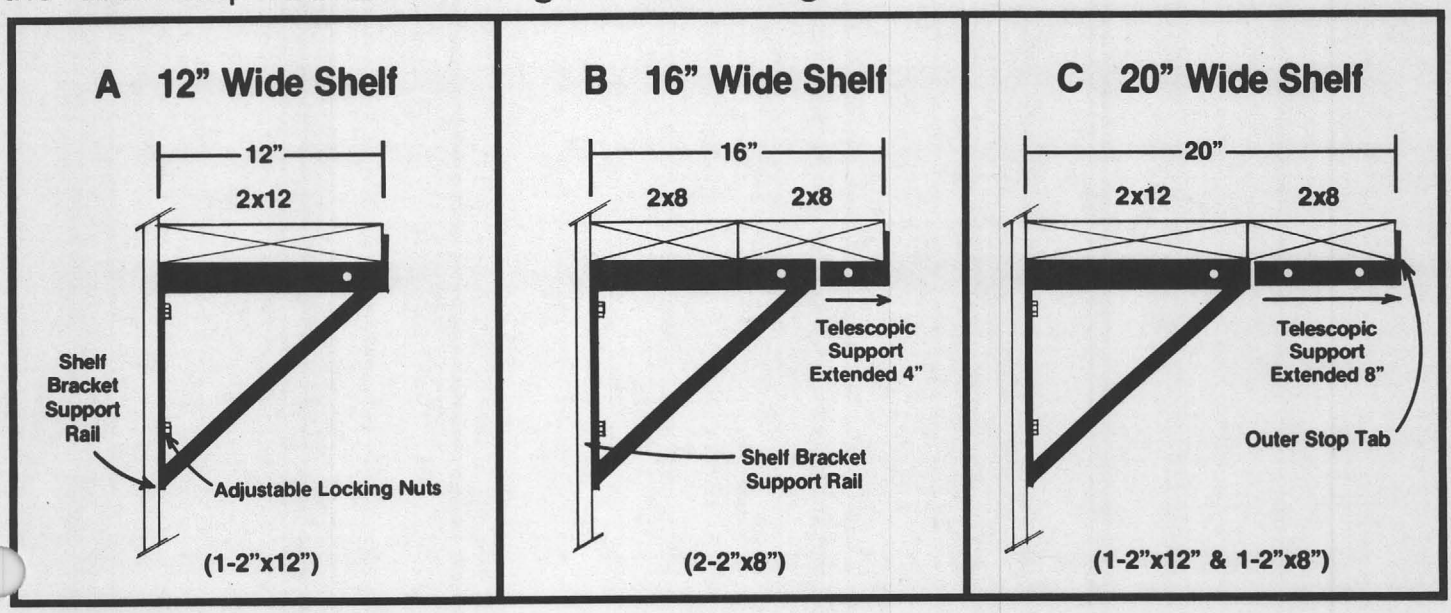
mobile mini® STORAGE SYSTEMS

"SHELVING SYSTEM"

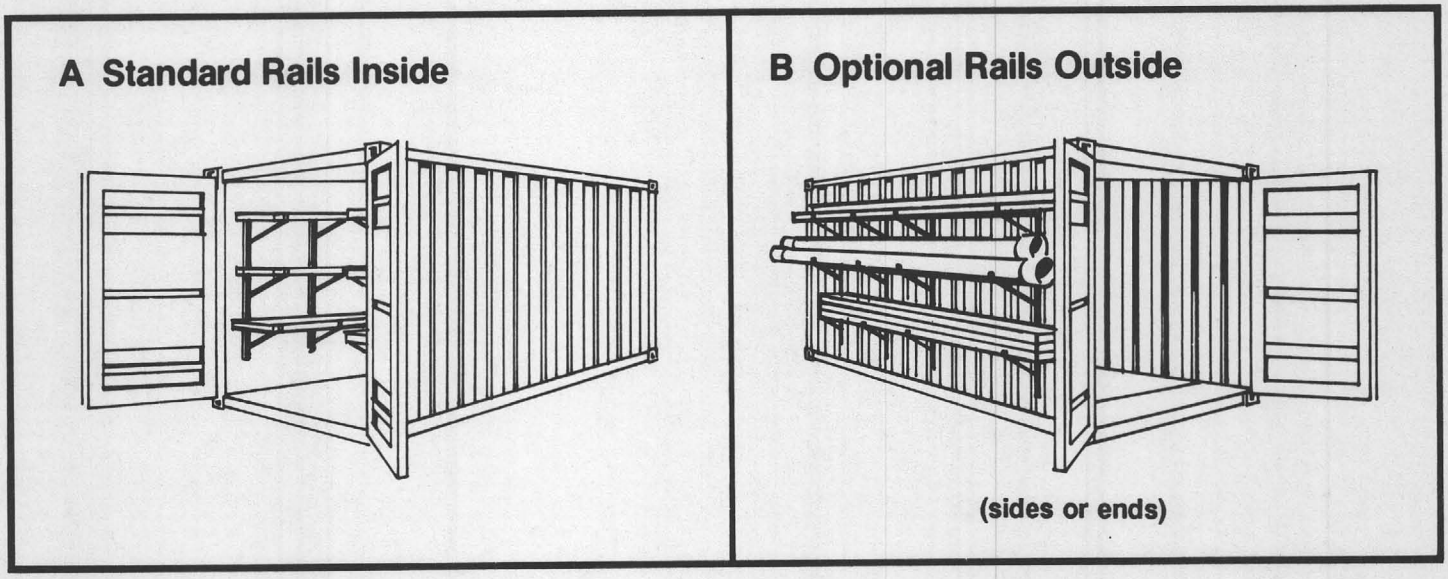
(All Patent and Other Proprietary Rights Reserved)

SHELVING LUMBER & BRACKETS FOR LEASE OR SALE

1. Telescoping Shelf Brackets - Each bracket can be adjusted to extend to fit 12", 16" or 20" wide shelves. (500 lbs. capacity each). For heavy-duty applications, use the "outer Stop Tab" for attaching vertical bracing.



2. Adjustable Shelving Rails - Vertical shelving rails allow you to customize your storage space . (For normal to light duty applications, place rails 2'-6" from ends, a maximum of 5' apart and 12" off floor.)



3. Call your Mobile Mini Storage Systems' representative now to have your "Shelving System" installed at your location.

4. WARNING - To prevent failure or slippage, all "adjustable locking nuts" must be securely tight. Shelving system is designed for 500 pound load capacity per bracket assuming 2" thick lumber shelving and brackets at 12" wide settings.

© COPYRIGHT 1990 BY MOBILE MINI STORAGE SYSTEM, 021390 REORDER FROM: 4010 SALES

NOW AVAILABLE!

CUSTOM CONTAINERS

DIRECT FROM THE MANUFACTURER

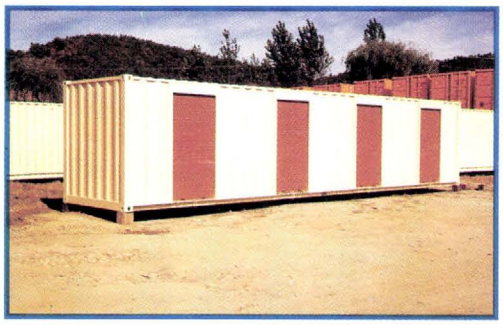
Standard containers are 8' wide, 8'6" high and 8'-40' long but can be built higher, lower, wider, narrower or longer. All containers can be equipped with personnel doors, rollup doors, custom colors, forklift pockets, insulation, shelving, undercoating, windows, partitions, air conditioning, lighting, outlets, carpet, tile, plumbing and much more!

MODULAR WORKSHOP...
16' x 40' with gable sloping roof.

CANAL CONTROL CENTER...
8' X 20' W/ 1/4" Armor plating, standby generator, ventilation, air conditioning and computer system. Operates canal flow control systems in the event of a power loss.

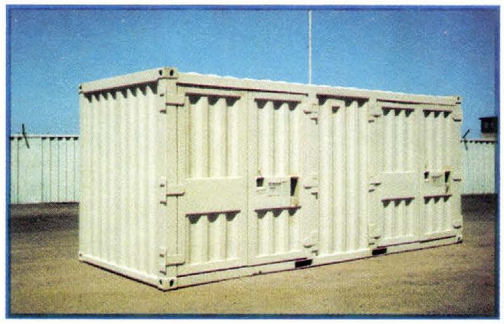
COMMUNICATION BUILDING...
8' X 20' cellular communication building with solar panels delivered by helicopter.

MINI STORAGE..
8' X 40' with 4-3' rollup doors and partition between doors for use as rental space.



WORKSHOP...
2-8' x 20' storage container with doors and center shade system.

STORAGE UNIT...
Built for the US Army for storage of equipment brought back from Desert Storm. 8' x 20' w/ side swingout doors, forklift pockets, vents, top corner connectors and upgraded flooring.



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Phoenix and Northern Arizona	1-602-437-0786
Tucson and Southern Arizona	1-602-884-8600

Buy or Lease
Financing
Available!

Copywrite Mobile Mini Storage Systems. All patent and propriotory rights reserved. Form CCDLRCA060191

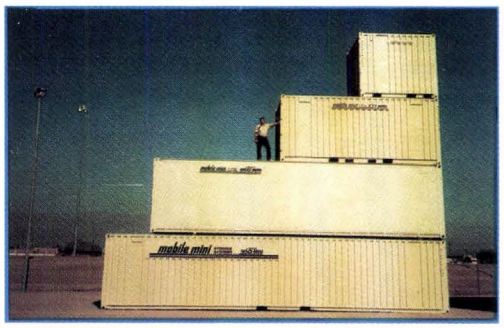
NOW AVAILABLE!

CUSTOM CONTAINERS

DIRECT FROM THE MANUFACTURER

Call us now and let Mobile Mini Storage Systems design a custom container configured to your exact requirements or specifications. Our design team can design a simple storage container or a large modular building complete with air conditioning, interior buildout and restrooms.

WE'LL CUSTOM BUILD TO ANY SIZE, WIDTH OR LENGTH!



STANDARD STORAGE UNITS...

8' x 10', 8' x 20', 8' x 35' & 8' x 40'

DISPATCH OFFICE...

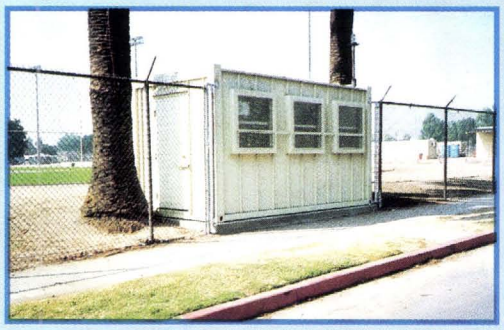
Two 8' x 40' units to form 16' x 40' office with standing seam roof facia, trim and interior buildout.

EQUIPMENT CONTAINERS...

12' W x 10'H x 10'L container used by the US Coast Guard to store equipment on ships to clean up oil spills.

TICKET BOOTH...

8' X 15' with 3 ticket windows and side access door.

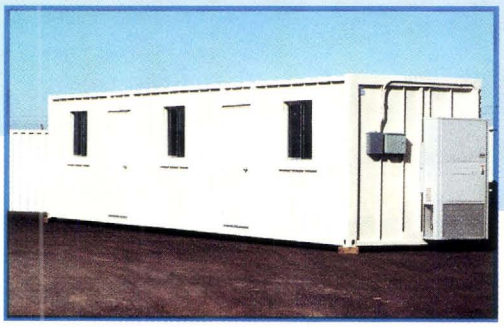


AIR VAC UNIT...

Custom built for the US Army for use in Desert Storm. Units housed air filtrator system to clean tank air filters. Designed for air cargo shipments in C5A aircraft.

PORTABLE OFFICE...

8' x 40' with doors, windows, electric, carpet and a vertical wall mounted heat pump.



mobile mini® STORAGE SYSTEMS

Los Angeles and Southern California	1-800-950-6464
Phoenix and Northern Arizona	1-602-437-0786
Tucson and Southern Arizona	1-602-884-8600

MEMO

TO: James A. Briscoe
FROM: Thomas E. Waldrip, Jr.
DATE: January 31, 1994

RE: Cost estimate and improvements - Mobile Mini storage containers

Jim,

According to conversations I had with Lisa of Mobile Mini Tucson (884-8600), the following is being relayed to you for your information and distribution to clients, as you wish.

1. Unit construction: Aluminum, size 8'(w) x 40'(l) x 9/5'(h) — with the greater height it will hold more.
   Cost: $3,500
   Supply: Limited (2 in stock), with additional units available occasionally. Previously in stock early September, 1993

2. Unit construction: Steel, size 8'x 8'x 40'
   Cost: $3,400
   Supply: In stock at all times.

Additional improvements can be made by Mobile Mini with cost estimates being (only round numbers) for items indicated below:

1. 1" floor to ceiling, 2' x 40' angle iron shelving supports (ballpark) welding and materials) - $600. We may be able to cut some cost if we can get it done in Tombstone.
2. 3/4" plywood shelving - 3 per side, full length, 2' wide, estimated 15 sheets at $20/sheet, including cutting charges - $300.
3. Interior/exterior (7-year life exterior) painting at $300 per area.
4. Mobile Mini or subcontractors can build roofs, fences, gates, etc. between units. No estimate is given as it is difficult to make with the limited information - see attached drawing for modular type construction, for which the basic unit module can be expanded with two additional units. I expect we would go with steel supports and aluminum or tin roofing, which should cost in the range of $5 to $7 per square foot, constructed $5 to $7 thousand per 24' x 40' enclosure (this is a ball-park estimate only).

Delivery charges of one unit to Tombstone will be $100. Additional units at Tombstone can be moved at $35 per hour. It would be best to assume at least one hour per unit to load, move and re-set up, but his will depend on the condition of the unit. Units should be empty of samples. It may take up to 2 hours to move units stored at the Escapule's.

Right now I believe three parties have core or drill samples at Tombstone. Two currently have storage units. Additionally, we have our office. In total, Santa Fe has 3 units with non-TDC core. TDC has two (core from Santa Fe drilling), Excellon has rotary drill samples from USMX drilling,

JABA, Inc.

received 2/8/94
REVIEWED J.A.B.

JABA INC.
2100 N. Wilmot Rd. #218
Tucson, AZ 85712
(602) 885-9141
(FAX) 721-2768

James A. Briscoe
5610 E. Sutler Lane
Tucson, AZ 85712
(602) 721-1375
Fax (602) 298-6688 (*2 after second ring)

Fax Cover Sheet

DATE 3/13/94 THIS IS PAGE 1 OF 4 SENDER Jim Briscoe

TO Jerry Neidfelt COMPANY TDC

FAX # LOCATION (City/State) Grand Island NB

COMMENTS Please review this carefully. I concur with Tom's conclusions. Further, as I pointed out in my previous letter to you, there is danger of infestation of the building by africanized honey bees ("Killer Bees"). The proximity to the adjacent department complex poses a definite hazard, to both the residents and thru possible resulting litigation - to TDC. The hanta virus is also a definite potential danger.

However the directions from the ADEQ are unclear - they have said on one hand that problems of this sort need to be eleminated - but Don Bell told me recently that chemicals properly stored did not have to be removed

JAB

CONFIDENTIALITY CAUTION
This message is intended only for the use of the individual or entity to which it is addressed and may contain information that is privileged and confidential. If the reader of this message is not the intended recipient, or the employee or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and return the original message to us at the above address at our cost.

FAXED 3/13/94 Sunday 1:15 PM

AREA 20

Location: Empire Mine core storage building.

General work: Check with Gary first. Test all chemicals; remove useful chemicals and store at assay building; stockpile non-useful chemicals for proper disposal. Clean up trash. Review with Jim or Tom the samples stored in building - check first on whether to save or dispose of these samples. If samples are saved, we need to re-organize, label, box and store them.

Items to remain: For the time being, the building core racks and core, samples, sample splits and possibly other useful items to be reviewed by Jim or Tom.

Salvageable materials: After checking with Gary, most of the chemicals may be useable.

Scrap metal: None noted.

Other saleable material:

Non-useable items: See attached Memo.

Estimated time for job: Depending on the state of clean up, between 20 and 100 man hours. 20 hours to clean up and organize building; 100 total hours to remove core, samples, etc. and restore and then tear down building and dispose of it.

MEMO

TO: James A. Briscoe
FROM: Thomas E. Waldrip, Jr.
DATE: February 14, 1994

RE: Core storage building, Empire Mine area, Tombstone Mining District, Cochise County, Arizona; JABA project #101-01

Jim,

Pursuant to my trip to Tombstone on January 25, 1994, I was finally able to get inside the Empire Mine storage building. Jesse and I cut the lock and put a new standard lock on it. As I have previously described to you, other than the core, the building contents are in a massive pile, including TEI sample pulps, TMR coarse drill cuttings, and what appears to be '71 Minerals chemicals near the bottom.

In a quick review of the building contents, I noted most of the chemicals were in 50 to 100 lb. sacks and up to 50 gal. barrels, scattered around. It appears the contents have accumulated in a stratigraphic sequence with the oldest at the bottom to the newest at the top, corresponding to each operation that has been conducted on the property, the core being the oldest, circa 1954 (Newmont underground drilling), with latest being numerous boxes of TEI pulp assay samples.

Due to my brief time in the building, I cannot give a full accounting of what is in it nor the usefulness of items, but in general terms, the following is what I believe should be done.

First, from rat droppings, the building appears to be rodent infested. Extreme care needs to be taken to see that workers are protected from any potential harm to their health. Secondly, the amount of chemicals creates another health hazard. Those accessible need to be immediate characterized, cleaned up, and either properly stored or stockpiled for disposal, out of the building area. Once the building is stabilized, as far as the rodent and chemical hazards are concerned, a more complete inventory of geological sample content can be made.

Initial review suggests there are at least three distinct sets of samples that are contained in the building. One set is core samples against the east wall of the building. The samples are well organized, but apparently lacking any labeling or blocks to indicate hole # and footage intervals. If this information cannot be determined, these diamond core samples are essentially useless. A more careful examination will need to be made to ascertain the existence or non-existence of labeling. If labels are found, I believe the core should be removed to a more secure spot, i.e., Mobile Mini.

The second set of samples is from TMR's drilling, circa mid-1970's. These samples are contained in 1/2 gallon plastic pail containers which appear to have pretty much deteriorated to the point where a few containers appear to remain whole on the surface. Instead, there is a pile of drill cuttings. Underneath the outer layer of debris, containers may remain in good shape. If this is the case, these samples may be capable of being saved. However, they will have to be carefully handled as the plastic

containers are very brittle. Ultimately, an evaluation will have to be made to ascertain if these samples are even worthwhile saving or not. Other major drawbacks of these samples are also evident. Many of the samples are from shallow holes, drilled in currently unknown locations. Given the current informational base available to me and apparent condition of samples, I believe we may want to just dispose of the samples on the dump.

The third set of samples (I checked only 2 boxes) is an unorganized set of approximately 100 storage boxes stacked 3 to 4 high in the remainder of the building. The boxes are about 2.5 cubic feet in size (18" x 16" x 14") rough estimate). Most are crushed by the weight of overlying boxes, until there is remaining about a 3' high mass of box debris. Inside these boxes are what appear to be relatively intact pulp sample bags with pulped samples. A review needs to be made to ascertain if there is enough information on the bags, boxes, etc. to piece back the sample information to a coordinate field position where the sample was collected. If the information is insufficient to do this, these samples are probably useless and should be taken to the dump. On the other hand, if the samples are properly labeled, I would suggest that they be organized for valuable information as to where ore zones were located during previous mining activities on the property and additional information. Additionally, even if the samples are only identified with a sample number, we may eventually be able to piece assay information back to it. The samples can always be disposed of later if need be.

My initial thoughts are that any samples which appear to be of some future use should be at a minimum re-boxed, carefully labeled, and then ideally stored in a Mobile Mini storage unit. At this time, I don't even have a guesstimate of how much labor or expense will be involved in the project, but obvious indications are that it will be no less than a major undertaking. It must be kept in mind, however, that per the ADEQ, we have to characterize and properly store and/or dispose of what chemicals are located on the property. Additionally, remaining buildings need to be rodent proofed. Since this building lies within meters of occupied homes, I do not feel we have much latitude as far as cleaning up the mess goes. Being that the chemicals are on the bottom of the heap, we have to move the samples anyway. Since it will be difficult at best to rodent proof the building, I think we need to carefully evaluate the samples as to their future usefulness. We should only move them once, either to the dump or rodent proof quarters, i.e., a Mobile Mini storage unit.

Once the building is cleaned out, I believe a careful evaluation needs to be made to ascertain its continued existence. Needed repairs are obvious. The building is not secure with only a wooden plank door. In my estimation, the building is a potential arson target, which threatens surrounding occupied properties. Furthermore, there is an obvious rodent problem. Access to the area is basically unrestricted, and as pointed out above, is very near occupied homes. Additionally, from a purely aesthetic point of view, the area is an eye sore. If the past is prologue to the future, as long as the building remains, it will continue to be a convenient catch all storage structure to whom ever is on the property. I therefore question if the building is not a liability to TDC. I feel it is and would strongly recommend that the building be demolished and the remains transported to the dump after all useful samples are removed.

Tom
TEW/msb

MAR

TIMES FOR BURNING

All permitted Open Burning shall be conducted during the following time periods:

APRIL through SEPTEMBER . . . . . 9 a.m. to 4 p.m.

OCTOBER and MARCH . . . . . 9 a.m. to 3 p.m.

NOVEMBER through FEBRUARY . . . . . 10 a.m. to 2 p.m.

3/2/94
This is the burn permit Steve Henderson & Gary Harrison got for the TDC dump.
It was burned last saturday. 2/26/94
This must be included in the ADEQ report.

City of Tombstone

P.O. BOX 339
TOMBSTONE, ARIZONA 85638

(602) 4
(602) 4

FAX COVER SHEET

FAX NUMBER: 1 700 - 207-~~2322~~ 2366 DATE: 2-17-94

TO: AZ DEPARTMENT OF ENVIRONMENTAL QUALITY

ATTN: SUZANNE MCDONALD / OFFICE OF AIR QUALITY PERMITS & COMPLIANCE

SUBJECT: OPEN BURNING PERMIT APPLICATION

SENDER: STEVE HENDERSON, PUBLIC WORKS DIRECTOR

NUMBER OF PAGES: COVERSHEET plus 2 = 3 PAGES

STATE OF ARIZONA
Open Burning Permit Application
(Please Type or Print Legibly)

* Burning Location - County of Cochise, State of Arizona
* Legal Description or Address T-20-S
R-22-E
SEC - 11 S E 1/4 (24C)

Material to be burned:

* Type Weed & Tumbleweeds
* Quantity of fuel about 8 1/2 feet high and 30' long

Material to be [✓] Piled [ ] Collected in a pit [ ] Placed in an approved waste burner
[✓] Ignited in place using high temperature mechanical burners

* Anticipated duration (per burn) 5 To 6 hours
* Anticipated requirement (i.e., 30 days, 60 days, etc.)
* Purpose of burning (weed abatement or fire prevention) both. weed abatement and Fire Training for Fire dept.

Fire controls available Fire dept plus Heavy Equipment Bulldozer

Nearest local fire department Tombstone Vol. Fire Dept.

Phone # 457-2202

Proximity of nearby residences/businesses:

* Distance in miles or fraction of miles 300 YRDS

(attach map or drawing)

* Applicant Name TOMBSTONE FIRE DEPT
* Mail Address P.O. BOX 339
* City, State, ZIP TOMBSTONE AZ. 85638
* Phone # 602 457 2202

Signature of Applicant

Additional Information Tombstone Vol Fire Dept would like to burn 2-19-94

Mail to: Division of Air Quality, Permits Unit
2033 North Central Avenue

BURN PILE
APPROX 300 YDS
H2O TANK
HOUSE
HOUSE

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
OPEN BURNING PERMIT

Permission to burn weeds/brush only for weed abatement and/or fire prevention.

At T-20-S, R-22-E, SEC-11, SE 1/4, Cochise County, Arizona

To Tombstone Fire Department Tel. No. 602-457-2202

Address P. O. Box 339 City Tombstone, Arizona 85638

is granted by the Director of the Arizona Department of Environmental Quality subject to the following conditions:

1. This permit is valid until August 31, 1994

2. Burning shall be conducted between _____ A.M. and _____ P.M. (See attached schedule)

3. Material to be burned shall be readily combustible and piled [X] collected in a pit [ ] placed in an approved waste burner [ ] ignited in place using high temperature mechanical burners on ditch banks and/or fence rows [X] in such quantities that it will be completely consumed within the permitted burn hours.

4. Piled or pit contained material shall be no less than 50 feet from any structure. Burner contained material shall be no less than 15 feet from any structure.

5. Open burning of the following materials is forbidden: garbage, asphalt shingles, tar paper, plastic and rubber products (such as tires and electrical wire insulation), waste petroleum products (such as waste crankcase oil, transmission oil and oil filters), hazardous material containers including those that contained inorganic pesticides, lead, cadmium, mercury, or arsenic compounds.

6. No fire shall be ignited when any air stagnation advisory is in effect in the area of the burn, or during periods when smoke can be expected to accumulate to the extent that it will significantly impair visibility. Such visibility impairment can be anticipated during periods of heavy regional haze and/or calm wind conditions.

7. The local fire fighting agency shall be notified prior to the setting of the fire. Such agency may prohibit open burning when atmospheric conditions or local circumstances make such fires hazardous.

8. Burning shall be conducted only during wind conditions which prevent dispersion of smoke into populated areas, visibility impairment on travelled roads or airports to the extent that a safety hazard results, or otherwise create a public nuisance, and do not cause uncontrollable spreading of the fire.

9. Fires shall be attended at all times and the person attending the fire shall have available the necessary equipment (water supply, water hose, shovel, sand, etc.) to control the burning and to put out the fire if the need arises. Fires must be completely extinguished before leaving unattended.

10. This permit shall not be construed to relieve the permittee from liability from resulting damages or the obligation to comply with other applicable laws, regulations, or ordinances.

11. Person(s) conducting open burning authorized by this permit shall have a copy of the permit on-site during permitted open burning operations.

12. Open burning in a solid or hazardous waste landfill or their associated collection points is prohibited.

Permit Engineer

Suzanne McDonald — Title

DATE: February 18, 1994

ADEQ/Air Quality - 054A (12/93)

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

INVOICE
NET 15 DAYS

Job No. TFO 077
March 4, 1994
AMMONIUM HYDROXIDE
HNO3 DRUMS

JABA, INC.
Attn: Mr. James Briscoe
5610 E. Sutler Lane
Tucson, AZ 85712

FAX TRANSMITTAL
# of Pages 3
TO: Jerry Niedfelt
CO: TDC
DATE: 3/21/94
FAX #
COMMENTS
FROM: J.A. BRISCOE
JABA, INC.
PHONE: (602) 721-1375
FAX # (602) 298-6688 *2

Analysis of 2 Solution Samples

2 As(mg/L)	@ $6.30	$12.60
2 Cd(mg/L)	@ $3.45*	$6.90
2 Hg(mg/L)	@ $7.95	$15.90
2 Se(mg/L)	@ $6.30	$12.60
2 Zn(mg/L)	@ $3.45*	$6.90
2 Ba(mg/L)	@ $6.30	$12.60
2 Cr(mg/L)	@ $6.30	$12.60
2 Ni(mg/L)	@ $6.30	$12.60
2 Sb(mg/L)	@ $6.30	$12.60
2 Ag(mg/L)	@ $6.30	$12.60
2 Be(mg/L)	@ $6.30	$12.60
2 Cu(mg/L)	@ $3.45*	$6.90
2 Pb(mg/L)	@ $3.45*	$6.90
2 Tl(mg/L)	@ $6.30	$12.60
	Totals	$156.90

* Multi Element Discount

received 3/10/94

REVIEWED J.A.B.

COPY

OK for payment directly to vendor
This is for 2 composite assays on 6 green barrels (100 gal. plastic) of unknown liquid. We'll have to re-sample each of the 3 HNO_3 barrels

J H Briscoe

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

INVOICE
NET 15 DAYS

Job No. TFO 077
March 4, 1994
AMMONIUM HYDROXIDE
HNO3 DRUMS

JABA, INC.
Attn: Mr. James Briscoe
5610 E. Sutler Lane
Tucson, AZ 85712

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	Totals	$156.90

* Multi Element Discount

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703

JOB NUMBER TFO 077
March 4, 1994
AMMONIUM HYDROXIDE
HNO3 DRUMS

JABA, INC.
Attn: Mr. James Briscoe
5610 E. Sutler Lane
Tucson, AZ 85712

REPORT OF ANALYSIS

Analysis of 2 Solution Samples

ITEM	SAMPLE NO.	As (mg/L)	Cd (mg/L)	Hg (mg/L)	Se (mg/L)	Zn (mg/L)	Ba (mg/L)	Cr (mg/L)
1	AMMONIUM HYDROXIDE	< .1	< .05	< .05	< .05	.2	< .1	.2
2	HNO3 DRUMS	< .1	< .05	< .05	< .05	16.0	1.1	34.0

ITEM	SAMPLE NO.	Ni (mg/L)	Sb (mg/L)	Ag (mg/L)	Be (mg/L)	Cu (mg/L)	Pb (mg/L)	Tl (mg/L)
1	AMMONIUM HYDROXIDE	.2	< .1	< .01	< .05	.4	.2	< .01
2	HNO3 DRUMS	6.7	< .1	< .01	< .05	40.0	26.0	< .01

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703

JOB NUMBER TFO 077
March 4, 1994
AMMONIUM HYDROXIDE
HNO3 DRUMS

JABA, INC.
Attn: Mr. James Briscoe
5610 E. Sutler Lane
Tucson, AZ 85712

REPORT OF ANALYSIS

Analysis of 2 Solution Samples

ITEM	SAMPLE NO.	As (mg/L)	Cd (mg/L)	Hg (mg/L)	Se (mg/L)	Zn (mg/L)	Ba (mg/L)	Cr (mg/L)
1	AMMONIUM HYDROXIDE	< .1	< .05	< .05	< .05	.2	< .1	.2
2	HNO3 DRUMS	< .1	< .05	< .05	< .05	16.0	1.1	34.0

ITEM	SAMPLE NO.	Ni (mg/L)	Sb (mg/L)	Ag (mg/L)	Be (mg/L)	Cu (mg/L)	Pb (mg/L)	Tl (mg/L)
1	AMMONIUM HYDROXIDE	.2	< .1	< .01	< .05	.4	.2	< .01
2	HNO3 DRUMS	6.7	< .1	< .01	< .05	40.0	26.0	< .01

REGISTERED ASSAYER CERTIFICATE NO. 9425 WILLIAM L. LEHMBECK

William L. Lehmbeck
Manager

FILE TDC file

MEMO

TO: James A. Briscoe
FROM: Thomas E. Waldrip, Jr.
DATE: February 8, 1994

RE: Ground cover plastic, Mobile Mini area or for contaminated soil

Jim,

This morning I got a hold of Tim at Cadillac Plastic, 4205 S. Santa Rita Avenue (Park & Ajo), telephone 741-1900, who can get both 6 mil and 10 mil clear plastic for use at the following costs

Size	Thickness	Cost/ Roll	Total Cost w/Tax
20'x100'	6 mil	$41.38	$44.28
24'x100'	6 mil	$49.85	$53.34
20'x100'	10 mil	$80.77	$86.42

While the above is for clear plastic, black plastic will be needed if used for above-ground purposes because of added UV resistance. The black plastic may cost a few dollars more per roll, but I was interested only in below ground use until I found out the prices, which are marginally less than what Jesse gets it for (6 mil) at Tombstone ($60.00). The difference (approximately 10%) is hardly worth my time for one roll, that is unless we need several rolls, then it may be.

This type of plastic is not a stock item and will require approximately four working days for shipping. I didn't ask, but we probably can get it shipped directly to Tombstone when and if we need it.

Tom

TEW/msb

REVIEWED J.A.B. 2/17/94

JABA, Inc.

FAX TRANSMITTAL # of Pages 1

TO: J. N. FROM: J.A. BRISCOE

CO: TDC JABA, INC.

DATE: 3/13/94 PHONE: (602) 721-1375

FAX # FAX # (602) 298-6688 #2

COMMENTS

Sierra Vista Herald/Bisbee Review, Thursday, January 27, 1994

Tombstone men plead

[redacted]

3/13/94

GARY A. LINDROOS
P. O. Box 1011
Tombstone, Arizona 85638

March 15, 1994
Mr. James Briscoe
5610 East Sutler Lane
Tucson, Arizona 85712

Client: Tombstone Development Company
P. O. Box 1445
Grand Island, Nebraska 68802

Following are results of sample analysis for pH and free cyanide content of samples located on the TDC property:

Sample Identification	Location	pH	Free CN
201	TEI Preg Pond	6.7	<0.002
202	TEI Preg Pond	6.5	<0.002
203	TEI Preg Pond	6.5	<0.002
204	TEI Preg Pond	6.8	<0.002
205	TEI Preg Pond	6.5	<0.002
206	TEI Preg Pond	6.5	<0.002
207	TEI Preg Pond	6.4	<0.002
208	TEI Preg Pond	6.6	<0.002
209	TEI Preg Pond	6.6	<0.002
210	TEI Preg Pond	6.5	0.006
211	TEI Preg Pond	6.5	<0.002
212	TEI Preg Pond	6.5	<0.002
Lime Mix Tank	Cyanide Mixer Area	10.4	<0.002
CN Mix Tank	Cyanide Mixer Area	11.6	0.110

Respectfully submitted:

Gary A. Lindroos

received 3/17/94

REVIEWED J.A.B.

FAXED 3/17/94

Naomi R. Lindroos
P. O. Box 1011.
Tombstone, Arizona 85638
(602) 456-9160

INVOICE

Invoice Number: 1012
Invoice Date: March 14, 1994

Sold To:

Mr. James Briscoe
5610 East Sutler Lane
Tucson, Arizona 85712

Billed To:

Tombstone Development Company
P. O. Box 1445
Grand Island, Nebraska 68802

Order Number	Consulting Services	Date Completed	Terms
		03/14/94	

Date	Description of Services	Hours	Rate	Amount
03/11/94	Clean Laboratory Glassware, Assist Sampling Trenches	3	7.50	$22.50
03/14/94	Sample Preparation, Analyze Samples for pH and CN	4	7.50	$30.00
[redacted]				
[redacted]				

received 3/17/94
OK for payment
JAB
REVIEWED J.A.B.
FAXED 3/17/94

We appreciate your business!

Total $52.50

Gary A. Lindroos
P. O. Box 1011.
Tombstone, Arizona 85638
(602) 456-9160

INVOICE

Invoice Number: 1011
Invoice Date: March 14, 1994

Sold To:

Mr. James Briscoe
5610 East Sutler Lane
Tucson, Arizona 85712

Billed To: (If other than Sold To:)

Tombstone Development Company
P. O. Box 1445
Grand Island, Nebraska 68802

Order Number	Consulting Services	Date Completed	Terms
		03/14/94	

Date	Description of Services	Hours	Rate	Amount
03/06/94	Clean CN Drums, Move Drums from Lab Area	3	35.00	$105.00
03/11/94	Sample Trenches in old TEI Pond	3	35.00	$105.00
03/12/94	Clean CN Drums, stored in compound	3.5	35.00	$122.50
03/14/94	Sample Trenches in old TEI Pond Analyzed for CN	4	35.00	$140.00

received 3/17/94
OK for payment JRB

REVIEWED J.A.B.

FAXED 3/17/94

We appreciate your business!

Total $472.50

10U

JABA INC.
2100 N. Wilmot Rd. #218
Tucson, AZ 85712
(602) 885-9141
(FAX) 721-2768

March 20, 1994

Mr. Jerry Niedfelt
President
Tombstone Development Company Inc.
P.O. Box 1445
Grand Island, NB USA 68802

Dear Jerry:

Re: Criminal Trespass Laws on Trespass into mining opening as those owned by Tombstone Development Co., in tombstone AZ.

Transmitted with this faxed letter are copies of laws pertaining to trespass that appears to occur regularly on your land at Tombstone. Tom Waldrip got this data together as the local marshall's office appears uncertain as to what to do when trespassers are caught.

I would recommend that as part of their duties, Steve Henderson and Jesse Grassman inspect all the fenced mine openings regularly and replace the "No Trespass" signs. I also recommend that either someone from our office or yours talk with the marshall and personally supply him with copies of these laws (the appended papers). It will also be necessary to express a willingness to prosecute any trespassers to the extent of the law.

Please let me know if you would like us to proceed on this.

Very truly yours,

James A. Briscoe

JN 03/20/94

cc: Douglas Mackenzie, Excellon

FAXED 3/21/94 3:00 PM

NOTICE! WARNING!

DANGERS IN AND AROUND INACTIVE MINES

ABANDONED MINES ARE DANGEROUS

If you walk, ride a motorcycle, ATC or 4-wheeler in mined out areas, you will be exposed to some or all of the hazardous conditions listed below.

OPEN MINE SHAFTS

Old mine shafts are usually partly filled with water and may be several hundred feet deep. A fall into an abandoned shaft is almost always fatal.

SUBSIDENCE

This danger is caused by the removal of dirt by underground mines causing cave-ins to the surface. This dangerous condition can occur at any time without warning. These subsidence conditions can be very deep and may not happen until years after the material has been mined.

ABANDONED TUNNELS

These tunnels may not have enough oxygen to support life and may also contain poisonous and explosive gasses. In addition, poisonous snakes are likely to live in abandoned mines.

ABANDONED OPEN PITS

Many old open pits in the state of Arizona were left with no protection around them. There have been times when persons have drowned in water accumulations, fallen to their death from the top of the pit or been struck by rock when playing or exploring the pits.

STAY ALIVE
STAY AWAY FROM OLD MINING SITES

Do not attempt an underground rescue. Rescue operations are difficult and dangerous!

RESCUE PROBLEMS

Rescuing a person from a mine accident is usually difficult and dangerous for both the rescued and the rescuer. A rescuer must avoid dislodging any timber or rock that might fall on the victim — and this is an almost impossible job.

One of the cardinal rules in mine rescue is to avoid all unnecessary risk. It makes no sense to kill one man to rescue another, particularly when there is a good chance that the person to be rescued is already dead. Death or injury faces any professional rescue team that takes chances and these teams are trained to know the odds. Anyone, adults as well as children, should consider this when tempted to enter inactive mines.

STAY OUT

ARIZONA LAW:

§ 13-1502. Criminal trespass in the third degree; classification

A. A person commits criminal trespass in the third degree by:

1. Knowingly entering or remaining unlawfully on any real property after a reasonable request to leave by the owner or any other person having lawful control over such property, or reasonable notice prohibiting entry.

§ 13-1504. Criminal trespass in the first degree; classification

A. A person commits criminal trespass in the first degree by knowingly:

3. Entering unlawfully on real property subject to a valid mineral claim or lease with the intent to hold, work, take or explore for minerals on such claim or lease.

§ 27-318. Abandoned and inactive mines to be secured; inspector authority; violation; classification

D. A person who knowingly and without authority removes, destroys or tampers with any warning sign, covering, fencing or other protection placed on, around or over any shaft, portal or other excavation is guilty of a class 6 felony.

PLEASE! DO NOT REMOVE

FREE COPIES OF THE ABOVE WARNING MAY BE OBTAINED FOR POSTING
OR DISTRIBUTION BY WRITING TO:

JAMES H. McCUTCHAN, C.P.M.
STATE MINE INSPECTOR
1616 W. ADAMS, SUITE 411, PHOENIX, AZ 85007-2627

1989

Laws 1962, Ch. 71, § 1.
Laws 1970, Ch. 178, § 1.
Laws 1975, Ch. 75, § 1.
Laws 1976, Ch. 157, § 1.

The 1981 amendment inserted "or on" preceding and "in any" following "any nonresidential structure or" in subsec. A.

Former § 13–1503, relating to the place of trial generally, was repealed by Laws 1977, Ch. 142, § 34.

For disposition of the subject matter of sections of the former Criminal Code, see Disposition Table at the front of this volume.

Cross References

Aggravated criminal damage, see § 13–1604.
Domestic violence,
Definition, see § 13–3601.
Protection order, see § 13–3602.
See, also, Cross References following § 13–1502.

Library References

Trespass ⇐76 to 81.
WESTLAW Topic No. 386.
C.J.S. Trespass §§ 140 to 153.

Notes of Decisions

Included offenses 2
Structure 1

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1. Structure

Salvation Army collection box, which had sides and a floor, was a "structure" within meaning of this section providing that a person commits burglary in third degree by entering or remaining unlawfully in nonresidential structure with intent to commit any theft therein. State v. Mann (App.1981) 129 Ariz. 24, 628 P.2d 61.

2. Included offenses

Failure to instruct jury that second-degree criminal trespass was a lesser-included offense of burglary in the third degree was proper where charging document did not describe the lesser offense of criminal trespass since it did not specifically include the element of "knowingly" entering or remaining unlawfully. State v. Kozan (App.1985) 146 Ariz. 427, 706 P.2d 753.

Criminal trespass is not necessarily a lesser included offense of burglary, and thus, trial court did not err in prosecution for burglary in third degree in failing to give jury instruction on criminal trespass in that in order to convict a defendant of criminal trespass in second degree, prosecution must prove not only that defendant knowingly, voluntarily, entered or remained, but it must also prove that defendant was aware that his entry or remaining was unlawful. State v. Malloy (1981) 131 Ariz. 125, 639 P.2d 315.

§ 13–1504. Criminal trespass in the first degree; classification

A. A person commits criminal trespass in the first degree by knowingly:

1. Entering or remaining unlawfully in or on a residential structure or in a fenced residential yard; or

2. Entering any residential yard and, without lawful authority, looking into the residential structure thereon in reckless disregard of infringing on the inhabitant's right of privacy.

3. Entering unlawfully on real property subject to a valid mineral claim or lease with the intent to hold, work, take or explore for minerals on such claim or lease.

4. Entering or remaining unlawfully on the property of another and burning, defacing, mutilating or otherwise desecrating a religious symbol or

other religious property of another without the express permission of the owner of the property.

B. Criminal trespass in the first degree is a class 6 felony if it is committed by entering or remaining unlawfully in or on a residential structure or committed pursuant to subsection A, paragraph 4. Criminal trespass in the first degree is a class 1 misdemeanor if it is committed by entering or remaining unlawfully in a fenced residential yard or committed pursuant to subsection A, paragraph 2 or 3.

Added by Laws 1977, Ch. 142, § 69, eff. Oct. 1, 1978. Amended by Laws 1978, Ch. 201, § 139, eff. Oct. 1, 1978; Laws 1981, Ch. 191, § 2; Laws 1982, Ch. 279, § 2.

Historical Note

Source:

Pen.Code 1901, §§ 393, 541.
Pen.Code 1913, §§ 433, 611.
Rev.Code 1928, §§ 4727, 4833.
Code 1939, §§ 43-5801, 43-5806.
A.R.S. former §§ 13-711, 13-712.
Laws 1962, Ch. 71, § 1.
Laws 1970, Ch. 178, § 1.
Laws 1975, Ch. 75, § 1.
Laws 1976, Ch. 157, § 1.

The 1978 amendment substituted "in reckless disregard of infringing" for "with the intent to infringe" in par. 2 of subsec. A, and made criminal trespass in the first degree a "class 1" rather than a "class 2" misdemeanor in the second sentence of subsec. B.

The 1981 amendment added subsec. A, par. 3 (now subsec. A, par. 4) and reference thereto in subsec. B, and in subsec. B inserted "or on" preceding "a residential structure".

The 1982 amendment inserted new subsec. A, par. 3, renumbered former subsec. A, par. 3, added in 1981, as subsec. A, par. 4, and inserted reference thereto in subsec. B.

Former § 13-1504, relating to the place of trial where a person commits an offense in another county, was repealed by Laws 1977, Ch. 142, § 34.

Cross References

Aggravated criminal damages, see § 13-1604.
Domestic violence,
Definition, see § 13-3601.
Protection order, see § 13-3602.
Mineral claim, unlawful entry, injunction, see § 12-1807.
See, also, Cross References following § 13-1502.

Library References

Trespass ⟹77.
WESTLAW Topic No. 386.
C.J.S. Trespass § 144 et seq.

Notes of Decisions

Elements of offense 2
Instructions 3
Validity 1

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1. Validity

"Peeping tom" statute, A.R.S. § 13-1504, subd. A, par. 2, incorporating recklessness standard of A.R.S. 13-105, subd. 5, is not unconstitutionally vague. State v. Serrano (App. 1985) 145 Ariz. 498, 702 P.2d 1343.

2. Elements of offense

In prosecutions under "peeping tom" statute, A.R.S. § 13-1504, subd. A, par. 2, State must prove that under all circumstances and evidence the risk of infringement on inhabitant's right of privacy is so great that disregard of risk is a gross deviation from standard of conduct of reasonable person in that situation, and that defendant was actually aware of risk of infringement on inhabitant's privacy. State v. Serrano (App.1985) 145 Ariz. 498, 702 P.2d 1343.

3. Instructions

Trial court properly refused to give instruction on criminal trespass in the first degree as

a lesser-included offense of burglary in the first degree, since criminal trespass is not necessarily a lesser-included offense of burglary, and description of the burglary charge in the indictment did not describe the lesser offense of criminal trespass, first degree, in that it did not specifically include the element of knowingly entering or remaining unlawfully. State v. Ennis (App.1984) 142 Ariz. 311, 689 P.2d 570.

Trespass instruction was not warranted in second-degree burglary prosecution, despite defendant's contention that he was helping a friend whom he believed had purchased appliances which defendant and his friend were removing from a home after his friend kicked in the doors to the home. State v. Thompson (App.1983) 139 Ariz. 133, 677 P.2d 296.

Defendant was not entitled to jury instruction on criminal trespass as a lesser included offense of burglary since criminal trespass was not lesser included offense of burglary in the second degree and evidence did not support instruction for criminal trespass. State v. Mitchell (App.1983) 138 Ariz. 478, 675 P.2d 738.

§ 13-1505. Possession of burglary tools; classification

A. A person commits possession of burglary tools by possessing any explosive, tool, instrument or other article adapted or commonly used for committing any form of burglary as defined in §§ 13-1506, 13-1507 and 13-1508 and intending to use or permit the use of such an item in the commission of a burglary.

B. Possession of burglary tools is a class 6 felony.

Added by Laws 1977, Ch. 142, § 69, eff. Oct. 1, 1978.

Historical Note

Source:

Pen.Code 1901, §§ 424, 425.
Pen.Code 1913, §§ 464, 465.
Rev.Code 1928, §§ 4746a, 4748, 4749.
Laws 1931, Ch. 37, § 1.
Code 1939, §§ 43-902, 43-904, 43-905.
A.R.S. former §§ 13-304, 13-1001.

Former § 13-1505, relating to the place of trial where a person in one county aids in an offense committed in another county, was repealed by Laws 1977, Ch. 142, § 34.

For disposition of the subject matter of sections of the former Criminal Code, see Disposition Table at the front of this volume.

Cross References

Misconduct involving explosives, see § 13-3103.
Theft, see § 13-1802.

Library References

Burglary ⇐12.
WESTLAW Topic No. 67.
C.J.S. Burglary §§ 43 to 48.

Notes of Decisions

Burglary tools 2
Evidence 3
Sentence and punishment 4
Validity of prior law 1

---

1. Validity of prior law

Section 13-303 (repealed; see, now, this section) providing that person who, with felonious intent, entered building or other structure, and by use of any mechanical device or contrivance whatsoever, opened or attempted to open a vault, safe or other secure place designed for safekeeping of money or other valuable property, was guilty of burglary be means of mechanical devices was not unconstitutional as vague. State v. Smith (1968) 103 Ariz. 490, 446 P.2d 4.

Section 13-303 (see, now, this section) proscribing burglary committed by use of any mechanical device or contrivance whatsoever sufficiently apprised defendant of the acts proscribed by its terms and was, therefore, consti-

1993-4

Historical and Statutory Notes

The 1993 amendment, in the definition of "enter or remain unlawfully", inserted the exception relating to entry to commit theft during normal business hours.

Laws 1993, Ch. 255, § 101, provides:

"Sec. 101. **Legislative intent**

"It is the intent of the legislature that the provisions of this act relating to parole, work furlough, home arrest, earned release credits and other early release programs have only prospective effect. For any person convicted for an offense committed before the effective date of this act the provisions of this act shall have no effect and such person shall be eligible for and may participate in such programs as though this act has not passed."

Notes of Decisions

Residential 7

1. Entry

Although person enters another's premises lawfully and with consent, presence can become unauthorized, unlicensed, or unprivileged if that person remains there with intent to commit felony. State v. Altamirano (App.1990) 166 Ariz. 432, 803 P.2d 425, review denied.

6. Burglary

Defendant could not burglarize his residence and, therefore, could not be convicted of attempted, second-degree burglary of his residence; defendant had absolute right to remain there at all times, and formation of intent to commit alleged sexual abuse in residence did not suddenly strip him of his possessory rights and make his presence on premises unauthorized, unlicensed, or unprivileged. State v. Altamirano (App.1990) 166 Ariz. 432, 803 P.2d 425, review denied.

7. Residential

Evidence established that apartments were intended for residential use, so as to sustain conviction for residential burglary for stealing gas wall heaters from apartments; apartment owner testified that one of ten units was rented out on date of burglary and others were being remodeled, apartment manager testified that even though no tenants were living in apartments, they were suitable for renting at time of burglary, and neighbor testified that one apartment had been rented until a month previous to defendant's arrest. State v. Engram (App.1991) 171 Ariz. 363, 831 P.2d 362.

§ 13–1503. Criminal trespass in the second degree; classification

Notes of Decisions

1. Structure

Restrictions placed on those under home arrest pursuant to home arrest program are much greater than those placed on people who are on parole and, unlike a home arrestee, a parolee is not on inmate status; therefore, home arrestees are not in essence "parolees not within control of a correctional facility" for purposes of offense of escape in second degree by reason that Board of Pardons and Paroles has duty of placement and supervision, although statutory section which defines correctional facility provides that parolees are not within control of correctional facility. Cienfuegos v. Superior Court In and For County of Maricopa (App. 1992) 172 Ariz. 461, 837 P.2d 1196, review denied.

§ 13–1504. Criminal trespass in the first degree; classification

Notes of Decisions

Included offenses 4

4. Included offenses

As matter of law, defendant cannot be convicted of both second-degree burglary and first-degree criminal trespass, given that criminal trespass is lesser included offense of second-degree burglary. State v. Engram (App.1991) 171 Ariz. 363, 831 P.2d 362.

Verdict that defendant was guilty of both second-degree burglary and first-degree criminal trespass, which is lesser included offense of burglary, did not entitle defendant to new trial or to have trespass conviction substituted for burglary conviction, where trial court treated trespass verdict as surplusage and entered judgment against defendant only for burglary verdict, and defendant made no objection to handling matter in this way. State v. Engram (App.1991) 171 Ariz. 363, 831 P.2d 362.

§ 13–1506. Burglary

Validity ½

½. Validity

Prohibition against third-c
section is not unconstitution
remaining" is such common
definition is necessary, and c
give jury instruction definin
or otherwise privileged." S
1989) 161 Ariz. 133, 776 P.2
corpus affirmed 953 F.2d 13

12. Defenses, in general

Jury was adequately ins
fense of duress was raised
proving beyond reasonable
did not act under duress in

§ 13–1507. Burglary

Attempt 14
Included offenses 16
Intent 15

2. Nature and elements c

Evidence established tha
tended for residential use, s
tion for residential burglar
heaters from apartments;
fied that one of ten units wa
burglary and others were b
ment manager testified tha
ants were living in apartme
for renting at time of burgla
fied that one apartment ha
month previous to defend
Engram (App.1991) 171 A

3. Indictment or informa

Nonresidential burglary
offense of residential burgl
(App.1991) 171 Ariz. 363, 8

9. Sufficiency of evidenc

Evidence established tha
burglary and theft; althou
fingerprints at scene of cri
premises and at that time
apartment to remove items
State v. Engram (App.1991)
362.

Evidence supported defe
tion despite his contention
home by breaking window
shot at by unknown perso
know that mobile home w
Belyeu (App.1990) 164 Ar

Historical and Statutory Notes

The 1978 amendment, in the last sentence, inserted "recklessly", and substituted "petty offense" for "misdemeanor".

For application of Laws 1978, Ch. 201, effective October 1, 1978, see note following § 1-215.

Cross References

Classification of offenses, see § 13-601 et seq.
Offenses, culpable mental state, see § 13-105.
Restitution and fines, see § 13-801 et seq.

§ 27-318. Abandoned and inactive mines to be secured; inspector authority; violation; classification

A. Every mine operator or former mine operator or claimant who owns a mine or mining claim or possesses a mine or mining claim under lease, contract, permit or otherwise, who knowingly permits the existence on the premises of an abandoned or inactive mining shaft, portal, pit or other excavation which is dangerous to persons legally on the premises, who fails to cover, fence, fill or otherwise secure it and post warning signs, within sixty days of notification by the inspector and who fails to keep it so protected is guilty of a class 2 misdemeanor. If it is impossible or impracticable to comply with this subsection within the required sixty days, the operator may submit a written plan of action to the inspector which specifically outlines the measures that will be taken and the number of additional days necessary to comply with this section. In no case may the time extension granted by the inspector exceed an additional one hundred eighty days.

B. The inspector may enter on such land to inspect for dangerous conditions which may present a health and safety hazard to the public. If hazards exist, the inspector may erect warning signs across or near the entrance of any mine shaft, portal, pit or other mine opening prohibiting the entry of unauthorized persons or erect other protective devices as necessary.

C. If the mine operator cannot be located through reasonable efforts, the owner of record is the responsible party for the purposes of this section. If neither the mine operator or owner of record can be located through reasonable efforts, the inspector shall erect warning signs across or near the entrance of any mine shaft, portal, pit or other mine opening prohibiting entry of unauthorized persons or erect other protective devices as necessary.

D. A person who knowingly and without authority removes, destroys or tampers with any warning sign, covering, fencing or other protection placed on, around or over any shaft, portal or other excavation is guilty of a class 6 felony.

Added by Laws 1987, Ch. 302, § 6.

Historical and Statutory Notes

Source:
A.R.S. former § 27-318.
Laws 1968, Ch. 111, § 10.
Laws 1978, Ch. 201, § 447.

Former § 27-318, added by Laws 1968, Ch. 111, § 10, amended by Laws 1978, Ch. 201, § 447, and relating to the same subject matter

FILE Proj. File

JABA INC.
2100 N. Wilmot Rd. #218
Tucson, AZ 85712
(602) 885-9141
(FAX) 721-2768

FAX TRANSMITTAL # of Pages 10

TO: FROM: J.A. BRISCOE
CO: JABA, INC.
DATE: 3/30/94 PHONE: (602) 721-1375
FAX # (308) 382-7482 FAX # (602) 298-6688 *2
COMMENTS

March 29, 1994

Mr. Jerry Niedfelt
President
Tombstone Development Company Inc.
P.O. Box 1445
Grand Island, NB USA 68802

Dear Mr. Niedfelt:

Re: APP application fee from TDC and financial documentation.

In order that we may complete the application for the APP for Closure, TDC will have to pay a fee to the AZ Dept. of Environmental Quality. I am attaching the fee documents for your examination. As I read them, the fee to TDC will be $7,500 but it could include a fee for the land fill which would raise it to $10,000. Lets assume the lesser until we are told differently. **Would you please send me a check payable to the State of Arizona in the amount of $7,500.** I will submit it along with my application for the APP for Closure.

In addition, there is a requirement for financial data from TDC. This is to assure the ADEQ & the State that TDC has the financial capability to continue to monitor the Contention site. These financial data include; a statement from the companies chief financial officer of their capability to meet the costs of maintenance (as yet undetermined), net worth, names and dates of birth of the firms executive officers, etc. I am including with this FAX page 10 & 11 of the application showing these required data.

I hope to be meeting with the ADEQ in Tombstone in 3 weeks, but haven't arranged it yet.

I will send the other application sheets along by mail for your interest. I think you will see the detail of maps and data they require for the Closure Permit. There is still quite a bit of work for me ahead. However we are coming close on the maps.

Jesse is done until we can get the ok for closure of the dump. Scrap metal is still being collected, but should be done by the end of this week. Gianetto's boys are slowly working on cutting up his equipment, but at the rate they're going it may be 3

FAXED 3/30/94 6:45AM

James A. Briscoe, Registered Professional Geologist, Arizona #9424,. California #518

months until they're done. Hopefully we can get the permit before they're done. We will be moving the Mobile Minis off of the State of Maine and the runway to a position near the front gate. Mike Escapule will be putting in shelving for samples and repairing the rotted boards on the Mobile Mini that was at the State of Maine. I will get you his cost proposal for this work as soon as I get it. Excellon will rebox the rotary cuttings as part of their exploration program.

I will be out of town from 03/30 to 04/05/94.

Very truly yours;

James A. Briscoe

w/attachments
JN03/29/94

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Very truly yours;

James A. Briscoe

w/attachments
JN03/29/94

R18-9-123. Aquifer Protection Permit Application Fees

A. With each application for an individual Aquifer Protection Permit under R18-9-107, the applicant shall remit an initial fee according to the following schedule, except as otherwise provided in subsections H, I and J. The fee shall be payable to the State of Arizona, and shall be deposited in the state general fund, or if otherwise required by law, in the Water Quality Assurance Fund, or a fund established specifically for aquifer protection permit fees.

Categories	Initial Fee (In U.S. dollars)	Maximum Fee
Wastewater Treatment Plants		
On-Site Sewage Disposal Systems (less than 20,000 gpd)	51550	3450
Wastewater Treatment Plants Where Influent is Predominantly Sewage		
Lined Surface Impoundment (Evapotranspiration)	3300	6500
Discharge to Water of the U.S.	4800	7950
Subsurface Discharge	4150	7950
Landfills		
Municipal solid waste	4500	15750
? Construction Debris	2850	6950
Other	5100	14600
Mines		
✓ Tailings Piles or Ponds	7150	15400
Base Metal Leaching Operations with Chemical Process	4600	10550
Precious Metals Processing	4150	10200
In-Situ Leaching	8950	14600
Other	5900	14400
Drywells	1350	4250
Industrial Wastewater Discharges		
Surface Impoundment	3650	9900
Discharge to Water of U.S.	5050	9700
Subsurface Discharge	4600	10250
Other Discharging Facilities	4850	15900

B. If the actual cost of processing the application identified in subsection A or J is less than the initial fee paid, the difference between the actual cost and the amount listed and paid shall be returned to the applicant with a final itemized bill within 30 days of the issuance or denial of the permit. If the actual cost of processing the application is greater than the corresponding amount listed, the department shall send the applicant a final itemized bill for the difference between the initial fee paid and the actual cost of processing the application, except that the final bill shall not exceed the applicable maximum fee in subsection A or J. Such difference shall be paid in full before issuance of the permit.

C. The Department shall keep a record of the costs associated with denied applications. If there is an amount not covered by the initial fee and that is not paid, the Department shall add the product of the unpaid hours multiplied by the hourly rate in subsection G at the time of denial to the initial fee of a permit applied for under R18-9-107 by the same entity at a later date.

D. When determining actual cost under subsection B, the Department shall use a flat hourly rate for all direct labor hours spent working on the permit. The hourly rate shall be based on an annual sum of the following aquifer protection permit program related costs divided by the direct labor hours allocated for aquifer protection permit processing for the same year:

1. Salary and personnel benefit costs of aquifer protection permit program employees directly involved in processing permits.

2. Salary and personnel benefit costs of aquifer protection permit program employees indirectly involved in processing permits, such as supervisory and clerical personnel.
3. Department overhead and other operating expenses attributable to all aquifer protection permit program employees.
4. Per diem expenses.
5. Transportation costs.
6. Reproduction costs.
7. Laboratory analysis charges.
8. Public notice advertising and mailing costs.
9. Presiding officer expenses.
10. Court reporter expenses.
11. Facility rentals.
12. Other reasonable, direct, permit-related expenses documented in writing by the Department.

E. Direct labor hours spent working on the permit shall consist of time spent by aquifer protection permit program technical staff or consultants on tasks specifically related to the processing, issuance, or denial of a particular permit, including time at a facility inspecting the facility, time at a public hearing, or time at a preapplication conference held pursuant to R18-9-107.D.

F. Direct labor hours shall not include any of the following:
1. training.
2. travel to or from any facility or permit hearing.
3. time by clerical or supervisory staff, unless the supervisory staff is filling in for a particular technical staff member in that person's absence.

G. From the effective date of this subsection, the flat hourly rate shall be $31.84 per hour. The Director shall annually publish the fee schedules under subsections A and J and the flat hourly rate under this subsection which will be applicable for the following 12 months. The fee schedules and hourly rate shall be based on the Department's costs for the previous full fiscal year.

H. For individual Aquifer Protection Permits which are consolidated pursuant to R18-9-122, and unless the applicant qualifies for the fee provision described in subsection I, the applicant shall remit an initial fee which equals the sum of the greatest initial fee among the facilities, and the initial fee applicable to each additional facility reduced by 40%. The maximum fee to the applicant for consolidated permits shall be equal to the greatest maximum fee among the facilities, plus the maximum fee applicable to each additional facility reduced by 40%.

I. For purposes of subsection A, an applicant applying for individual permits for two or more facilities of the same category of facilities that, in addition, are engaged in similar operations, and have discharges of similar chemical characteristics, and are geographically contiguous, is required to remit only the initial fee, and shall be charged no more than the maximum fee, applicable to a single such facility.

J. With an application that is a request for modification to an individual Aquifer Protection Permit or for a transfer of an individual Aquifer Protection Permit, the applicant shall remit an initial fee in the same manner as described in subsection A, and according to the following schedule:

> I appears to apply to TDL. & then a fee of $7,150 per Category Mines, - Tailings Piles or Ponds.
Not clear if we have to also file under Category - Landfills, Construction Debris - $2,850, so so the total could be $7,150 + $2,850 = $10,000

Effective April 12, 1992.

Categories	Initial Fee (In U.S. dollars)	Maximum Fee
Permit modification as described in R18-9-121.C(1) or (2) or that results from a major modification to a facility as described in A.R.S. § 49-201.18	1000	(Same as that allowed under subsection A)
Permit modification that is described as a minor modification under R18-9-121.D.	0	100
Any other permit modification including those described in R18-9-121.C(3) or (4)	300	1000
Permit transfer	300	500

K. This rule is effective April 12, 1992. Persons who have submitted complete applications for permits, modifications or transfers before the effective date of this rule shall be required to remit only the permit application fee that was in effect when the application was submitted. Persons who have submitted applications before the effective date of this rule that are incomplete as of the effective date of this rule shall be subject to an initial fee equal to the permit fee for the appropriate category at the time of submission. The final itemized bill for an application that is incomplete on the effective date of this rule shall include only direct labor hours incurred after the effective date of this rule.

R18-9-123.1 Review of Bill

A. Any person who receives a final bill from the department for the processing, and issuance or denial of a permit under this article may request an informal review of the hours billed and may pay the bill under protest. If the bill is paid under protest, the department shall issue the permit if it would be otherwise issuable after normal payment. The request shall specify the areas of dispute and be made in writing to the assistant director of the department for the office of water quality within 10 working days of the date of receipt of the final bill. Unless the department and applicant agree otherwise, the informal review shall take place within 30 days of the department's receipt of the request. Notice of the time and place of informal review shall be mailed to the requester at least ten working days prior to the informal review. The assistant director shall review whether the time billed is correct and reasonable for the tasks involved. Disposition of the informal review shall be mailed to the requester within ten working days after the informal review.

B. The assistant director's decision after the informal review shall become final unless within thirty days after receipt of the decision the applicant requests a hearing before an administrative law judge appointed by the department of administration. The hearing, and any appeal of the decision, shall be governed by A.R.S. § 49-321. Any final agency decision issued pursuant to this section is subject to judicial review pursuant to title 12, chapter 7, article 6.

Arizona Department of Environmental Quality

AQUIFER PROTECTION PERMIT APPLICATION

PART II - DISCRETIONARY INFORMATION

A. Specific portions of the following information is required upon request of the Department. Please see the application guidance document, or establish what is needed during the pre-application meeting. Requirements vary depending on facility design and specific site characteristics of the location.

1. HYDROLOGIC STUDY

Have you included: maps & report

_____a. A description of the surface and subsurface geology;

_____b. The location of any perennial or ephemeral surface water bodies; Maps

_____c. The characteristics of the Aquifer and Geologic Units with limited permeability, including depth, hydraulic conductivity and transmissivity.

_____d. The rates, volumes and directions of surface water and ground water flow, including hydrographs, if available and Equi-potential maps. Don't have yet

_____e. The location of the 100-year flood plain and an assessment of the 100-year flood surface flow and potential impacts on the facility; maps

_____f. A documentation of the existing quality of the water in the aquifers underlying the site, including, where available, the method of analysis and quality assurance and quality control procedures associated with the documentation; water assay sheets

_____g. A documentation of the extent and degree of any known soil contamination in the vicinity of the facility; maps & sample data

_____h. An assessment of the potential of the discharge to cause the leaching of pollutants from surface soils or vadose materials; No potential

_____i. Any anticipated changes in the water quality expected as a result of the discharge;

_____j. A description of any expected changes in the elevation and flow directions of the groundwater that may be caused by the facility; None

_____k. Map of the facility's discharge impact area; MAPS
No discharge

_____l. The criteria and methodologies used to determine the discharge impact area.

2. PROPOSALS FOR VARIOUS PERMIT CONDITIONS

If requested, have you included detailed proposals for the items indicating how the applicant proposes to satisfy the requirements of A.R.S. 49, Chapter 2, Article 3, and A.C.C. R18-9-101 thru 130.

_____a. Alert Levels

Alert levels may be based upon site-specific conditions described by the applicant or may be based upon a pollutant which indicates the potential appearance of another pollutant or may be prescribed to be measured at the point of release, the point of compliance or any intervening point;

_____b. Discharge Limitations

Discharge limitations should be based upon the considerations described in ARS 49-243 A, B, C, D;

_____c. Monitoring Plan

1) The type and method(s) of monitoring to be conducted; Monitor wells every 12 months - in January

2) The frequency of monitoring; ↗

3) The analytical techniques or methods used to perform the sampling or analysis;

4) Any requirements for the installation, use or maintenance of monitoring equipments, and reporting intervals and monitoring records as prescribed by the department.

_____d. Contingency plans for alert level exceedances;

_____e. Contingency plans for discharge limit exceedances;

_____f. Contingency plans for Aquifer Water Quality Standard violations;

_____g. Compliance Schedule;

_____h. Temporary cessation plans;

_____i. Closure and Post-Closure plans.

8. DEMONSTRATION OF FINANCIAL CAPABILITY

Please indicate in the spaces provided that the appropriate attachments or information have been included. Please submit financial information in a form that will easily allow ADEQ to keep such information confidential.

a) Have you included estimates for the total costs of each of the following aspects of the facility?

_____Construction;

_____Operation;

__X__Closure;

__X__Post-closure care;

b) _____Have you attached the required statement from the applicant's chief financial officer that the applicant is financially capable of meeting the costs estimated in sub-section a) above?

c) If the applicant is not a governmental entity, have you included one of the following?

_____The most recent 10K form of the applicant;

_____A report containing <u>all</u> of the following:

___Applicant's organizational structure Corporation

___Description of applicant's business Real Estate Holding Company

___Applicant's net worth, describing major assets and liabilities

___Description of judgments exceeding $100,000.00 against applicant during five years prior to making this application None

___Description of bankruptcy or insolvency proceedings by applicant during five years prior to making this application. None

___Names & dates of birth of executive officers (If applicant is a corporation);

_____Evidence of a bond, insurance, or trust fund.

9. ENFORCEMENT ACTIONS

Provide a brief description of any action for the enforcement of any federal or State law, rule or regulation, or any county, city or local government ordinace relating to the protection of the environment, instituted against the applicant during the five years prior to making this application.

None

10. ZONING

___Indicate that you have included evidence that the facility complies with applicable municipal or county zoning ordinances and regulations.

JABA INC.
2100 N. Wilmot Rd. #218
Tucson, AZ 85712
(602) 885-9141
(FAX) 721-2768

FAX TRANSMITTAL # of Pages 22
TO: Terry Niedfalt FROM: J.A. BRISCOE
CO: TDC JABA, INC.
DATE: 3/30/94 PHONE: (602) 721-1375
FAX # FAX # (602) 298-6688 *2
COMMENTS FYI

March 30, 1994

Mr. Dennis Turner
Manager, Mining APP Unit
AZ Dept. Of Environmental Quality
Water Quality Division
3033 N. Central Avenue
Phoenix, AZ USA 85012

Dear Mr. Turner:

Re: **Request for a an appointment for a preapplication meeting, Ref#: WP-94-1779, Contention Mine, Tombstone Development Co., Tombstone AZ.**

We have been working for several months on generation of data and maps and general housekeeping cleanup at the Contention mine site, Tombstone AZ. I am transmitting with this FAX the AQUIFER PROTECTION PERMITS DETERMINATION OF APPLICABILITY and a partially completed AQUIFER PROTECTION PERMIT APPLICATION, both furnished in Don Bell's letter to me of 3/8/94.

I believe we have most of the supporting documents, maps and crossections either in hand or in preparation and should have them pretty complete by mid April. I would like to see if we can get together for a preapplication meeting at the mine site at that time. I am open for scheduling such a meeting 3/12, 14, or 15 of that week, or am pretty much open the following week.

Of particular importance is advice/ permission on how to close the land fill associated with the mine.

I will be out of my office from noon today until Tuesday April 5. If you could respond by voice mail to (602)721-1375 or fax to my personal machine at (602)298-6688 *2 on second ring, I will place your preferred date on my schedule.

Very truly yours;

James A. Briscoe

James A. Briscoe

w/attachments
DT03/30/94
cc: Don Bell - faxed 3/30/94 9:45 AM

FAXED 3/30/94 9:30 AM

3-31-94
2:10 PM

Jim:

Dennis Turner (ADEQ) called.
Message left was — Your fax
was received, Please give him
a call to setup a meeting,
however, this won't be until
Mid-to-Late April, probably
after the 18th.

RJM.

APR

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
TEL. (602) 622-4836
FAX: (602) 622-6065

STATEMENT

April 1, 1994

JABA, INC.
5610 E. Sutler Lane
Tucson, AZ 85712

Job No.	Date	Inv Amt.	Amt. Pd.	Bal. Due
TFO077	March 4, 1994	156.90		156.90

Received 4/4/94
TDC # 3/28 1218 from TDC

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

JABA INC.
2100 N. Wilmot Rd. #218
Tucson, AZ 85712
(602) 885-9141
(FAX) 721-2768

FAX TRANSMITTAL # of Pages 1
TO: A. Rubalcava FROM: J.A. BRISCOE
CO: AZ AG JABA, INC.
DATE: 4/14/94 PHONE: (602) 721-1375
FAX # (602) 542-4882 FAX # (602) 298-6688 *2
COMMENTS Your Comments?
J A Briscoe

April 14, 1994

Mr. Andrew Rubalcava
Agent
AZ Attorney General's Office
1275 W. Washington
Phoenix, AZ USA 85007

Dear Mr. Rubalcava:

Re: Costs of Wildcat Dump removal at the Contention Construction dump.

We have calculated the cost per dump truck of material removed to be $84.40 per dump truck load including tipping fees at the Tombstone municipal land fill. Ten dump truck loads calculate to $842.40. I calculate conservatively $500 in management fees related to this episode. Further the Arizona Department of Environmental Quality (ADEQ) is assessing Tombstone Development Co., Inc. a fee for supervising closure of the Construction Dump of $2,850. Were the wildcat dump operation not to have taken place, the dump closure would have been grandfathered in with no necessary interaction with the ADEQ on this matter. An unknown amount, probably several thousands to tens of thousands of dollars will now be necessary for TDC Inc. to close the dump.

We see fair and conservative applicable costs to TDC of at least $4,192.40 for disposal of the construction debris.

Very truly yours;

James A. Briscoe, Consultant - Manager for TDC Inc.

AR04/14/94

5 truckloads of time
80 pu loads at
City

½ / pu. for 2

1 mile/pu load. $17.31
+ 1 hr. Rnd trip @ 17.31

3½ p.u. loads / dump truck

$5 / pu load at City dumps.

1,600 2000 / day

17.31 x 2 pu/DT = 34.62 + $10 dump
fee + 17.31 Trip time & truck
fee $62 x $10.00 = $620

+ ADEQ closure fee

17.31 x 3 + 17.31 del. chg

+ $15 dump fees = $842.40

+ Dump fees ADEQ $2,850

+ $500 mgmt overhead.

MAY

JUN

Gary A. Lindroos
119 E. Hwy 82 NBU 22-3
Huachuca City, Arizona 85616
(602) 456-9160

June 13, 1994

Mr. James Briscoe
5610 E. Sutler Lane
Tucson, Arizona 85712

Dear Jim:

On Saturday morning (June 11, 1994) I combined the plastic bags which were in the cyanide drums into six 50 gallon drums. The emptied drums were neutralized with Sodium Hypochlorite and then triple rinsed. The neutralized drums are all stored in the rear of the storage compound.

There are six drums and one wooden crate stored just inside the gate of the compound. These items should be disposed of at an authorized storage facility.

To the best of my knowledge all of the cyanide drums on the property have been neutralized and triple rinsed and most of them stored on the lined pad which was constructed by your personnel. The only drums which need to be moved on to the pad are those which are stored at the rear of the cyanide storage compound near the plant building.

If you have any questions feel free to call me at any time.

Respectfully submitted,

Gary A. Lindroos

JUL

FILE Proj file

AZ BAR # 007514

In The Superior Court Of The State Of Arizona In And For The County Of

COCHISE

THE STATE OF ARIZONA, Plaintiff, vs. D & P CONSTRUCTION CO., INC., ET AL, Defendant,	NO. CR93-09-00394 CRIMINAL SUBPOENA

TO: JIM BRISCOE

YOU ARE HEREBY ORDERED to appear at 2:00 p.m. on the 11th day of July, 1994, at the place of Judge Matthew W. Borowiec's courtroom
Cochise County Superior Court
Cochise County Courthouse
Bisbee, AZ
and to remain there until excused by the Judge conducting the proceeding, to give testimony on behalf of the State of Arizona.

IF YOU FAIL TO APPEAR AS ORDERED, A WARRANT WILL BE ISSUED FOR YOUR ARREST.

Given under my hand and seal this 6th day of July, 1994.

GRANT WOODS
Attorney General

Assistant Attorney General Sheila Sullivan Polk
CRIMINAL DIVISION
1275 W. Washington
Phoenix, Arizona 85007
(602) 542-3881

STATE OF ARIZONA

OFFICE OF THE ATTORNEY GENERAL

GRANT WOODS
ATTORNEY GENERAL

1275 WEST WASHINGTON, PHOENIX 85007-2926

MAIN PHONE : 542-5025
TELECOPIER : 542-4085

TELEFAX COVER SHEET

DATE: July 7, 1994

TIME: 10:00 A.M.

TO: Jim Briscoe

COMPANY: JABA Inc.

TELEFAX NUMBER: (602) 721-2768

NUMBER OF PAGES (including cover sheet): 2

FROM: S/A Andy Rubalcava

DIVISION: SPECIAL INVESTIGATIONS SECTION

TELEFAX NUMBER: (602) 542-4882

TELEPHONE NUMBER: (602) 542-4853

MESSAGES: Please confirm receipt of this subpoena via telephone. Will meet with you @ 1:00 P.M. Monday outside of courtroom to review testimony.

JABA INC.
2100 N. Wilmot Rd. #218
Tucson, AZ 85712
(602) 885-9141
(FAX) 721-2768

4/14
~~July 11~~, 1994

Mr. Andrew Rubalcava
Agent
AZ Attorney General's Office
1275 W. Washington
Phoenix, AZ USA 85007

Dear Mr. Rubalcava:

Re: Costs of Wildcat Dump removal at the Contention Construction dump.

We have calculated the cost per dump truck of material removed to be $84.40 per dump truck load including tipping fees at the Tombstone municipal land fill. Ten dump truck loads calculate to $842.40. I calculate conservatively $500 in management fees related to this episode. Further the Arizona Department of Environmental Quality (ADEQ) is assessing Tombstone Development Co., Inc. a fee for supervising closure of the Construction Dump of $2,850. Were the wildcat dump operation not to have taken place, the dump closure would have been grandfathered in with no necessary interaction with the ADEQ on this matter. An unknown amount, probably several thousands to tens of thousands of dollars will now be necessary for TDC Inc. to close the dump.

We see fair and conservative applicable costs to TDC of at least $4,192.40 for disposal of the construction debris.

Very truly yours;

James A. Briscoe, Consultant - Manager for TDC Inc.

AR04/14/94

SUMMARY JABA INC. BILLING TO AND PAYMENTS FROM TOMBSTONE DEVELOPMENT CO
As of June 30, 1994

Date	Professional Fees	Expenses	Total Billed	Amount Paid/ Credited	Cummulative Balance
3/31/93	$407.50	$168.42	$575.92	$0.00	$575.92
4/13/93	$62.50	$134.57	$197.07	$0.00	$772.99
4/30/93	$2,193.75	$43.12	$2,236.87	$772.99	$2,236.87
5/31/93	$91.88	$57.70	$149.58	$2,236.87	$149.58
6/30/93	$1,822.50	$28.08	$1,850.58	$149.58	$1,850.58
7/31/93	$475.00	$251.58	$726.58	$1,850.58	$726.58
8/30/93	$1,662.50	$348.97	$2,011.47	$726.58	$2,011.47
9/30/93	$1,933.75	$1,310.85	$3,244.60	$2,011.47	$3,244.60
10/31/93	$3,324.25	$4,068.19	$7,392.44	$3,244.60	$7,392.44
11/30/93	$3,918.75	$473.49	$4,392.24	$7,392.44	$4,392.24
12/31/93	$2,640.00	$371.89	$3,011.89	$4,392.24	$3,011.89
1/31/94	$1,943.75	$1,022.82	$2,966.57	$0.00	$5,978.46
2/28/94	$4,182.50	$1,161.24	$5,343.74	$3,011.89	$8,310.31
3/31/94	$4,795.00	$826.42	$5,621.42	$0.00	$13,931.73
4/30/94	$1,265.00	$2,053.79	$3,318.79	$8,310.31	$8,940.21
5/31/94	$287.50	$234.14	$521.64	$0.00	$9,461.85
5/31/94	$1,961.08	$448.30	$2,409.38	$521.64	$11,349.59
TOTAL	$32,967.21	$13,003.57	$45,970.78	$34,621.19	$11,349.59

TOTAL JABA CHARGES	$45,970.78
TOTAL SIERRITA MINING & RANCHING (Bulldozing) CHARGES	$5,197.50 1,080
GRAND TOTAL	$51,168.28

Superior Court of Arizona
Cochise County Adult Probation Department

Mary Lopez

RANDALL C. REYNOLDS
Deputy Adult Probation Officer

Dusty Escapale Prob. Off

P.O. Box AD
Bisbee, AZ 85603

Phone
(602) 432-9313

AUG

FILE TDC.

SIERRITA MINING RANCHING CO.
HC 70 BOX 4260
SAHUARITA, AZ 85629
(602)625-1204

INVOICE 93
DATE 6/23/94

Bill To:
TOMBSTONE DEVELOPMENT COMPANY
ATTN: JEROME NEIDFELT
P.O. BOX 1445
GRAND ISLAND NE 68802
308-382-7480

Ship To:

P.O. # Terms

99

Description	Amount
WORK PERFORMED AT TOMBSTONE SITE AS DIRECTED BY TOM WALDROP	
DOZER 36.5 HRS @ $135.00 /PER HOUR	4,927.50
TRAVEL (PICKUP) 6 DAYS @ $45.00 /PER DAY	270.00

Subtotal 5,197.50

Total $5,197.50

Amount Paid $0
Amount Due $5,197.50

received
8/25/94

REVIEWED J.A.B.

JABA INC.
2100 N. Wilmot Rd. #218
Tucson, AZ 85712
(602) 885-9141
(FAX) 721-2768

FAX TRANSMITTAL # of Pages 1

TO: JN
CO: TDC
DATE:
FAX #
COMMENTS

FROM: J.A. BRISCOE
JABA, INC.
PHONE: (602) 721-1375
FAX # (602) 298-6688 *2

August 5, 1994

Jerome Niedfelt, Prsident
Tombstone Development Company
P. O. Box 1445
Grand Island, NE

RE: Tombstone Project - Federal Mining Claims - Rental Fees, 1994 assessment year; Project #174-01

Dear Mr. Niedfelt:

To keep you informed and abreast of the changes in assessment requirements, pursuant to Public Law 102-381, which established an annual rental fee of $100 for each unpatented federal mining claim located and held under the General Mining Law of 1872, the rental fee being in lieu of performance of annual assessment work, the 1993-94 assessment year rental fees for federal mining claims held by TDC in the Tombstone area are due and payable in the Arizona office of the Bureau of Land Management by the close of business on Wednesday, August 31, 1994. The rental fees due are for the 1995 fiscal year (1995 assessment year) and are in effect a pre-payment to hold the claims from September 1, 1994 to September 1, 1995.

Should the appropriate rental fees not be received by the Arizona State Office of the BLM by close of business on Wednesday, August 31, 1994, the claims will be declared abandoned and void.

Sincerely,

Thomas E. Waldrip Jr.

Thomas E. Waldrip, Jr.

TEW/msb

FAXED 8/8/94 12:20 PM

REVIEWED J.A.B.

SEP

O'CONNOR CAVANAGH

The Law Offices of
O'Connor, Cavanagh, Anderson, Westover, Killingsworth & Beshears
A Professional Association

Volume 1 Number 2 Summer/Fall 1994

Environmental Notes & Comments

Corporate Officers at Risk in Prosecutions

For many years, violations of environmental laws resulted in little governmental action, an administrative reprimand or a consent decree in civil litigation. These responses stemmed from a general lack of public concern regarding relatively minor environmental violations, understaffing in regulatory and investigative agencies, and a lack of interest by government prosecutors. Such indifference has long ended.

With the enactment of new state and federal environmental laws, environmental agencies have received additional staffing. With increased resources, these environmental agencies began to seek criminal penalties for environmental violations. With a "tough on crime" attitude, prosecutors are now pursuing criminal convictions and even prison terms for corporate employees who violate environmental laws. Moreover, responsible corporate officers are now the primary target of prosecutors. Recently, corporate officers have been sent to prison. Prosecutors have used the "Responsible Corporate Officer Doctrine" to hold the higher corporate officers criminally responsible for the acts of their employees.

The possibility of criminal prosecution puts the corporate officer in the difficult position of deciding whether to cooperate with environmental agencies, and hope that any environmental violation will result in a "slap on the wrist," or immediately take precautions to protect against a criminal prosecution. Prompt and forthright cooperation can curry favor with regulators, but also can preclude an effective criminal defense if evidence is produced or admissions are made.

Frequently, an environmental violation comes to the attention of a corporate officer internally, through an employee, or during an inspection by a government inspector. The environmental viola-

CONTENTS

Corporate Officers at Risk in Prosecutions
Page 1

Legislative Changes in Arizona Water Law
Page 2

Pima County Enforcement Response Plan
Page 3

Underground Storage Tank Assurance Fund: Friend or Foe
Page 4

CERCLA: Recovery of Attorney Fees Limited
Page 4

Superfund Reauthorization
Page 5

received 9/22/94

REVIEWED JAB

FAXED 9/22/94 9:20AM TO JNTDC

tion may seem minor, but the complexity of environmental laws may preclude arriving at this quick decision. Although the corporate inclination may be to cooperate with a government inspector, informal cooperation and production of information may not be advisable for a number of reasons. What may appear to the corporate officer to be an isolated incident, may turn out to be one of a series of incidents. Frequently, cooperation with a government inspector initially seems to be the appropriate course, but is later followed by further requests for information and employee interviews by criminal investigators. As the initial innocuous inquiry takes a turn towards a serious problem, the corporate officer learns that what has been said during the investigation cannot be unsaid.

To be more informed, many businesses conduct "internal audits" either by inside or outside counsel. If inside "house counsel" conducts the audit, the information gathered may not be protected by the attorney/client or work product confidentiality privilege. Control over the distribution of audit reports is critical.

The primary concept in dealing with environmental violations is that informally responding to requests for information can make matters worse. Accordingly, the corporate officer must make a judgment in dealing with environmental inspectors to determine whether a subject under inquiry may turn into a criminal prosecution against the officer, the corporation, or both. If a criminal prosecution is even subtly threatened, a corporate officer immediately should obtain the advice of a criminal environmental defense attorney.

Legislative Changes in Arizona Water Law

Senate Bill 1380 amended numerous sections of the Arizona Revised Statutes relating to the groundwater code found at §45-401 *et seq.* The Santa Cruz County Active Management Area Act ("the Act") was adopted by the legislature this past session.

Much of the regulation of Arizona water law is accomplished by the organization of the state into active management areas. There were four original active management areas: Tucson (which included the upper Santa Cruz Valley sub-basin), Phoenix, Prescott, and Pinal. The Act carves out Santa Cruz from the Tucson Active Management Area.

The declared policy behind the Act includes the finding that the hydrology water resource management issues of the upper Santa Cruz River Basin are unique because of the international nature of the River Basin. The creation of the Santa Cruz Active Management Area will facilitate international negotiations for coordinated management of the water resources of the Santa Cruz River. The Legislature also found that surface water rights and groundwater rights in the upper Santa Cruz River Basin are especially in need of coordinated management.

The stated goal of the Santa Cruz Active Management Area is to maintain a safe yield condition in the active management area and to prevent local water tables from experiencing long-term declines. In contrast, the management goal of the Tucson, Phoenix, and Prescott active management areas is a safe yield by January 1, 2025, or such earlier date as may be determined by the Director.

The Act segregates "stored water" from various aspects of the regulatory scheme. A definition of stored water was added to the groundwater code. This is a critical aspect of Santa Cruz County water resources management because the area generally is more rich in water resources than most other areas in Arizona. Therefore, water resources are more apt to be "stored" underground for future use. In Santa Cruz County, stored water is not used in calculations under other sections. For example, stored water is not subject to applicable conservation requirements established by the Director of Water Resources in management plans. A determination of the amount of water that a person is entitled to receive under an irriga-

JABA, Inc.
Office of James A. Briscoe
5610 E. Sutler Lane
Tucson, AZ 85712
(602) 721-1375
(FAX) 298-6688

FAX COVER SHEET

Main Office
2100 N. Wilmot Rd., Suite #218
Tucson, AZ 85712
(602) 885-9141
(FAX) 721-2768

DATE: 9/22/94 THIS IS PAGE 1 OF 3 SENDER James A. Briscoe

TO Jerry Niedfelt COMPANY IDC

FAX # LOCATION (City/State) Grand Island NB

COMMENTS This just came in today's mail.
I think it is important to you & IDC.

Jim

Confidentiality Caution
This message is intended only for the use of the individual or entity to which it is addressed and may contain information that is privileged and confidential. If the reader of this message is not the intended recipient, or the employee or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and return the original message to us at the above address at our cost.

OCT

NOV

DEC