



No. 90-2

PINELLAS COUNTY WELLHEAD PROTECTION ORDINANCE

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PINELLAS COUNTY WELLHEAD PROTECTION ORDINANCE

Sec. 166-191. Definitions

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Aquifer means a groundwater bearing geologic formation, or formations, that contains enough saturated permeable material to yield a minimum of 100 gallons per minute quantities of water.

Classification of groundwater, usage, reclassification. All groundwater of the county is classified by the board of county commissioners according to designated uses as follows:

- (1) *Class G-I:* Potable water use, groundwater in aquifers which has a total dissolved solids content of less than 3,000 mg/l in an unconfined or leaky confined aquifer and is restricted to zones of protection around major public community drinking water supplies, and has been classified as G-1 by the board of county commissioners.
- (2) *Class G-II:* Potable water use, groundwater in aquifers which has a total dissolved solids content of less than 10,000 mg/l, unless otherwise classified by the board.
- (3) *Class G-III:* Nonpotable water use, groundwater in unconfined aquifers which has a total dissolved solids content of 10,000 mg/l or greater, or which has total dissolved solids of 3,000--10,000 mg/l and which has been classified by the board as having no reasonable potential as a future source of drinking water, or has been designated by the county water system as an exempted aquifer using the standards contained in section 17-28.130(C), Florida Administrative Code (F.A.C.).
- (4) *Class G-IV:* Nonpotable water use, groundwater in confined aquifers which has a total dissolved solids content of 10,000 mg/l or greater.

Closure permit means that permit required by activities which must cease operation pursuant to the provisions of section 166-195 of this article, the criteria for which are set forth under section 166-196 of this article.

Completed application means an application which includes all materials and documents which are necessary to support the application and which has been accepted as complete by the county water system.

County administrator means the county administrator of Pinellas County or the administrator's designee.

Designated public utility means that public utility which has been designated by federal, state, regional or local law, regulation, resolution, rule, ordinance or requirement as having jurisdiction to provide potable water or residential wastewater service to the property on which the nonresidential activity is located.

Discharge to groundwater means treated or untreated wastewater, stormwater leachate, leachate from a solid waste facility, or leaked product generated by the construction or operation of an installation and discharging directly or indirectly to groundwater.

Emergency hazardous situation means a situation which exists whenever there is an immediate and substantial danger to human health, safety, or welfare or to the environment.

EPA means the United States Environmental Protection Agency.

Facility means main structures, accessory structures and activities which store, handle, use or produce regulated substances. Where contiguous facilities exist and such facilities are separate in the nature of the businesses, they shall remain separate under this article.

FDEP means the Florida Department of Environmental Protection.

Generic substance list means those general categories of substances set forth in Appendix A to Ordinance No. 90-2 and incorporated herein by reference. This list is equivalent to the regulated substances.

Groundwater means water that fills all the unblocked voids of underlying material below the ground surface, which is the upper limit of saturation, or water which is held in the unsaturated zone by capillarity.

Laboratory means a designated area or areas used for testing, research, experimentation, quality control, or prototype construction, but not used for repair or maintenance activities (excluding laboratory equipment), the manufacturing of products for sale, or pilot plant testing.

Major public community drinking water supply means those community water systems as defined in section 17-550.200(7), F.A.C., that are permitted by consumptive use permit to withdraw an average daily amount of 100,000 gallons or greater of groundwater.

New discharge means, for the purpose of the zone of protection, a discharge from a new installation, or a discharge for which a permit is required which is significantly different and causing a negative impact on groundwater, from the permit conditions as of the effective date of the zone of protection classification for the chemical, microbiological, physical quality, quantity, or point of discharge.

New installation means, for the purpose of the zone of protection, facilities located in areas receiving protection through classification by the board of county commissioners within the zone of protection that have neither filed a complete permit application nor received an appropriate permit prior to the effective date of classification.

Nonresidential activity means any activity which occurs in any building, structure or open area which is not used primarily as a private residence or dwelling.

Open interval of a well means the uncased or screened length of the well within the saturated zone of an aquifer.

Operating permit means the permit required of certain activities under section 166-195 to operate, the criteria for which are set forth under section 166-196.

Person means any natural person, individual, public or private corporation, firm, association, joint venture, partnership, municipality, governmental agency, political subdivision, public officer, owner, lessee, tenant or any other entity whatsoever or any combination of such, jointly or severally.

Potable water means water that is intended for drinking, culinary or domestic purposes, subject to compliance with county, state or federal drinking water standards.

Public utility means any privately owned, municipally owned, county-owned, special district-owned, or state-owned system providing water or resident wastewater service to the public which has at least 15 service connections or regularly serves at least 25 individuals daily for at least 60 days of the year.

Regulated substances means those deleterious substances, contaminants, priority pollutants (in accordance with chapter 17-22, F.A.C.), and potable water quality primary and secondary standards parameters (in accordance with chapter 3, part 4, F.A.C., and appendices A and E), which, because of

quality, concentration, or physical, chemical, including ignitability, corrosivity, reactivity, synergistic, and toxicity; or infectious characteristics, radioactivity, mutagenicity, carcinogenicity, teratogenicity, bioaccumulative effect, persistence, or nondegradability in nature, or any other characteristic, may cause significant harm to human health and the environment, including surface water and groundwater, plants, and animals.

Spill means the unpermitted release or escape of a regulated substance directly or indirectly to soils, surface waters or groundwaters.

Underground facilities for transportation of wastewater of industrial chemical products means underground facilities for transportation of waste effluent of industrial chemical products, including piping, sewer lines, and ducts or other conveyances designed to transport industrial pollutants as defined in F.S. § 376.301(12), and contaminants as defined in F.S. § 403.031(1).

Underground storage facility means and includes any enclosed structure, container, tank or other enclosed stationary devices used for storage or containment of pollutants as defined in F.S. § 376.301(18) or any contaminant as defined in F.S. § 403.031(1). Nothing in this definition is intended to include septic tanks, enclosed transformers or other similar enclosed underground facilities.

Utility means a public utility (power company or telephone company) which serves the general public.

Variance means a grant of relief to a person or entity from the requirements of this article, which permits construction in a manner otherwise prohibited by this article where specific enforcement would result in inequitable hardship. The county administrator shall have the authority to grant variances.

Water table means the surface between the vadose zone and the groundwater, that surface of a body of unconfined groundwater at which the pressure is equal to that of the atmosphere.

Well means a pit or hole sunk into the earth to reach a resource of potable supply, such as water, to be used for domestic purposes by municipalities. Irrigation wells and privately owned wells for domestic consumption are not included in the scope of this article.

Wellfield means an area of land which contains more than one well for obtaining water.

Zone of protection means the total area contributing water to a well under a given set of circumstances. This area changes over time in response to changes in the water table or potentiometric surface, well pumpage, and other withdrawals in the vicinity. It is determined by the construction of a flow net, based on potentiometric surface contours.

Zone of protection map means the map at the scale determined by the county administrator showing the location on the ground of the outer limits of the zone of protection for present and future public potable water supply wells and wellfields of 100,000 gallons per day or more. This zone is described in section 166-194.

(Ord. No. 90-2, § 3, 1-30-90; Ord. No. 90-62, § 3, 7-24-90; Ord. No. 93-12, § 2, 2-16-93)

Cross references: Definitions generally, § 134-2.

Sec. 166-192. Authority.

(a) This article is adopted in compliance with, and pursuant to, the local government comprehensive planning and land development regulation act, F.S. § 163.3161 et seq. This article is adopted pursuant to the constitutional and home rule powers of article VIII, Florida Constitution, F.S. ch. 125, and article II of the Pinellas County Home Rule Charter.

(b) All provisions of this article shall be effective within the incorporated and unincorporated areas of the county, as delineated by a zone of protection map, and shall set restrictions, constraints and prohibitions to protect present and future public potable water supply wells and wellfields from degradation by contamination from regulated substances.

(Ord. No. 90-2, § 1, 1-30-90; Ord. No. 90-62, § 1, 7-24-90)

Charter references: Conflicts between county and municipal ordinances, §§ 2.01, 2.04.

Sec. 166-193. Purpose and intent.

(a) In order to properly protect existing and future potable water supply sources within the zone of protection area, the board of county commissioners declares that the storage, handling, use, disposal, or production of hazardous or toxic substances in close proximity to public potable water supply wells is potentially harmful to the drinking water of the county, and that certain land uses and activities involving regulated or generic substances are hereby prohibited or regulated within the defined zone of protection area.

Therefore, the intent of this article is to protect and safeguard the health, safety, and welfare of the residents and visitors of the county by providing criteria for regulating and prohibiting the use, handling, production, disposal, and storage of certain regulated substances which may impair present and future public potable water supply wells and wellfields.

It is the intent of the board of county commissioners to augment the policies within the adopted comprehensive plan that protect the wells and wellfields through land use controls and environmental regulations. It is essential to protect the environmentally sensitive area adjacent to wells and wellfields from disruption and encroachment in order to preserve vital natural functions relating to water quality, water quantity and other elements of aquatic ecosystems.

(b) It is the intent of the county to enter into interlocal agreements with Pasco County and Hillsborough County to exercise jointly any power, privilege or authority to protect from degradation all potable water wells within the zone of protection. The agreements shall be construed as accomplishing a joint use of powers subject to the terms and conditions stated in this article, in addition to any ordinance and regulations of Pasco County and/or Hillsborough County if the development proposal lies within their jurisdiction.

The agreement shall at a minimum include provisions for administration and enforcement of label development regulations within any area of the zone of protection and shall be undertaken by the jurisdiction within whose boundaries that area is located. With respect to the issuance of any development order or development permit within the zone of protection, the nonjurisdictional counties shall receive notice prior to any decision or determination on an application for development with adequate time for the nonjurisdictional counties to review and comment on the development permit application.

(c) The generic substance list attached to Ordinance No. 90-2 and incorporated in this article as Appendix A is provided for informational and regulatory purposes and may be amended from time to time by the board of county commissioners. Persons using, handling, producing or storing a substance on the generic list may be using, handling, producing or storing a regulated substance as defined by this article. Persons unsure as to whether they are subject to this article may wish to consult with the county water system.

(Ord. No. 90-2, § 2, 1-30-90; Ord. No. 90-62, § 2, 7-24-90)

Sec. 166-194. Maps delineating zone of protection.

(a) The zone of protection maps developed as described in subsection (b) are incorporated herein and made a part of this article. These maps shall be on file and maintained by the county administrator's designated departments. Any amendments, additions or deletions to such maps shall be approved by amendment to this article pursuant to the provisions established by F.S. § 125.66(5).

(b) The zone of protection map is developed by the following procedure:

- (1) The historic water level data is obtained for each of the U.S. Geological Survey and county water system Floridan monitor wells shown on the zone of protection map and listed in Appendix I.
- (2) The average water level is calculated for each well for the period of record available for each well.
- (3) Potentiometric surface contours are then constructed based on these average water levels.
- (4) A flow net is then constructed across the potentiometric contours by constructing flow lines perpendicular to potentiometric contours.
- (5) The zone of protection is delineated by extending a line along the convergence of those flow lines that enter the wells or wellfields (flow lines converge in areas of discharge and diverge in areas of recharge).
- (6) As additional Floridan monitor wells are constructed in the map area, this additional water level data will be incorporated into the zone of protection map. Accumulated annual water level data may be evaluated annually and adjustments to the zone of protection will be made as the data dictates.
- (7) Measurement of the zone around a wellfield will be established for the entire wellfield by calculating the zone of protection for the wellfield as a whole. In the case of unclustered wells, individual zones of protection around each well will be calculated.
- (8) Rebuttable presumption: Affected parties wanting to challenge the county's determination of the zone of protection may do so during the public hearings by generating more precise site-specific data concerning potentiometric levels that would allow more accurate calculations of the zone.
- (9) The county administrator may change the zone of protection based on reconfiguration of a wellhead or wellfield, changes in open interval, proper abandonment of a well pursuant to rule 17-522, F.A.C., or permitted increase in the permitted average daily pumping rate. Such changes in the zone of protection shall follow the requirements as described in subsection (c) of this section. The zone of protection may be established for newly approved/permitted well(s) or wellfield(s), after the appropriate hydrogeologic testing and impact analyses have been performed in accordance with Southwest Florida Water Management District permitting consumptive use from the wells or wellfields.

(c) The zone of protection maps may be reviewed at least on an annual basis. However, failure to conduct such review shall not affect the validity of the existing approved map. The basis for updating such map may include, but is not limited to, the following:

- (1) Changes in the technical knowledge concerning the applicable aquifer.
- (2) Changes in pumping rates of wellfields.

(3) Wellfield reconfiguration.

(4) Designation of new wellfields.

(d) In determining the location of properties and facilities within the zones depicted on the zone of protection map, the following rules shall apply:

(1) Properties located partially within the zone of protection reflected on the applicable zone of protection maps shall be governed by the restrictions applicable to that zone.

(2) Where a zone of protection contour passes through a facility, the entire facility shall be considered to be in the more restrictive zone.

(e) The legal description of the area of the county zone of protection is as follows:

Commence at the intersection of the centerline at East Lake Road (C.R. 77) and the northern boundary line of Pinellas County; thence run easterly along said northern boundary line of Pinellas County to its intersection with the eastern boundary line of Pinellas County; thence run southerly along said eastern boundary line of Pinellas County to its intersection with the easterly extension of the Florida Power Corporation right-of-way, said intersection being 1290'+ north of the southeast corner of Section 12, Township 28 South, Range 16 East; thence westerly along the easterly extension of the centerline and the centerline of said Florida Power Corporation right-of-way to its intersection with the centerline of Tampa Road (S.R. 584); thence northwesterly along the centerline of Tampa Road (S.R. 584) to its intersection with the centerline of the aforementioned East Lake Road (C.R. 77); thence northerly along the centerline of East Lake Road (C.R. 77) to the point of beginning.

(Ord. No. 90-2, § 4, 1-30-90; Ord. No. 90-62, § 4, 7-24-90; Ord. No. 92-67, § 1, 10-27-92)

Sec. 166-195. Conditions of permitting, planning, and zoning within zone of protection.

(a) The use, handling, production, disposal, and storage of regulated substances associated with nonresidential activities is prohibited in the zone of protection, except as provided under the general exemptions and special exemptions provisions of this article (sections 166-200 and 166-201). All existing nonresidential activities within the zone of protection which store, handle, use, dispose of, or produce any regulated substance are prohibited from doing so unless they qualify as a general exemption, obtain a special exemption, or receive an operating permit from the county administrator. The owners or operators of such activities within the zone of protection shall be notified in writing, by certified mail, or hand delivery, within 90 days of the effective date of this article, as to the requirements to cease the use, handling, storage, disposal, and production of regulated substances. All existing nonresidential activities within the zone of protection which store, use, handle, or produce regulated substances shall file an application for an operating permit, or an operating permit with a general exemption application, or an operating permit with special exemption application, or a closure permit, within 90 days of receipt of notice from the county administrator. Such permit application shall be prepared and signed by a professional registered engineer and a geologist certified in the state, or either if the applicant can demonstrate to the county administrator that conditions will only require an engineer or a geologist. Within 30 days of receipt of such notice, the owner or operator shall file with the county administrator proof of retention of such engineer and geologist, or submit to the county administrator a written notice to obtain either an engineer or geologist.

(b) Any nonresidential activity in the zone of protection which is allowed to continue or commence in accordance with the general exemptions or special exemptions set forth in sections 166-200 and 166-201 shall obtain an operating permit which shall indicate the special conditions to be instituted and the dates on which such conditions shall be instituted. No expansions, modifications or alterations which would

increase the storage, handling, use or production of regulated substances shall be permitted in the zone of protection. An owner or operator that is denied a special exemption shall be issued a closure permit as part of the denial process. Any operating permit required in this article shall be filed with the applications for general exemption or special exemption.

(c) All new nonresidential discharges, new nonresidential activities, and installations shall be prohibited subject to conditions including but not limited to the following:

- (1) No nonresidential installation shall discharge into groundwater, either directly or indirectly, any contaminant that causes a violation in the water quality standards and criteria for the receiving groundwater as established in chapter 17-3, part IV, F.A.C.
- (2) Discharges through natural or manmade conduits, such as wells and sinkholes, that allow direct contact with class G-1 and class G-2 groundwater are prohibited, except for projects designed to recharge aquifers with surface water of comparable quality, or projects designed to transfer water across or between aquifers of comparable quality for the purpose of storage or conservation, or residential stormwater discharging through wet retention/detention ponds.
- (3) Industrial stormwater discharges to retention/detention ponds are prohibited.
- (4) New discharge to groundwater of industrial waste that contains hazardous constituents listed in the department of environmental protection's publication, G-1, Modified Hazardous Constituents List (December 1, 1986), which is hereby adopted and incorporated by reference, shall be prohibited.
- (5) There will be no new industrial land use zoning within the zone of protection.
- (6) Construction and operation of new sanitary landfills as defined by applicable state rules shall be prohibited. Operation of all existing sanitary landfills will be terminated within one year and a permanent leachate monitoring system installed to monitor movement of leachate.
- (7) Commercial or industrial septic tank disposal systems are prohibited in the zone of protection.
- (8) Construction of interstate highway system is prohibited for construction within one-half mile of public supply wells, unless stormwater drainage is collected and piped beyond the half-mile radius of the wellhead. There will be no stormwater retention within this half-mile radius around the zone of the wellhead.

(d) New and existing nonresidential discharge to groundwater within the zone of protection shall comply with the primary and secondary standards at the end of the discharge pipe. Additionally, more stringent monitoring requirements than the existing state law may be implemented. More stringent monitoring requirements may include increased monitoring frequency, increased number of parameters, or increased number of monitoring wells. Such determinations will be made by the county on a case-by-case basis by considering soil conditions, quality and volume of the waste stream, and the point of discharge.

- (1) Stormwater discharge within the zone of protection: Direct and indirect discharge from new stormwater facilities serving an area ten acres or larger with a 40 percent impervious surface excluding building tops shall be required to monitor the discharge to groundwater according to section 17-28.700(6), F.A.C. Such facilities may be required to implement more stringent monitoring requirements which may include increased monitoring frequency, increased number of parameters, or increased number of wells. Such determination will be made by the county administrator on a case-by-case basis by considering soil conditions, quality and volume of the waste stream, and the point of discharge.

- (2) Commercial stormwater runoff will be required to have a double pond detention/retention system for new facilities. The first pond will be off line and lined to prevent leakage and be designed to hold the first inch of runoff. Sludge from the first pond will be disposed of in accordance with FDEP rules and regulations. The second retention pond will accept overflow from the detention pond. Existing facilities will be required to obtain an operating permit and perform groundwater quality monitoring for groundwater pollution.

Variance. In order to authorize any variance to the stormwater runoff requirements of this subsection (d)(2), the county administrator shall consider the following criteria:

- a. *Special conditions*: That special conditions and circumstances exist which are peculiar to the land, structure, or building involved, including the nature of and to what extent these special conditions and circumstances may exist as direct results from actions by the applicant.
 - b. *No special privilege*: That granting the variance requested will not confer on the applicant any special privilege that is denied by this article to other similar lands, buildings, or structures in the zone of protection.
 - c. *Unnecessary hardship*: That literal interpretation of the provisions of this article would deprive the applicant of rights commonly enjoyed by other properties under the terms of this article.
 - d. *Minimum variance necessary*: That the variance granted is the minimum variance that will make possible the reasonable use of the land, building, or structure.
 - e. *Purpose and intent compliance*: That the grant of the variance will be in harmony with the general intent, purpose, and spirit of this article, and with the comprehensive plan adopted pursuant to state law.
 - f. *No detriment to public welfare*: That such variance will not be injurious to the area involved or otherwise detrimental to the public welfare.
 - g. *Establishing conditions or safeguards*: That in granting any variance, the county administrator may prescribe appropriate conditions and safeguards to ensure proper compliance with the general spirit, purpose, and intent of this article. Noncompliance with such conditions and safeguards, when made a part of the terms under which the variance is granted, shall be deemed a violation of this article.
 - h. *Expiration*: All variances granted by the County Administrator shall be deemed to automatically expire in the event a structure or use of land which is the subject of the variance has been discontinued.
- (3) New underground storage facilities within the zone of protection shall meet the following requirements:
- a. Double-walled tank and piping with a continuous leak detection system in between the walls; or
 - b. An impervious secondary containment having monitoring well(s) or detector located therein; and
 - c. For each of the above options, it is required that the facility install, maintain, and monitor a groundwater program approved by the County.

- (4) Existing underground storage facilities within the zone of protection not meeting the construction retrofit requirements of chapter 17-61, F.A.C., on the effective date of aquifer classification as class G-1 by the Board of County Commissioners shall be retrofitted in accordance with chapter 17-61, F.A.C., and shall also meet the requirements for new facilities under subsection (d)(3) of this section.
- (5) Existing underground storage facilities within the zone of protection meeting the construction retrofit requirements of chapter 17-61, F.A.C., on the effective date of aquifer classification within the zone of protection by the Board of County Commissioners are exempt from the requirements above, with the exception of being required to increase their groundwater monitoring programs. Nothing herein shall be construed to relieve facilities subject to chapter 17-61, F.A.C., requirements from complying with the requirements of that chapter.
- (6) New underground facilities for transportation of domestic raw wastewater within the zone of protection shall be constructed not to allow leakage of more than 25 gallons per inch of pipe diameter per mile per day into the soil or groundwater. These facilities, however, shall not cause violations of groundwater quality standards (as referenced in applicable state rules).
- (7) New underground facilities for transportation of chemical products within the zone of protection shall be constructed to ensure no leakage into the soil or groundwater.
- (8) Discharge to groundwater from the state department of environmental protection approved remedial corrective actions for contaminated sites located within the zone of protection shall not be subject to the G-1 discharge criteria.
- (9) New discharge to groundwater of treated domestic waste effluent meeting domestic wastewater plant class I reliability; daily monitoring to assure proper treatment plant process control; and 24-hour-a-day attendance by a wastewater operator as required by chapter 17-16, F.A.C., and under the general supervision of a class A certified wastewater operator, shall be allowed to operate provided that the discharge from such plant shall meet the groundwater criteria as specified in section 17-520.420, F.A.C., prior to contact with groundwater (end of pipe). Treated domestic waste effluent discharge employing land application shall be restricted to slow-rate infiltration methods. At no time will an effluent disposal area be within 500 feet of potable supply wells.
- (10) New single-family residential septic tanks will be exempt from this article, provided they meet the minimum criteria of one unit per two acres.

(e) A notice to cease, or a permit or an exemption issued under this article shall not relieve the owner or operator of the obligation to comply with any other applicable federal, state, regional or local regulation, rule, ordinance or requirement, nor shall such notice, permit, or exemption relieve any owner or operator of any liability for violation of such regulations, rules, ordinances or requirements.

(Ord. No. 90-2, § 5, 1-30-90; Ord. No. 90-62, § 5, 7-24-90; Ord. No. 93-12, § 2, 2-16-93)

Sec. 166-196. Permits.

(a) *Compliance with article required.* The permit conditions shall ensure compliance with all the prohibitions, restrictions, and requirements as set forth in this article. Such conditions may include, but are not limited to, monitoring wells, periodic groundwater analysis reports, and compliance schedules. Such conditions may also include requirements in a closure permit to reduce the risk in the interim of contamination of the groundwaters, taking into account cost, likely effectiveness and degree of risk to the groundwater.

(b) *Requirements for issuance of other permits.*

- (1) No site plan approval, building permit, or certificate of occupancy for any nonresidential activity shall be issued by the County or any city located within the County that would allow development or construction in the zone of protection, that is contrary to the restrictions and provisions provided in this article. Permits issued in violation of this section confirm no right or privilege on the grantee.
- (2) The requirements and provisions of this article shall apply immediately on February 17, 1990, to all new nonresidential activities.
- (3) An existing activity is one for which a building permit had been issued by the appropriate jurisdiction prior to February 17, 1990, and which had not expired on or before February 17, 1990, or for which a completed building permit application had been filed and accepted with the appropriate jurisdiction prior to February 17, 1990. All other activities shall be deemed new.
- (4) Any application for a nonresidential or residential development greater than 25 units for a site plan approval, building permit or nonresidential development subject to review by an advisory planning body and approval by the local governing authority or Zoning Board of Appeals that includes property wholly or partially within the zone of protection of a wellfield shall include the following:
 - a. Notification by the local governing authority of the location of the property in the zone of protection and a notarized letter from the applicant admitting acceptance of notification; notification shall be prepared by the County Administrator providing details of zones, prohibitions, and measures required for compliance; or
 - b. Any application submitted for site plan approval or certification of occupancy for any use within the zone of protection shall require certification by the County Administrator that the use meets the applicable requirements of this article.
- (5) It shall be the duty of each local agency to screen all applications for the zone of protection site plans.
- (6) The County Administrator shall provide a list to all local agencies of potentially prohibited operations in the zone of protection.
- (7) Copies of building permits of residential activities larger than 25 units, all nonresidential projects, and all site plans, or nonresidential certificates of occupancy issued for the zone of protection shall be submitted to the County Administrator on a weekly basis.

(c) *Change of ownership.* In the event there is a change of ownership, a new lease, or an assignment of a lease, a sublease or any other change in regard to the person conducting the operation regulated, the County Administrator shall be notified by the property owner upon payment of the appropriate application fee and completion of processing of an application. In the event of leasing of space, the lessee will obtain the permit, but the property owner will be liable for the on-site activities relative to the conditions of the permit. The property owner will be notified by the County Administrator regarding the permit application or condition.

(d) *Issuance, fees, inspections.*

- (1) An application which satisfied the requirements of the applicable zone of protection, section 166-195, and this section and, if applicable, section 166-194, shall be approved and a permit issued. In addition to the failure to satisfy these requirements, the County Administrator may deny a permit based on repeated violations of this article.

- (2) An operating permit shall remain valid provided the permittee is in compliance with the terms and conditions of the permit
- (3) Permittees shall not be required to pay annual renewal fees until March 1, 1991. Beginning March 1, 1991, all current and future permittees are subject to an annual renewal license fee as adopted by the Board of County Commissioners.
- (4) The County Administrator shall have the right to make inspections of facilities at reasonable times to determine compliance with this article.
- (5) All of the facilities owned and/or operated by one person, when these structures and activities are located on contiguous parcels of property, even where there are intervening public or private roads, may be covered under one permit.

(e) *Requirements and liabilities.*

- (1) Leakproof trays under containers, floor curbing or other containment systems to provide secondary liquid containment shall be installed. The containment shall be of adequate size and design (no less than 150 percent of container volume) to handle all spills, leaks, overflows, and precipitation until appropriate action can be taken. The specific design and selection of materials shall be sufficient to preclude any regulated substance loss to the external environment. Containment systems shall be sheltered so that the intrusion of precipitation is effectively prevented. The owner/operator may choose to provide adequate and appropriate liquid collection methods rather than sheltering only after approval of the design by the County Administrator. These requirements shall apply to all areas of use, production, and handling, to all storage areas, to loading and off-loading areas, and to aboveground and underground storage areas. The containment devices and liquid collection systems shall be certified in the operating permit application by a professional engineer certified in the State.
- (2) Vacuum suction devices, absorbent scavenger materials or other devices approved by the County Administrator shall be present on-site or available within four hours in the zone of protection 24 hours per day and seven days per week by contract with a cleanup company approved by the County Administrator, in sufficient magnitude so as to control and collect the total quantity of regulated substances present. To the degree feasible, emergency containers shall be present and of such capacity as to hold the total quantity of regulated substances plus absorbent material. The presence of such emergency collection devices shall be certified annually in the operating permit applications for existing activities. Such certification for new activities shall be provided to the County water system prior to the presence of regulated substances on the site. Certification shall be provided by a professional registered engineer certified in the State.
- (3) An emergency plan shall be prepared and filed with the operating permit application indicating the procedures which will be followed in the event of spillage of a regulated substance so as to control and collect all such spilled material in such a manner as to prevent it from reaching any storm or sanitary drains or the ground.
- (4) A responsible person designated by the permittee who stores, handles, uses or produces the regulated substances shall check, on every day of operation, for breakage or leakage or any container holding the regulated substances. Electronic sensing devices may be employed as part of the inspection process, if approved by the County Administrator, and provided the sensing system is checked daily for malfunctions. The manner of daily inspection shall not necessarily require physical inspection of each container provided the location of the containers can be inspected to a degree which reasonably assures the County Administrator that breakage or leakage can be de-tected by the inspection. Monitoring records shall be kept, submitted quarterly, and made available to the County Administrator within 24 hours, upon

request. Quarterly, each facility will be inspected, its monitoring procedures reviewed, and quality water samples taken.

- (5) Procedures shall be established for the quarterly in-house inspection and maintenance of containment and emergency equipment. Such procedures shall be in writing, a regular checklist and schedule of maintenance shall be established, and a log shall be kept of inspections and maintenance. Such logs and records shall be available for inspection by the County Administrator.
- (6) Any spill of a regulated substance shall be reported by telephone to the County health unit and designated public utility within one hour, and the County Administrator within one hour of discovery of the spill. Cleanup shall commence immediately upon discovery of the spill. A full written report including the steps taken to contain and clean up the spill shall be submitted to the County Administrator within 15 days of discovery of the spill.
- (7) The County water system will establish a schedule of raw water analysis if inspection of a facility indicates signs of contamination, in which case the County Administrator shall require a sampling schedule. The analysis shall be for all substances which are listed on the operating permit. The analytical reports shall be prepared by a state certified laboratory, certified for the applicable analyses. The analytical reports shall be reviewed by the County water system.
- (8) Groundwater monitoring wells shall be provided at the expense of the permittee in a manner, number and location approved by the County Administrator as shown in Appendix G, Exhibit A. Except for existing wells found by the County Administrator to be adequate for this provision, the required well or wells shall be designed by a professional registered engineer or a state certified geologist, and installed by a state-licensed water well contractor under the supervision of a professional registered engineer or a state certified geologist. On completion of well construction, a report will be submitted by the geologist or engineer to the County Administrator detailing final well construction geology and a map of the facility showing well location. Quarterly, water quality samples shall be taken by a state certified laboratory during the quarterly inspection of each facility. Analytical reports prepared by a certified laboratory of the quantity present in each monitoring well of the regulated substances listed in the activity's operating permit shall be filed at least annually, or more frequently as determined by the County Administrator, based upon site conditions and operations.
- (9) The County Administrator shall be notified in writing prior to the expansion, alteration or modification of a business or individual holding an operating permit. Such expansion, alteration, or modification may result from increased square footage of production or storage capacity, or increased quantities of regulated substances, or changes in types of regulated substances beyond those square footages, quantities, and types upon which the permit was issued. Excluded from notification prior to alteration or modification are changes in types of regulated substances used in a laboratory or laboratories designed as such in the currently valid permit and which are within the generic substances listed in such permit based upon the generic substance list incorporated in this article as Exhibit A. Should a facility add new regulated substances, it shall notify the County Administrator on a quarterly basis of the types and quantities of such substances added and the location of the use, handling, storage, and production of such substances. Any such expansion, alteration or modification shall be in strict conformity with this article. Further, except as provided in this article, any existing operating permit shall be amended to reflect the introduction of any new regulated substances resulting from the change. However, the introduction of any new regulated substance shall not prevent the revocation or revision of any existing operating permit if, in the opinion of the County Administrator, such introduction substantially or materially modifies, alters or affects the conditions upon which the existing operating permit was granted or the ability to remain qualified as a general exemption, if applicable, or to continue to satisfy any conditions that have been imposed as part of a special exemption, if applicable. The County Administrator shall

notify the permittee in writing within 60 days of receipt of the permittee's notice that the County Administrator proposes to revoke or revise the permit and stating the grounds therefor.

- (10) Reconstruction of any portion of a structure or building in which there is any substance or facility subject to the provisions of this article which is damaged by fire, vandalism, flood, explosion, collapse, wind, war or other catastrophe shall be in strict conformity with this article.
- (11) All existing nonresidential activities in the zone of protection which use, handle, store, dispose, or produce regulated substances shall file an application for an operating permit within 90 days or a closure permit, general exemption application or special exemption application within 90 days of the receipt of written notice from the County Administrator. Such permit application shall be prepared and signed by a professional registered engineer and a geologist certified in the State, or either at the option of the County Administrator if conditions dictate. Within 30 days of receipt of such notice, the owner or operator shall file with the County Administrator proof of retention of such engineer and geologist or submit to the County Administrator a written notice to obtain either an engineer or geologist, in accordance with FDEP statutes. If application is made for an operating permit, such a permit shall be issued or denied within 60 days of the filing of the completed application. If the application for an operating permit is denied, then the activity shall cease within one year of the denial and an application for a closure permit shall be filed within 120 days of the denial of the operating permit.

(f) *Operating permit applications.* Operating permit applications, as a minimum, shall provide the following information:

- (1) A list of all regulated substances and substances on the generic substance list which are to be stored, handled, used, disposed of, or produced in the nonresidential activity being permitted, including their quantities.
- (2) A detailed description of the nonresidential activities that involve the storage, handling, use, disposal, or production of the regulated substances indicating the unit quantities in which substances are contained or manipulated.
- (3) A description of the containment, the emergency collection devices and containers and copy of the emergency plan that will be employed to comply with the restrictions required for the zone of protection.
- (4) A description of the daily monitoring activities that have been or will be instituted to comply with the restrictions for the zone of protection.
- (5) A description of the maintenance that will be provided for the containment facility, monitoring system, and emergency equipment required to comply with the restrictions of the zone of protection.
- (6) A description of the groundwater monitoring wells, including the latitude and longitude, location map, construction design, geology log and water quality analysis that have been or will be installed and the arrangements made or which will be made for certified quarterly analyses for specified regulated substances in the zone of protection.
- (7) Evidence of arrangements made with the appropriate designated public utility for sampling analysis of the raw water from the potable water well.
- (8) An agreement to indemnify and hold the County harmless from any and all claims, liabilities, causes of action, or damages arising out of the issuance of the permit. The County shall provide reasonable notice to the permittee of any such claims.

- (9) The application for the operating permit shall be filed with the County Administrator within 90 days of receipt of written notification from the County Administrator of the requirement for the facility to obtain an operating permit. In the event of verification of groundwater contamination at a facility within the zone of protection, the Board of County Commissioners will have the option of requiring the bond or letter of credit with a corporate surety in the amount required by Appendix B, incorporated in this article, to ensure that:
- a. The permittee will operate its nonresidential activities and/or closure of such nonresidential activities, as applicable, in accordance with the conditions and requirements of this article and permits issued under this article.
 - b. Before a bond or letter of credit is accepted by the County Administrator as being in compliance with this section, the bond or letter of credit shall be reviewed and approved by the County Insurance and Risk Management Department and the County Attorney's Office and shall be filed with the Clerk of the Board of County Commissioners. A corporate bond shall be executed by a corporation authorized to do business in the State as a surety. A cash bond shall be deposited with the Clerk of the Board of County Commissioners, who shall give receipt therefor.
 - c. Any person subject to regulation under this article shall be liable with respect to regulated substances emanating on or from the person's property for all costs of removal or remedial action incurred by the County and damages for injury to, destruction of, or loss of natural resources, including the reasonable costs of assessing such injury, destruction or loss resulting from the release or threatened release of a regulated substance as defined in this article. Such removal or remedial action by the County may include, but is not limited to, the prevention of further contamination of groundwater, monitoring, containment, and cleanup or disposal of regulated substances resulting from the spilling, leaking, pumping, pouring, emitting or dumping of any regulated substance or material which creates an emergency hazardous situation or is expected to create an emergency hazardous situation.
- (g) *Closure permit applications.* Closure permit applications shall provide the following information:
- (1) A schedule of events to complete the closure of a facility that does or did store, handle, use, dispose, or produce regulated substances. At a minimum, the following actions shall be addressed:
 - a. Disposition of all regulated substances and contaminated containers
 - b. Cleanup of the activity and environs to preclude leaching of unacceptable levels or residual regulated substances into the aquifer.
 - c. Certification by a professional registered engineer or a geologist certified in the State that disposal and cleanup have been completed in a technically acceptable manner.
 - d. An appointment for an inspection by the County Administrator.
 - e. An agreement to indemnify and hold the County harmless from any and all claims, liabilities, causes of action, or damages arising out of the issuance of the permit. The County shall provide reasonable notice to the permittee of any such claims.
 - (2) The issue of well reconfiguration shall be evaluated by the County Administrator and the affected public utility as an alternative to a closure permit during the permit application process.
 - (3) The County water system shall be advised in writing of each closure permit application.

(h) *Fee schedule*

- (1) The fee for an operating permit under this article shall be as shown in Appendix C, incorporated in this article. A late fee shall be charged if the application for a permit or renewal is late. The operating permit fee shall be used to defray the cost of monitoring compliance with this article.
- (2) The fee for a closure permit under this article regulation shall be as shown in Appendix C.
- (3) The fee for a transfer of an operating permit or closure permit shall be in accordance with the fee schedule set out in Appendix C to defray the cost of processing the transfer. Application for transfer permit is to be made within 60 days of transfer of ownership of the activity.
- (4) The fee schedule may be revised from time to time by resolution of the Board of County Commissioners.

(i) *Revocation or revision of permits, general exemption or special exemption.*

- (1) Any permit issued under the provisions of this article shall not become vested in the permittee. The County Administrator will revoke any permit by first issuing a written notice of intent to revoke by certified mail, return receipt requested, or hand delivery, if he finds that the permit holder:
 - a. Has failed or refused to comply with any of the provisions of this article, including but not limited to permit conditions and bond requirements in this article;
 - b. Has submitted false or inaccurate information in his application;
 - c. Has failed to submit operational reports or other information required by this article;
 - d. Has refused lawful inspection; or
 - e. Is subject to revocation.
- (2) The County Administrator may revise any permit by first issuing a written notice of intent to revise, sent by certified mail, return receipt requested, or hand delivery.
- (3) In addition to the provisions of subsections (i)(1) and (i)(2) of this section, within 30 days of any spill of a regulated substance in the zone of protection, the County Administrator shall consider revocation or revision of the permit or revise the bond amount. Upon such consideration the County Administrator may issue a notice of intent to revoke or revise which shall be subject to the provisions of section 166-199, or elect not to issue such notice. In consideration of whether to revoke or revise the permit, the County Administrator may consider the intentional nature or degree of negligence, if any, associated with the spill, and the extent to which containment or cleanup is possible, the nature, number and frequency of previous spills by the permittee, and the potential degree of harm to the groundwater and surrounding wells due to such spill.
- (4) For any revocation or revision by the County Administrator of a special exemption or general exemption that requires an operating permit as provided under the terms of this article, the County Administrator shall issue a notice of intent to revoke or revise which shall contain the intent to revoke or revise both the applicable exemption and the accompanying operating permit.
- (5) The written notice of intent to revoke or revise shall contain the following information:

- a. The name and address of the permittee, if any, and property owner, if different.
 - b. A description of the facility which is the subject of the proposed revocation or revision.
 - c. Location of the spill, if any.
 - d. Concise explanation and specific reasons for the proposed revocation or revision.
 - e. A statement that "Failure to file a petition within 30 days after the date upon which permittee receives written notice by certified or registered letter to the lessor and landowner of the intent to revoke or revise shall render the proposed revocation or revision final and in full force and effect."
- (6) Failure of the permittee to file a petition shall render the proposed revocation or revision final and in full force and effect.
- (7) Nothing in this section shall preclude or be deemed a condition precedent to the County Administrator seeking a temporary or permanent injunction.

(Ord. No. 90-2, § 6, 1-30-90; Ord. No. 90-62, § 6, 7-24-90; Ord. No. 92-67, § 6, 10-27-92; Ord. No. 98-24, § 1, 2-10-98)

Sec. 166-197. Powers and duties of county administrator.

- (a) The County Administrator or the administrator's designee shall have the power and duty to:
- (1) Administer and enforce the provisions of this article.
 - (2) Investigate complaints, study and observe pollution conditions, and make recommendations as to the institution of action necessary to abate nuisances caused by pollution, and as to prosecution of any violation of this article.
 - (3) Make appropriate surveys, tests, and inspections of property, facilities, equipment, and processes operating under the provisions of this article to determine whether the provisions of this article are being complied with; interact with the state department of environmental protection, and make recommendations for methods by which pollution may be reduced or eliminated. Inspections shall be conducted in accordance with subsection (b) of this section.
 - (4) Maintain, review, and supervise all operating records required to be filed with the county administrator by persons operating facilities subject to the provisions of this article.
 - (5) Render all possible assistance and technical advice to persons owning and/or operating regulated facilities, except that the county administrator and/or his employees shall not design the facility systems for any person.
 - (6) Perform such other administrative duties as may be assigned by the board of county commissioners.
 - (7) Issue or deny permits.
- (b) Inspections shall be conducted as follows:
- (1) Any duly authorized representative of the county administrator may, at any reasonable time, enter and inspect for the purpose of ascertaining the state of compliance with this article, any property, premises, or place, except a building which is used exclusively for a private residence,

on or at which a regulated facility is located or is being constructed or installed or where records which are required under this article are kept.

- (2) Any duly authorized representative may, at reasonable times, have access to and copy any records required under this article; inspect any monitoring equipment or method; sample for any hazardous material which the owner or operator of such source may be discharging or which may otherwise be located on or underlying the owner's or operator's property; and obtain any other information necessary to determine compliance with permit conditions or other requirements of this article.
- (3) No person shall refuse reasonable entry or access to any authorized representative of the county administrator who requests entry for purposes of inspection and who presents appropriate credentials; nor shall any person obstruct, hamper, or interfere with any such inspection. The owner or operator of the premises shall receive a report, if requested, setting forth all facts found which relate to compliance status.
- (4) Install and sample monitor wells in facilities suspected of causing groundwater pollution. All costs associated with these activities will be borne by the facility if they are proved to be the source of pollution, or the facility is in noncompliance with its operating permit.

(Ord. No. 90-2, § 7, 1-30-90)

Sec. 166-198. Protection of future wellfields.

The prohibitions and restrictions set forth in this article and in regulations promulgated pursuant hereto shall apply to any sites officially designated by the board of county commissioners as future wellfields. Such prohibitions and restrictions shall become effective upon approval by the board of county commissioners of the zone of protection maps for the designated future wellfield. Prior to final action by the board of county commissioners in designating a future wellfield or approving the zone of protection map for those wellfields, all property owners and discernable operating activities within the area affected shall receive notice pursuant to the provisions established by F.S. § 125.66(5).

(Ord. No. 90-2, § 8, 1-30-90)

Sec. 166-199. Appeals.

a) Any applicant or permittee affected by a decision of the county administrator in the enforcement or interpretation of any of the terms or provisions of this article may appeal such decision to the board of county commissioners. Such appeal shall be taken by filing written notice thereof with the clerk of the board of county commissioners, within ten days after notice of the decision of the county administrator.

- (1) Upon receipt of a timely filed appeal, the clerk to the board of county commissioners shall schedule and properly notice a public hearing to be held before the board of county commissioners as soon as practicable.
- (2) At the public hearing, the board of county commissioners may consider the record developed in proceedings before the county administrator, as well as all testimony and evidence presented at the public hearing.
- (3) The board of county commissioners shall make its determination based upon this record in light of the standards and factors outlined in this article and such other factors as the board of county commissioners may deem relevant.
- (4) An applicant or permittee denied relief may seek judicial review of the board of county commissioners' determination by the timely filing of an action in a court of competent jurisdiction.

- (b) Any person may appeal to the board of county commissioners for the following reasons:
- (1) To appeal the county administrator's permit conditions, denial of a permit, general exemption or nondisclosure of a trade secret.
 - (2) To appeal an intent to revoke or revise an operating permit and a general or special exemption.
 - (3) To request a special exemption. When requesting special exemption, written petitions for relief shall be filed with the clerk of the board of county commissioners and the factual basis for the relief requested. Such petitions shall include all materials and documents which are necessary to support the specific relief requested. Except in the case of an application for special exemption, a written request for relief shall be filed with the clerk of the board of county commissioners within 20 days after the date upon which the petitioner receives a permit, or written notice of an intent to revoke or revise his permit, general exemption, or that trade secret protection has been denied. Failure to file within 20 days shall constitute a waiver of the person's right to an administrative hearing. The filing of a petition authorized by this section shall stay all proceedings with respect to the matters that are contained in the petition until there is a final decision of the board of county commissioners as provided in this section.
- (c) Hearing date
- (1) All appeals and applications shall be heard within 45 days of the date from which the petition and supporting data are filed with the clerk of the board of county commissioners. An extension of time for the hearing may be granted by the board for good cause shown.
 - (2) Notice of hearing shall be served upon the applicant or permittee and property owner, if different, by hand delivery or by certified mail, return receipt requested, no less than ten days prior to the hearing. When the owner or responsible individuals are not present or are avoiding service of the notice of hearing, service shall be accomplished by posting copies of the notice of hearing in a conspicuous place on the premises of the facility that is the subject of the appeal.
- (d) The notice of hearing provided for in this section shall contain the following information:
- (1) Name and address of the petitioner and property owner, if different;
 - (2) Description of the facility;
 - (3) Ordinance section (of this article) or regulation section alleged to have been the basis of the denial or proposed revocation or revision;
 - (4) Time, date and place of the hearing;
 - (5) A statement that "Failure to attend may result in an order being issued adverse to your interest";
 - (6) A statement that all parties shall be given the opportunity to present witnesses and evidence in support of their position; and
 - (7) A statement reflecting the requirements of F.S. ch. 286, regarding a verbatim record of the proceedings.

(e) In computing the period of time within which an appeal must be taken from the permit conditions, denial of a permit, general exemption or application for nondisclosure or from intent to revoke or revise a permit, general exemption or special exemption, the day of receipt of notice of such denial or intent to revoke or revise shall not be included. In computing the period of time in which the board of county commissioners must set a hearing date, the date on which the clerk of the board receives the written petition and accompanying information shall not be included. In computing the period within which notice shall be provided prior to the hearing, the date of the hearing shall not be included. The last day of any period of time provided in this article shall be counted, unless it is a Saturday, Sunday or a legal holiday, in which event the period shall run until the end of the next day which is neither a Saturday, Sunday or a legal holiday. Intermediate Saturdays, Sundays and legal holidays shall be excluded in the computation when any period of time prescribed in this article is less than ten days; where such period is ten days or greater, Saturday, Sunday and legal holidays shall be included.

(f) Hearing procedure. The procedure for hearing of appeals under this article shall be as follows:

- (1) All testimony shall be under oath and shall be recorded.
- (2) If there is a proper notice of hearing as provided in subsection (c)(2) of this section, the hearing may proceed in the absence of the alleged petitioner and property owner, if different.
- (3) Irrelevant, immaterial, or unduly repetitious evidence shall be excluded, but all other evidence of a type commonly relied upon by reasonably prudent persons in the conduct of their affairs shall be admissible, whether or not such evidence shall be admissible in a trial in the courts of the state. Any part of the evidence may be received in written form. Hearsay evidence may be used for the purpose of supplementing or explaining other evidence, but it shall not be sufficient in itself to support a finding unless it would be admissible over objection in civil actions.
- (4) Documentary evidence may be received in the form of a copy or excerpt if the original is not readily available.
- (5) The rules of privilege shall be effective to the same extent that they are now or hereafter may be recognized in civil actions.
- (6) Each party shall have the following rights:
 - a. To be represented by counsel;
 - b. To call and examine witnesses;
 - c. To introduce Exhibits;
 - d. To cross examine opposing witnesses on any relevant matter, even though the matter was not covered under direct examination;
 - e. To impeach any witness, regardless of which party called the witness to testify;
 - f. To rebut the evidence.
- (7) Any interested party or person whose substantial interests are affected may make application, and upon good cause shown, may be allowed by the board of county commissioners to intervene in a pending proceeding.
- (8) In an appeal of an intent to revoke or revise a special exemption or general exemption that also requires an operating permit under the terms of this article, the appeal of both the intent to revoke or revise the applicable exemption and the accompanying permit shall be consolidated into one hearing.

(g) At all hearings under this article, the board of county commissioners shall hear and consider all facts material to the appeal or application for special exemption and shall thereafter issue a decision based on the competent and substantial evidence presented at the hearing. Such decision may affirm, reverse or modify the action or proposed action of the county administrator.

(h) The decision of the board of county commissioners, as applicable, shall be the final administrative action on behalf of the county administrator and the county. Any person who is a party to the proceeding before the board of county commissioners, if applicable, may appeal to the circuit court of the county in accordance with applicable Florida Appellate Rules.

(Ord. No. 89-69, § IX, 12-19-89; Ord. No. 90-62, § 7, 7-24-90; Ord. No. 92-67, § 7, 10-27-92)

Sec. 166-200. General exemptions.

(a) Facilities and activities qualifying for a general exemption include public utilities, commercial lawn maintenance businesses that use regulated substances, parks, maintenance of office facilities, and retail sales.

- (1) A general exemption application and operating permit in compliance with the provisions of section 166-195(d) shall be required for any nonresidential activity claiming a general exemption under this section and shall be filed with the county administrator.
- (2) Such application shall contain a concise statement by the applicant detailing the circumstances upon which the applicant believes would entitle him to an exemption.
- (3) A fee as listed in Exhibit C shall be filed with the application to defray the costs of processing such application.
- (4) Within 30 working days of receipt of an application for general exemption, the county administrator shall inform the applicant whether such application contains sufficient information for a proper determination to be made. If the application is found to be insufficient, then the county administrator shall provide to the applicant a written statement by certified mail or hand delivery requesting the additional information required. The applicant shall inform the county administrator within ten working days of the date of the written statement of his intent to furnish the information. The applicant has 30 days to furnish the required information after so informing the county administrator. The county administrator shall have 90 working days from either the rendering of a sufficiency determination or receipt of additional information making an application sufficient to make a decision.

(b) Existing fire, police, emergency medical services and county emergency management center facilities are required to obtain an operating permit and general exemption.

(c) Utilities as defined in this article shall be exempt from the zone of protection prohibitions as set forth in section 166-195(c). However, an operating permit and special exemption shall be obtained pursuant to section 166-195(d) for the refueling facilities within the zone of protection.

(d) The transportation of any regulated substance through the zone of protection shall be exempt from the provisions of this article, provided the transporting motor vehicle is in continuous transit. The transport of such substances through existing permanent pipelines is also exempt, provided that the currently authorized use or uses are not changed and provided that leak detection and monitoring as approved by the county administrator are employed. No general exemption or operating permit application is required except that an operating permit is required to establish the leak detection and monitoring requirements for such existing pipelines.

(e) The use in a residential vehicle, commercial lawn service vehicle or residential lawn maintenance equipment of any regulated substance solely as fuel in that vehicle or equipment fuel tank or as lubricant in that vehicle or equipment shall be exempt from the provisions of this article. No general exemption or operating permit application is required.

(f) The commercial or residential application on residential lawn or commercial landscaping of those regulated substances used as pesticides, herbicides, fungicides, and rodenticides in recreation, agriculture, pest control and aquatic weed control activities shall be exempt from the provisions of this article, provided that:

- (1) In the zone of protection, the application is in strict conformity with the use requirement as set forth in the substances' EPA registries and as indicated on the containers in which the substances are sold.
- (2) In the zone of protection, the application is in strict conformity with the requirements as set forth in F.S. chs. 482 and 487, and chapters 5E-2 and 5E-9, Florida Administrative Code.
- (3) In the zone of protection, the application of any of the pesticides, herbicides, fungicides, and rodenticides shall be flagged in the records of the certified operator supervising the use. The certified operator shall provide specific notification in writing to the applicators under his supervision that they are working at a site located in the zone of protection for which particular care is required. Records shall be kept of the date and amount of these substances applied at each location and such records shall be available for inspection at reasonable times by the county administrator.
- (4) In the zone of protection, the pesticides, herbicides, fungicides, and rodenticides for lawn, golf courses or agricultural application shall not be handled during application in a quantity exceeding 700 gallons of formulation.
- (5) All nonresidential applicators of pesticides, herbicides, fungicides, and rodenticides who apply those substances within the zones of protection shall obtain an operating permit covering all application operations under one permit using these materials and shall comply with all the requirements of section 166-195.

This exemption applies only to the application of pesticides, herbicides, fungicides, and rodenticides.

(g) Retail sales establishments in the zone of protection that store and handle regulated substances for resale in their original unopened containers shall be exempt from the prohibition in the zone of protection provided that those establishments obtain an operating permit pursuant to the provisions of section 166-195.

(h) Office uses, including the use of regulated substances for the maintenance and cleaning of office buildings in volumes less than ten gallons, shall be exempt from the provisions of this article. No general exemption or operating permit applications are required.

(i) The activities of constructing, repairing or maintaining any facility or improvement on lands within the zone of protection shall be exempt from the provisions of this article, provided that all contractors, subcontractors, laborers, material men and their employees when using, handling, storing or producing regulated substances in the zone of protection use those applicable best management practices set forth in Appendix D, incorporated in this article. No general exemption or operating permit applications are required.

(j) Residential development greater than 25 units shall be required to file a general exemption application and an operating permit application with the county administrator; however, the annual renewal application is not required.

(Ord. No. 89-69, § X, 12-19-89; Ord. No. 90-62, § 8, 7-24-90; Ord. No. 92-67, §§ 8, 9, 10-27-92)

Sec. 166-201. Special exemptions.

(a) An affected person in the zone of protection may petition the board of county commissioners for a special exemption from the prohibitions and monitoring requirements set out in section 166-195. In order to obtain such an exemption such person must demonstrate by a preponderance of competent, substantial evidence that:

- (1) Special or unusual circumstances and adequate technology exist to isolate the facility or activity from the potable water supply.
- (2) In granting the special exemption, the board of county commissioners may prescribe any additional appropriate conditions and safeguards which are necessary to protect the wellfield.

(b) Activities claiming special exemption with adequate technology to isolate the facility or activity from the potable water supply and protect the wellfield must submit:

- (1) A special exemption application claiming special or unusual circumstances and adequate protection technology shall be filed with the county administrator. It shall be signed by the applicant and by a professional engineer and certified geologist registered in the state.
- (2) Such application shall contain a concise statement by the applicant detailing the circumstances which the applicant feels would entitle him to an exemption pursuant to subsection (b)(1) of this section.
- (3) A nonrefundable fee as listed in Exhibit C shall be filed with the application to defray the costs of processing such application.
- (4) The application for special exemption shall contain but not be limited to the following elements:
 - a. A description of the situation at the site requiring isolation from the wellfield, including:
 1. A list of the regulated substances in use at the site;
 2. A site plan of the facility including all storage, piping, dispensing, shipping, etc., facilities;
 3. What operations at the facility involve regulated substances which must be isolated from the wellfields;
 4. The location of all operations involving regulated substances;
 5. A sampling and analysis of the groundwater on the site of the activity seeking a special exemption shall be performed to the satisfaction of the county to determine if any regulated substances are already present which constitute a threat to the water supply;
 6. An analysis of the affected well showing whether or not such well is already contaminated by any regulated substances and the extent of such contamination;
 7. A hydrogeologic assessment of the site which shall address, at a minimum, soil characteristics and groundwater levels, directional flow, and water quality and which shall be performed by a registered geologist, certified by the state.
 - b. A technical proposal to achieve the required isolation, including;

1. Components to be used and their individual functions;
 2. Systems tying the components together
 3. A discussion and documentation, such as published technical articles, substantiating the performance and reliability of the components individually and the system as a whole; if the system has not been field tested, a discussion and laboratory test documentation to substantiate the proposed performance and reliability of the system;
 4. Details of the specific plans to install the system at the site
- c. Testing procedures: If the proposed system does not have a proven history of successful in-field operation, it may still be proposed using proven components. A test plan for the system as installed shall be provided to prove that the proposed system works in the field.
 - d. A technical proposal for backup detection of regulated substances that may elude the isolation system and escape to outside a perimeter to be established by the county administrator. Such proposal shall include emergency measures to be initiated in case of escape of regulated substances.
 - e. Criteria for success: Site-specific, system performance criteria shall be proposed to ascertain the success of the system. Such criteria shall include but shall not be limited to:
 1. Performance;
 2. Reliability;
 3. Level of maintenance;
 4. Level of sensitivity to regulated substances;
 5. Effect of rain, flood, power failure or other natural disaster.
 - f. Precautions in event of failure: The applicant shall provide information on the on-site availability of substance removal technologies sufficient to remediate any introduction of regulated substances into the water table at the site. Where water is removed from on-site wells during the remedial process, a plan shall be proposed for the disposal of such water.
 - g. A closure plan shall be provided in the event the system does not prove successful in the testing required by subsection (b)(4)c of this section.
 - h. Any other reasonable information deemed necessary by the county water system due to site-specific circumstances.
- (5) Within 30 working days of receipt of an application for special exemption, the county administrator shall inform the applicant whether such application contains sufficient information for a proper determination to be made. If the application is found to be insufficient, then the county administrator shall provide to the applicant a written statement by certified mail or hand delivery requesting the additional information required. The applicant shall inform the county administrator within ten working days of the date of the written statement of his intent to furnish the information. The applicant has 30 days to furnish the required information or have the application processed as it stands. At the end of such 30-day period, the county administrator

shall have 14 days to inform the board of county commissioners of such application and shall transfer all information accompanying the application to the board of county commissioners, who shall then proceed with the hearing procedures as provided under section 166-199.

(c) Granting special exemptions:

- (1) Any special exemption to this article granted by the board of county commissioners shall be subject to the applicable conditions of sections 166-195 and 166-196 and any other reasonable and necessary special conditions imposed by the board of county commissioners. An operating permit shall be issued by the department with the applicable conditions of sections 166-195 and 166-196 and any other reasonable and necessary special conditions imposed by the board of county commissioners. Such special exemptions shall be subject to revocation or revision by the department for violation of any condition of such special exemption by first issuing a written notice of intent to revoke or revise by certified mail, return receipt requested, or hand delivery. Upon revocation or revision, the activity will immediately be subject to the enforcement provisions of this article.
- (2) Special exemptions for the zone of protection are for existing nonresidential facilities only. No new nonresidential activity shall be permitted into the zone of protection after February 17, 1990, if the new nonresidential facility stores, handles, produces, disposes of, or uses any regulated substance.

(Ord. No. 89-69, § XI, 12-19-89; Ord. No. 90-62, § 9, 7-24-90; Ord. No. 92-67, § 7, 10-27-92)

Sec. 166-202. Trade secrets.

The department shall not disclose any trade secrets of the permittee under this article that are exempted from such disclosure by federal or state law; provided, however, that the burden shall be on the permittee to demonstrate entitlement to such nondisclosure. Decisions by the county administrator as to such entitlement shall be subject to challenge by the permittee by filing a petition with the county administrator pursuant to section 166-199.

(Ord. No. 89-69, § XII, 12-19-89; Ord. No. 90-62, § 10, 7-24-90)
Secs. 166-203--166-240. Reserved.



APPENDIX A

GENERIC SUBSTANCES LIST

The Generic Substance List is provided for informational and regulatory purpose and may be amended from time to time by the Board of County Commissioners. Some of the regulated substances are listed below. For additional regulated substances, see Appendix E of the Wellhead Protection Ordinance.

Acids and basic cleaning solutions
Antifreeze and coolants
Arsenic and arsenic compounds
Bleaches and peroxides
Brake and transmission fluids
Brine Solutions
Casting and foundry chemicals
Caulking agents and sealants
Cleaning solvents
Corrosion and rust prevention solutions
Cutting fluids
Degreasing solvents
Disinfectants
Electroplating solutions
Explosives
Fertilizers
Fire extinguishing chemicals
Food processing wastes
Formaldehyde
Fuels and additives
Glues, adhesives and resins
Greases
Hydraulic fluids
Indicators
Industrial and commercial janitorial supplies
Industrial sludges and stillbottoms
Inks, printing and photocopying chemicals
Laboratory chemicals
Liquid storage batteries

Medical, pharmaceutical, dental, veterinary and hospital solutions
Mercury and mercury compounds
Metal finishing solutions
Oils
Paints, primers, thinners, dyes, stains, wood preservatives and varnishing and cleaning compounds
Painting solvents
PCBs
Pesticides and herbicides
Plastic resins, plasticizers and catalysts
Photo development chemicals
Poisons
Polishes
Pool chemicals
Processed dust and particulates
Radioactive sources
Reagents and standards
Refrigerants
Roofing chemicals and sealers
Sanitizers, disinfectants, bactericides and algacides, soaps, detergents and surfactants
Solders and fluxes
Stripping compounds
Tanning industry chemicals
Transformer and capacitor oils/fluids
Water and wastewater treatment chemicals

APPENDIX B

OPERATING AND CLOSURE PERMITS*

Zone of Protection

Cash Bond	\$20,000
Rate Bond	\$20,000
Letters of Credit	\$20,000

*Amounts reflected on this table are for each Operating and Closure Permit issued and may be adjusted by the Pinellas County Risk Management Department upon further risk/loss analysis.

APPENDIX C

FEE SCHEDULE

1. FILING FEE - All applicants for a Wellhead Protection Operating Permit shall pay a nonrefundable filing fee of twenty-five dollars (\$25.00). The filing fee shall be applied against other fees prescribed for the issuance of a permit. The filing fee shall be paid prior to acceptance of the permit application for review.
2. WELLHEAD PROTECTION OPERATING PERMIT FEE - The fee for a Wellhead Protection Operating Permit under this regulation shall be twenty-five dollars (\$25.00). The Wellhead Protection Operating Permit shall be used to defray the cost of administering this Ordinance.
3. CLOSURE PERMIT FEE - The fee for a Closure Permit under this regulation shall be one hundred dollars (\$100.00).
4. PERMIT TRANSFER FEE - The fee for transfer of Wellhead Protection Operating Permit shall be twenty-five dollars (\$25.00) to defray the cost of processing the transfer.
5. SPECIAL EXEMPTION FEE - Any person seeking a special exemption shall pay a fee of two hundred dollars (\$200) to defray the cost of processing the exemption request.
6. ANNUAL RENEWAL LICENSE FEE - Beginning March 1, 1991, an annual renewal license fee shall be collected to defray cost of administering of this Ordinance. The fee shall be twenty-five dollars (\$25.00) per year.
7. GENERAL EXEMPTION FEE - Any person seeking a general exemption shall pay a fee of one hundred dollars (\$100.00) to defray the cost of processing the exemption request.
8. SAMPLING FEE - The required groundwater quality sampling of permitted facilities within the Zone of Protection will be assessed a fee of \$50.00 /sample by the Pinellas County Utilities Department to withdraw and transport each groundwater sample. The cost of the sampling will be assessed to the permittee.
9. WATER QUALITY ANALYSIS FEE - The cost for cash analysis to be borne by the permittee, will be seven hundred dollars (\$700) /sample.

APPENDIX D

“BEST MANAGEMENT PRACTICES” FOR THE CONSTRUCTION INDUSTRY

- A. The general contractor, or if none, the property owner, shall be responsible for assuring that each contractor or subcontractor evaluates each site before construction is initiated to determine if any site conditions may pose particular problems for the handling of any regulated substances. For instance, handling regulated substances in the proximity of water bodies or wetlands may be improper.
- B. If any regulated substances are stored on the construction site during the construction process, they shall be stored in a location and manner which will minimize any possible risk of release to the environment. Any storage container of 30 gallons, or 250 pounds, or more containing regulated substances shall have constructed below them an impervious containment system constructed of material of sufficient thickness, density and composition that will prevent the discharge to the land, groundwaters, or surface waters of any pollutant which may emanate from said storage tank or tanks. Each containment system shall be able to contain 150% of the contents of all storage containers above the containment system.
- C. Each contractor shall familiarize himself with the manufacturer's safety data sheet supplied with each material containing a regulated substance and shall be familiar with procedures required to contain and clean up any releases of the regulated substance. Any tools or equipment necessary to accomplish same shall be available in case of a release.
- D. Upon completion of construction, all unused and regulated waste substances and containment systems shall be removed from the construction site by the responsible contractor and shall be disposed of in a proper manner as prescribed by law.

APPENDIX E

PRIORITY POLLUTANTS REFERRED TO IN
THIS ORDINANCE REFERENCING 17-22 F.A.C.

FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
GROUND WATER GUIDANCE CONCENTRATIONS*
FEBRUARY 1989

<u>CAS #</u>	<u>Parameter</u>	<u>Guidance* Concentration (ug/L)</u>	<u>Practical Quantitation Level (ug/L)</u>	<u>Basis/ Comment</u>
83-32-9	Acenaphthene	20	10	Organoleptic (AWQCD)
208-96-8	Acenaphthylene	10	10	PQL
67-64-1	Acetone	700	5-10 A	IRIS
5094-66-6	Acifluorfen (Blazer)	10	5-10 A	PQL / $1\text{ug/L} = 10^{-6}$ cancer risk (H.A.)
107-02-8	Acrolein (Propenal)	110	5	EPA PPCL
79-06-1	Acrylamide (2-Propeneamide)	1	1	PQL / $0.01\text{ug/L} = 10^{-6}$ cancer risk (CAG)
107-13-1	Acrylonitrile	2.5	2.5	PQL / $0.063\text{ug/L} = 10^{-6}$ cancer risk (AWQCD)
15972-60-8	Alachlor	1.5	1	Lifetime Health Adv.
116-06-3	Aldicarb (Temik)	10	5	Lifetime Health Adv.
	Aldicarb sulfoxide	10	5	Lifetime Health Adv.
1646-88-4	Aldicarb sulfone	40 **	5	Lifetime Health Adv.
309-00-2	Aldrin	0.05	0.05	PQL / RPC= 0.013 ug/L
	Alpha, gross ****	15 pCi/L		Primary D.W. Standard
834-12-8	Ametryn	60	5-10 A	Lifetime Health Adv.
7773-06-0	Ammonium sulfamate	2,000	5-10 X	Lifetime Health Adv.
120-12-7	Anthracene	10	10	PQL
7440-36-0	Antimony	29	20	EPA PPCL (ADI)
"	Arsenic ****	50	5	Primary D.W. Standard
1332-21-4	Asbestos ***	7 million fibers/L	0.1 million fibers/L	Proposed EPA MCL
1912-24-9	Atrazine	3	0.25	Lifetime Health Adv.
	Barium ****	1,000	500	Primary D.W. Standard
114-26-1	Baygon (Propoxur)	10	5-10 A	PQL / $3\text{ug/L} = \text{Lifetime}$ Health Advisory
25057-89-0	Bentazon	20	5-10 A	Lifetime Health Adv.
71-43-2	Benzene ****	1	1	Primary D.W. Standard
	Benzenehexachloride (See Hexachloro- cyclohexane)			
92-87-5	Benzidine	10	10	PQL / $0.00015\text{ug/L} = 10^{-6}$ cancer risk (AWQCD)
56-55-3	Benzo(a)anthracene	10	10	PQL
205-99-2	Benzo(b)fluoranthene	10	10	PQL
207-08-9	Benzo(k)fluoranthene	10	10	PQL

*The concentrations in this table are only to be used as a screening guideline for ground water contamination. These concentrations are not standards and without further justification can not be used as standards.

CAS #	Parameter	Practical Guidance* Quantitation		Basis/ Comment
		Concentration (ug/ L)	Level (ug/ L)	
191-24-2	Benzo(g,h,i)perylene	10	10	PQL
50-32-8	Benzo(a)pyrene	10	10	PQL / $0.003\text{ug/L} = 10^{-6}$ cancer risk (AWQCD)
7440-41-7	Beryllium	5	5	PQL / $0.004\text{ug/L} = 10^{-6}$ cancer risk (AWQCD)
	BHC (See Hexachloro- cyclohexane)			
92-52-4	Biphenyl	10	5-10 A	PQL / $0.5\text{ug/L} =$ organoleptic (RPC)
314-40-9	Bromacil	90	10	Lifetime Health Adv.
75-27-4	Bromodichloromethane (See Trihalomethane)			
75-25-2	Bromoform (See Trihalomethane)			
74-83-9	Bromomethane (Methyl bromide)	20	10	RPC
101-55-3	4-Bromophenyl phenyl ether	10	10	PQL
78-93-3	2-Butanone (See Methyl ethyl ketone)			
123-86-4	n-Butyl acetate	43	5-10 X	Organoleptic (RPC)
2008-41-5	Butylate	700	5-10 A	Lifetime Health Adv.
85-68-7	Butyl benzyl phthalate	1,400	10	IRIS
85-70-1	Butyl phthalyl butyl glycolate	120,000	5-10 A	Water solubility limit (AWQCD ADI=350,000ug/L)
	Cadmium ****	10	10	Primary D.W. Standard
63-25-2	Carbaryl (Sevin)	700	5	Lifetime Health Adv.
1563-66-2	Carbofuran	36	5	Lifetime Health Adv.
108-95-2	Carbolic acid (See Phenol)			
56-23-5	Carbon tetrachloride **** (Tetrachloromethane)	3	1	Primary D.W. Standard
5234-68-4	Carboxin	700	5-10 A	Lifetime Health Adv.
133-90-4	Chloramben	100	5-10 A	Lifetime Health Adv.
57-74-9	Chlordane	0.1	0.1	PQL / $0.027\text{ug/L} = 10^{-6}$ cancer risk (H.A.)
	Chloride ****	250,000	1000	Secondary D.W. Std.
108-90-7	Chlorobenzene	10	1	Organoleptic (H.A.)
124-48-1	Chlorodibromomethane (See Trihalomethane)			

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CAS #	Parameter	Guidance* Quantitation		Basis/ Comment
		Concentration (ug/ L)	Level (ug/ L)	
106-89-8	1-Chloro-2,3-epoxypropane (See Epichlorohydrin)			
75-00-3	Chloroethane (Ethyl chloride)	6,300	2.5	RPC
111-91-1	bis(2-Chloroethoxy) methane	10	10	PQL
75-01-4	Chloroethylene **** (Vinyl chloride)	1	1	Primary D.W. Standard
111-44-4	bis(2-Chloroethyl)ether (Dichloroethyl ether)	10	10	PQL / $0.031 \mu\text{g/ L} = 10^{-6}$ cancer risk (AWQCD)
110-75-8	2-Chloroethyl vinyl ether (Vinyl 2- chloroethyl ether)	1	1	PQL
67-66-3	Chloroform (See Trihalomethane)			
108-60-1	bis(2-Chloroisopropyl) ether	10	10	PQL / $7 \mu\text{g/ L} = \text{EPA}$ PPCL ADI
74-87-3	Chloromethane (Methyl chloride)	3,800	1	EPA PPCL (ADI)
542-88-1	bis(Chloromethyl) ether	10	5-10 A	PQL / $3.8 \times 10^{-6} \mu\text{g/ L} =$ 10^{-6} cancer risk (AWQCD)
59-50-7	4-Chloro-3-methyl phenol (p-chloro- m-cresol)	3,000	10	Organoleptic (AWQCD)
94-74-6	4-Chloro-2-methyl- phenoxy acetic acid (See MCPA)			
91-58-7	2-Chloronaphthalene	10	10	PQL
108-43-0	3-Chlorophenol	10	10	PQL / $0.1 \mu\text{g/ L} =$ organoleptic (AWQCD)
106-48-9	4-Chlorophenol	10	10	PQL / $0.1 \mu\text{g/ L} =$ organoleptic (AWQCD)
7005-72-3	4-Chlorophenyl phenyl ether	10	10	PQL
76-06-2	Chloropicrin	7.3	5	Organoleptic (RPC)
1897-45-6	Chlorothalonil (Bravo)	2	1	10^{-6} cancer risk, Health Advisory
	Chromium ****	50	50	Primary D.W. Standard
218-01-9	Chrysene	10	10	PQL
	Color ****	15 (color units)		Secondary D.W. Std.
	Copper ****	1000	100	Secondary D.W. Std.
21725-46-2	Cyanazine	30	30	PQL / $10 \mu\text{g/ L} = \text{Lifetime}$ Health Advisory

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CAS #	Parameter	Guidance*	Practical	Basis/ Comment
		Concentration (ug/ L)	Quantitation Level (ug/ L)	
57-12-5	Cyanide	154	40	Lifetime Health Adv.
94-75-7	2,4-D ****	100	5	Primary D.W. Standard
861-32-1	Dacthal (DCPA)	4,000	1	Lifetime Health Adv.
75-99-0	Dalapon (2,2-Dichloro- propionic acid)	200	5-10 A	Lifetime Health Adv.
50-29-3	DOT	0.1	0.1	PQL / $0.004 \text{ ug/L} = 10^{-6}$ cancer risk (AWQCD)
303-16-4	Diallate	10	10	PQL / $0.045 \text{ ug/L} = 10^{-6}$ cancer risk (AWQCD)
333-41-5	Diazinon	10	5-10 A	PQL / $0.6 \text{ ug/L} =$ Lifetime Health Adv.
53-70-3	Dibenzo(a,h) anthracene	10	10	PQL
124-48-1	Dibromochloromethane (See Trihalomethane)			
96-12-8	1,2-Dibromo-3- chloropropane (DBCP)	0.025	0.025	Lifetime Health Adv.
106-93-4	1,2-Dibromoethane **** (Ethylene Dibromide, EDB)	0.02	0.02	Primary D.W. Standard
84-74-2	Di-n-butyl phthalate	700	10	IRIS
918-00-9	Dicamba	200	1	Lifetime Health Adv.
95-50-1	o-Dichlorobenzene (1,2-Dichlorobenzene)	10	2	Organoleptic (H.A.)
541-73-1	m-Dichlorobenzene (1,3-Dichlorobenzene)	10	2	Organoleptic (H.A.)
106-46-7	p-Dichlorobenzene **** (1,4-Dichlorobenzene)	75	2	Primary D.W. Standard
91-94-1	3,3-Dichlorobenzidine	20	20	PQL / $0.021 \text{ ug/L} = 10^{-6}$ cancer risk (AWQCD)
75-27-4	Dichlorobromomethane (See Trihalomethane)			
75-71-8	Dichlorodifluoro- methane (Freon 12)	1,400	5	IRIS
75-34-3	1,1-Dichloroethane	2,400	1	RPC
107-06-2	1,2-Dichloroethane **** (Ethylene dichloride)	3	1	Primary D.W. Standard
75-35-4	1,1-Dichloroethylene **** (Vinylidene chloride)	7	1	Primary D.W. Standard
156-59-2	cis-1,2-Dichloro- ethylene	4.2	1	Organoleptic (RPC)
156-60-5	trans-1,2-Dichloro- ethylene	4.2	1	Organoleptic (RPC)

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CAS #	Parameter	Guidance* Quantitation		Basis/ Comment
		Concentration (ug/ L)	Level (ug/ L)	
111-44-4	Dichloroethyl ether (See bis(2-Chloro-ethyl) ether)			
108-60-1	Dichloroisopropyl ether (See bis(2-Chloroisopropyl) ether)			
75-09-2	Dichloromethane (See Methylene chloride)			
542-88-1	Dichloromethyl ether (See bis(Chloromethyl ether)			
576-24-9	2,3-Dichlorophenol	10	10	PQL / 0.04ug/ L = organoleptic (AWQCD)
120-83-2	2,4-Dichlorophenol	10	10	PQL / 0.3ug/ L = organoleptic (AWQCD)
583-78-8	2,5-Dichlorophenol	10	10	PQL / 0.5ug/ L = organoleptic (AWQCD)
87-65-0	2,6-Dichlorophenol	10	10	PQL / 0.2ug/ L = organoleptic (AWQCD)
95-77-2	3,4-Dichlorophenol	10	10	PQL / 0.3ug/ L = organoleptic (AWQCD)
78-87-5	1,2-Dichloropropane	1	1	PQL / 0.56 ug/ L=10 ⁻⁸ cancer risk (H.A.) ₆
542-75-6	1,3-Dichloropropene (DCP, Telone)	1	1	PQL / 0.2 ug/ L=10 ⁻⁶ cancer risk (H.A.) ₋₆
60-57-1	Dieldrin	0.05	0.05	PQL / 0.002ug/ L=10 ⁻⁶ cancer risk (H.A.)
117-81-7	Di(2-ethylhexyl) phthalate	14	10	RPC
84-66-2	Diethyl phthalate	5,600	10	IRIS
239-16-1	Dimethrin	2,000	5-10 A	Lifetime Health Adv.
105-67-9	2,4-Dimethyl phenol (2,4-Xylenol)	400	10	Organoleptic (AWQCD)
131-11-3	Dimethyl phthalate	70,000	10	EPA PPCL (ADI)
534-52-1	4,6-Dinitro-o-cresol (2-Methyl-4,6-dinitrophenol)	50	50	PQL
51-28-5	2,4-Dinitrophenol	70	50.	EPA PPCL (ADI)
121-14-2	2,4-Dinitrotoluene	10	10	PQL / 0.11ug/ L=10 ⁻⁶ cancer risk (AWQCD)
508-20-2	2,6-Dinitrotoluene	10	10	PQL

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CAS #	Parameter	Guidance*	Practical	Basis/ Comment
		Concentration (ug/ L)	Quantitation Level (ug/ L)	
88-85-7	Dinoseb	7	0.5	Lifetime Health Adv.
117-84-0	Di-n-octyl phthalate	10	10	PQL
123-91-1	p-Dioxane (1,4-Dioxane)	10	5-10 A	PQL / 7ug/ L = 10^{-6} cancer risk (CAG)
1746-01-6	Dioxin (See 2,3,7,8-Tetra chlorodibenzo-p-dioxin)			
957-51-7	Diphenamid	200	5-10 A	Lifetime Health Adv.
122-66-7	1,2-Diphenyl hydrazine	10	10	PQL / 0.045ug/ L = 10^{-6} cancer risk (AWQCD)
298-04-4	Disulfoton	10	5-10 A	PQL / 0.3 ug/ L = Lifetime Health Adv.
330-54-1	Diuron	10	5-10 A	Lifetime Health Adv.
15-29-7	Endosulfan (alpha + beta)	0.4	0.05	IRIS
1031-07-8	Endosulfan sulfate	0.3	0.3	PQL
145-73-3	Endothall	100	5-10 X	Lifetime Health Adv.
72-20-8	Endrin ****	0.2	0.03	Primary D.W. Standard
7421-93-4	Endrin aldehyde	0.1	0.1	PQL
106-89-8	Epichlorohydrin (unstable in H ₂ O)	10	5-10 A	PQL / 3.5ug/ L = 10^{-6} cancer risk (H.A.)
75-21-8	1,2-Epoxyethane (See Ethylene oxide)			
563-12-2	Ethion	14	0.5	RPC
141-78-6	Ethyl acetate	100	5-10 X	Organoleptic (RPC)
100-41-4	Ethylbenzene	2	2	PQL / 1.6 ug/ L = organoleptic (RPC)
75-00-3	Ethylchloride (See Chloroethane)			
166-93-4	Ethylene dibromide **** (EDB, 1,2-Dibromo- ethane)	0.02	0.02	Primary D.W. Standard
107-06-2	Ethylene dichloride **** (1,2-Dichloroethane)	3	1	Primary D.W. Standard
107-21-1	Ethylene glycol	7,000	5-10 X	Lifetime Health Adv.
75-21-8	Ethylene oxide (unstable in H ₂ O)	10	5-10 A	PQL / 0.028ug/ L = 10^{-6} cancer risk (EPA PPCL)
96-45-7	Ethylene thiourea (2-imidazoli- dinethione)	0.5	0.5 X	PQL / 0.2 ug/ L = 10^{-6} cancer risk (H.A.)
84-72-0	Ethyl phthalate ethyl glycolate	17,500	5-10 A	EPA PPCL (ADI)
22224-92-6	Fenamiphos	10	5-10 X	PQL / 2 ug/ L = Lifetime Health Adv.

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CAS #	Parameter	Guidance*	Practical Quantitation	Basis/ Comment
		Concentration (ug/ L)	Level (ug/ L)	
2164-17-2	Fluometuron	90	50	Lifetime Health Adv.
206-44-0	Fluoranthene (Idryl)	42	10	EPA PPCL (ADI)
86-73-7	Fluorene	10	10	PQL
	Fluoride ****	4,000	10	Primary D.W. Standard
	Fluoride ****	2,000	10	Secondary D.W. Std.
75-69-4	Fluorotrichloromethane (See Trichloromono fluoromethane)			
	Foaming agents ****	500	100	Secondary D.W. Std.
944-22-9	Fonofos	10	5-10 A	Lifetime Health Adv.
50-00-0	Formaldehyde	50	50	PQL / 4.1 ug/ L = RPC
1071-83-6	Glyphosate (Roundup)	700	25	Lifetime Health Adv.
76-44-8	Heptachlor	0.076	0.05	10 ⁻⁶ cancer risk, H.A.
1024-57-3	Heptachlor epoxide	0.1	0.1	PQL / 0.038 ug/ L = 10 ⁻⁶ cancer risk (H.A.)
118-74-1	Hexachlorobenzene (HCB)	10	10	PQL / 0.02ug/ L = 10 ⁻⁶ cancer risk (CAG)
87-68-3	Hexachlorobutadiene	10	10	PQL / 0.45ug/ L = 10 ⁻⁶ cancer risk (AWQCD)
319-84-6	alpha-Hexachloro- cyclohexane (BHC)	0.05	0.05	PQL / 0.0035ug/ L = 10 ⁻⁶ cancer risk (CAG)
319-85-7	beta-Hexachloro- cyclohexane (BHC)	0.05	0.05	PQL / 0.01ug/ L = 10 ⁻⁶ cancer risk (CAG)
58-89-9	gamma-Hexachloro- cyclohexane **** (Lindane)	4	0.05	Primary D.W. Standard
319-86-8	delta-Hexachloro- cyclohexane (BHC)	0.05	0.05	PQL
77-47-4	Hexachlorocyclo- pentadiene	10	10	PQL / 1 ug/ L = organoleptic (AWQCD)
67-72-1	Hexachloroethane	10	10	PQL / 3.4ug/ L = 10 ⁻⁶ cancer risk (AWQCD)
110-54-3	n-Hexane	10	5-10 A	PQL / 6.4ug/ L = organoleptic (RPC)
51235-04-2	Hexazinone (Velpar)	200	5	Lifetime Health Adv.
206-44-0	Idryl (See Fluoranthene)			
96-45-7	2-Imidazoli- dinethione (See Ethylene thiourea)			
193-39-5	Indeno(1,2,3-cd) pyrene	10	10	PQL
	Iron ****	300	150	Secondary D.W. Std.

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CAS #	Parameter	Practical Guidance* Quantitation		Basis/ Comment
		Concentration (ug/ L)	Level (ug/ L)	
78-59-1	Isoacetophorone (See Isophorone)			
78-59-1	Isophorone	1,050 #	10	AWQCD (ADI)
98-82-8	Isopropyl benzene (Cumene)	10	5-10 A	PQL / 0.8ug/ L = organoleptic (RPC)
	Lead ****	50	50	Primary D.W. Standard
58-89-9	Lindane ****	4	0.05	Primary D.W. Standard
330-55-2	Linuron	22	0.05	RPC
123-33-1	Maleic hydrazide	4,000	5-10X	Lifetime Health Adv.
1327-38-2	Maneb	75	75	PQL / 14 ug/ L = RPC
	Manganese ****	50	25	Secondary D.W. Std.
94-74-6	MCPA (4-Chloro-2- methylphenoxy acetic acid)	1,000	1,000 A	PQL / 4 ug/ L = Lifetime Health Adv.
	Mercury ****	2	0.2	Primary D.W. Standard
1265-92-6	Methamidophos	18	5-10 X	RPC
752-77-5	Methomyl	200	50	Lifetime Health Adv.
72-43-5	Methoxychlor ****	100	0.5	Primary D.W. Standard
74-83-9	Methyl bromide (See Bromomethane)			
74-87-3	Methyl chloride (See Chloromethane)			
534-52-1	2-Methyl-4,6-dinitro- phenol (See 4,6-Di- nitro-o-cresol)			
75-09-2	Methylene chloride (Dichloromethane)	5	1	10 ⁻⁶ cancer risk (Health Advisory)
78-93-3	Methyl ethyl ketone (MEK, 2-Butanone)	170 #	10	Lifetime Health Adv.
60-34-4	Methyl hydrazine	10	5-10 A	PQL / 0.03ug/ L=10 ⁻⁶ cancer risk (EPA PPCL)
108-10-1	Methyl isobutyl ketone (4-Methyl-2-pentanone)	350 #	5	IRIS
298-00-0	Methyl parathion	10	5-10 A	PQL / 2ug/ L = Lifetime Health Adv.
218-45-2	Metolachlor	100	5-10 A	Lifetime Health Adv.
087-64-9	Metribuzin	200	2	Lifetime Health Adv.
385-85-5	Mirex	3.5	0.1	RPC
91-20-3	Napthalene	10	10	PQL / 6.8ug/ L = organoleptic (RPC)
440-02-0	Nickel	150	50	Lifetime Health Adv.
	Nitrate (as N) ****	10,000	5	Primary D.W. Standard
	Nitrite (as N)	1,000	100	Health Advisory

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CAS #	Parameter	Guidance* Quantitation		Basis/ Comment
		Concentration (ug/ L)	Level (ug/ L)	
98-95-3	Nitrobenzene	30	10	Organoleptic (AWQCD) PQL
88-75-5	2-Nitrophenol (o-Nitrophenol)	20	20	
100-02-7	4-Nitrophenol (p-Nitrophenol)	10	10	PQL
924-16-3	N-Nitrosodi-n-butylamine	10	5-10 A	PQL / 0.0064ug/ L=10 ⁻⁶ cancer risk (AWQCD)
55-18-5	N-Nitrosodiethylamine	10	5-10 A	PQL / 0.0008ug/ L=10 ⁻⁶ cancer risk (AWQCD)
62-75-9	N-Nitrosodimethylamine	20	20	PQL / 0.0014ug/ L=10 ⁻⁶ cancer risk (AWQCD)
86-30-6	N-Nitrosodiphenylamine	10	10	PQL / 0.0001ug/ L=10 ⁻⁶ cancer risk (EPA PPCL)
759-73-9	N-Nitroso-N-ethylurea	10	5-10 X	PQL / 0.001ug/ L=10 ⁻⁶ cancer risk (EPA PPCL)
684-93-5	N-Nitroso-N-methylurea	10	5-10 X	PQL / 0.0001ug/ L=10 ⁻⁶ cancer risk (EPA PPCL)
621-64-7	N-Nitrosodi-n-propylamine	10	10	PQL
930-55-2	Nitrosopyrrolidine	10	10	PQL / 0.016ug/ L=10 ⁻⁶ cancer risk (AWQCD)
	Odor ****	3 T.O.N.		Secondary D.W. Std.
23135-22-0	Oxamyl (Vydate)	175	10	Lifetime Health Adv.
75-21-8	Oxirane (See Ethylene oxide)			
1910-42-5	Paraquat	30	5-10 X	Lifetime Health Adv.
608-93-5	Pentachlorobenzene	120	10	EPA PPCL (ADI)
87-86-5	Pentachlorophenol (PCP)	30	10	Organoleptic (RPC)
127-18-4	Perchloroethylene **** (Tetrachloroethylene)	3	1	Primary D.W. Standard
	pH ****	6.5-8.5 (standard units)		Secondary D.W. Std.
85-01-8	Phenathrene	10	10	PQL
108-95-2	Phenol (Carbolic acid)	20	10	Organoleptic (RPC)
103-85-8	N-Phenylthiourea	1,400	5-10 A	EPA PPCL (ADI)
1918-02-1	Picloram	500	5-10 A	Lifetime Health Adv.
1336-36-3	Polychlorinated Biphenyls (PCBs)	0.5	0.5	PQL / 0.008 ug/ L=10 ⁻⁶ cancer risk (H.A.)
1610-18-0	Prometon	100	5-10 A	Lifetime Health Adv.
23950-58-5	Pronamide	50	5-10 A	Lifetime Health Adv.
1918-16-7	Propachlor	90	5-10 A	Lifetime Health Adv.
139-40-2	Propazine	10	5-10 A	Lifetime Health Adv.

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CAS #	Parameter	Guidance* Quantitation		Basis/ Comment
		Concentration (ug/ L)	Level (ug/ L)	
107-02-8	Propenal (See Acrolein)			
76-06-1	2-Propeneamide (see Acrylamide)			
122-42-9	Propham	100	5-10 A	Lifetime Health Adv.
129-00-0	Pyrene	10	10	PQL
	Radium-226+228 ****	5 pCi/ L		Primary D.W. Standard
	Selenium ****	10	5	Primary D.W. Standard
	Silver ****	50	50	Primary D.W. Standard
93-72-1	Silvex (2,4,5-TP) ****	10	1	Primary D.W. Standard
122-34-9	Simazine	10	5-10 A	PQL / 4ug/ L=Lifetime H.A.
	Sodium ****	160,000	500	Primary D.W. Standard
100-42-5	Styrene (Vinyl benzene)	1	1	PQL / 0.01 ug/ L=10 ⁻⁶ cancer risk (H.A.)
	Sulfate ****	250,000	500	Secondary D.W. Std.
93-76-5	2,4,5-T (See 2,4,5- Trichlorophenoxy- acetic acid)			
	TDS (Total **** Dissolved Solids)	500,000		Secondary D.W. Std.
34014-18-1	Tebuthiuron	500	5-10 A	Lifetime Health Adv.
116-06-3	Temik (See Aldicarb)			
5902-51-2	Terbacil	90	5-10 A	Lifetime Health Adv.
13071-79-9	Terbufos	10	5-10 A	PQL / 0.9 ug/ L= Lifetime Health Adv.
95-94-3	1,2,4,5-Tetrachloro- benzene	35	10	EPA PPCL (ADI)
1746-01-6	2,3,7,8-Tetrachloro- dibenzo-p-dioxin (TCDD, Dioxin)	0.01	0.01	PQL / 2.2 x 10 ⁻⁷ ug/ L= 10 ⁻⁶ cancer risk (Health Advisory)
79-34-5	1,1,2,2-Tetra- chloroethane	1	1	PQL / 0.8 ug/ L = RPC
127-18-4	Tetrachloroethylene **** (Perchloroethylene)	3	1	Primary D.W. Standard
56-23-5	Tetrachloromethane **** (Carbon- tetrachloride)	3	1	Primary D.W. Standard
7440-28-0	Thallium	10	10	PQL / 3.7ug/ L=EPA PPCL
108-88-3	Toluene	24	1	Organoleptic (RPC)
636-21-5	o-Toluidine	10	5-10 X	PQL / 0.146ug/ L=10 ⁻⁶ cancer risk (EPA PPCL)
	hydrochloride			
	Total Dissolved **** Solids (TDS)	500,000		Secondary D.W. Std.
8001-35-2	Toxaphene ****	5	1	Primary D.W. Standard

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CAS #	Parameter	Guidance* Quantitation		Basis/ Comment
		Concentration (ug/ L)	Level (ug/ L)	
73-72-1	2,4,5-TP (Silvex) ****	10	1	Primary D.W. Standard
75-25-2	Tribromomethane (see Bromoform)			
120-82-1	1,2,4-Trichloro- benzene	140	10	IRIS
71-55-6	1,1,1-Trichloro- ethane ****	200	20	Primary D.W. Standard
79-00-5	1,1,2-Trichloro- ethane	1	1	PQL / $0.61 \mu\text{g/L} = 10^{-6}$ cancer risk (AWQCD)
79-01-6	Trichloroethene **** (Trichloro- ethylene, TCE)	3	1	Primary D.W. Standard
67-66-3	Trichloromethane (See Chloroform)			
75-69-4	Trichloromono- fluoromethane	2,400	1	EPA PPCL (ADI)
95-95-4	2,4,5-Trichloro- phenol	10	10	PQL / $1 \mu\text{g/L} =$ organoleptic (AWQCD)
88-06-2	2,4,6-Trichloro- phenol	10	10	PQL / $1.2 \mu\text{g/L} = 10^{-6}$ cancer risk (AWQCD)
93-76-5	2,4,5-Trichloro- phenoxyacetic acid (2,4,5-T)	70	1	Lifetime Health Adv.
1582-09-8	Trifluralin	10	5-10 A	PQL / $2 \mu\text{g/L} =$ Lifetime Health Adv.
	Trihalomethanes **** (total)	100		Primary D.W. Standard
	Trimethyl benzenes (total)	10	5-10 A	PQL / $0.24 \mu\text{g/L} =$ organoleptic (RPC)
786-19-6	Trithion	12	5-10 X	RPC
100-42-5	Vinyl benzene (See Styrene)			
75-01-4	Vinyl chloride **** (Chloroethylene)	1	1	Primary D.W. Standard
110-75-8	Vinyl 2-chloroethyl ether (See 2-Chloro- ethyl vinyl ether)			
107-13-1	Vinyl cyanide (See Acrylonitrile)			
75-35-4	Vinylidene chloride **** (1,1-Dichloro- ethylene)	7	1	Primary D.W. Standard
1330-20-7	Xylenes (total)	50	5	Organoleptic (RPC)
105-67-9	2,4-Xylenol (See 2,4-Dimethyl phenol)			
	Zinc ****	5,000	25	Secondary D.W. Std.
12122-67-7	Zineb	14	5-10 X	RPC

SYMBOLS AND ABBREVIATIONS

- * - The concentrations in this table are only to be used as a screening guideline for ground water contamination. These concentrations are not standards and without further justification can not be used as standards.
- ** - Guidance Concentration for Aldicarb Sulfone in the presence of Aldicarb or Aldicarb Sulfoxide is 10 ug/L.
- *** - Guidance Concentration applies to asbestos fibers exceeding 10 um in length.
- **** - Florida Primary or Secondary Drinking Water Standard: Chapter 17-550.310-320, F.A.C.
- # - Organoleptic threshold data may necessitate a lower Guidance Concentration
- A - Practical Quantitation Level of 5-10 ug/L based on gas chromatograph detection with mass spectrometer confirmation. Estimated by Tom Presely, Methodology Department, EPA Laboratory, Cincinnati, and Geoffrey Watts, Bureau of Waste Cleanup DER, Tallahassee.
- ADI - Acceptable Daily Intake
- AWQCD - Ambient Water Quality Criteria Documents, EPA 1980.
- CAG - Carcinogen Assessment Group, EPA 1980.
- CAS # - American Chemical Society's Chemical Abstract Service, 8th Collective Index
- EPA - Environmental Protection Agency.
- H.A. - Health Advisory, EPA Office of Drinking Water.
- IRIS - Integrated Risk Information System, EPA January 1989
- MCL - Maximum Contaminant Level, EPA.
- OPP - Office of Pesticide Programs, EPA, 1984.
- Organoleptic - taste and odor.
- PPCL - Preliminary Protective Concentration Limits, EPA Draft, 1984.
- PQL - Practical Quantitation Level; the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. The Practical Quantitation Level can be estimated to be five (5) times the method detection limit. Federal Register: Vol.52, No.131, Thursday, July 9, 1987, pgs. 25947-25953.
- RPC - Recommended Protective Concentration: Toxicant Profiles, Center for Biomedical and Toxicological Research, Florida State University, 1985-1988.
- T.O.N. - Threshold Odor Number
- X - An EPA approved method for the analysis of this chemical in water has not been established at this time. Routine analyses for this chemical is not recommended unless its presence is suspected.

APPENDIX F

TANK PITS - A SAFEGUARD TO PREVENT CONTAMINATION OF WATER SUPPLY AQUIFER BY CHEMICAL SPILLS

1. Pits constructed of concrete for portable or future tank installations shall have a certifiable dead load of sufficient weight to prevent floatation (Exhibit A) or a combined thickness of floor and roof equal to 73% of the inside depth of the pit of 73% of the distance from finished ground level to tank floor (Exhibit B) whichever is the lesser.
2. Pits constructed with the tank in place and anchored to the floor shall have combined dead load of pit and empty tank equal to the weight of the volume of water displaced by that part of the pit below finished grade.
3. Pit shall be of sufficient size to retain all contents of the tank plus a 12 -inch free board. A minimum clearance of 24 inches shall be provided on all sides of the tank and its supports. Floor shall have 1/4 inch per foot fall to an 18" x18" x6" sump (centered under an access on covered pits for pumping equipment).
4. Covered pits subject in any part to vehicular traffic shall be designed to sustain an H-20 loading. Covers shall be removable (Exhibit C).
5. Open pits shall extend 12 inches above the highest point of the finished grade at the pit.
6. Pit walls shall be constructed of water-proofed reinforced concrete or reinforce hollow unit masonry with all cells grout-filled. Pit cover (where used) and floor shall be constructed of water-proofed reinforced concrete. All concrete shall have a minimum compressive strength 3000 psi in 28 days. Working stresses for reinforced masonry shall conform to SB CC Standards Building Code. Plans and specifications shall be prepared and sealed by an Engineer or Architect registered in the State of Florida. Upon completion of construction, the Engineer/Architect shall certify in writing to the City Building and Zoning Department that construction conforms to these requirements.
7. Vents for covered pits shall have the same venting system as required for the tank placed in the pit - both as to capacity, location and arrangement.
8. Pit opening other than vents shall be liquid-tight, and every connection through which liquid can normally flow shall have a valve located as close as possible to the pit.
9. Vent, fill and withdrawal piping shall not pass through floor or walls of pit, and connections shall be made to preclude breakage form settlement, vibration or contraction.
10. Paint interior of concrete pit (both sides of masonry walls if used with two coats of water proofing compound inert to the storage tank contents.

11. Leakage shall be monitored weekly, and log recording the inspection results shall be maintained. Report leakage and spills to the Pinellas County Utilities Director and Environmental Director, and in the case of flammable and combustible liquids, also report to the Fire Department. Do not pump pits! Wait for disposal instructions.
12. Open tank inspections may be visual. Covered tanks may have a manual gauge, magnetic, hydraulic or hydrostatic remote reading device, or a sealed float gauge.
13. Other containment devices may be submitted for considerations provided that the tank is restrained from floatation under all conditions, that the containing device permits inspection, and if required- withdrawal of the spill without removal of tank.
14. In all instances the regulations of the National Fire Protection Association as administered by the Pinellas County Fire Department shall prevail.

EXHIBIT A
FLOATATION PREVENTION

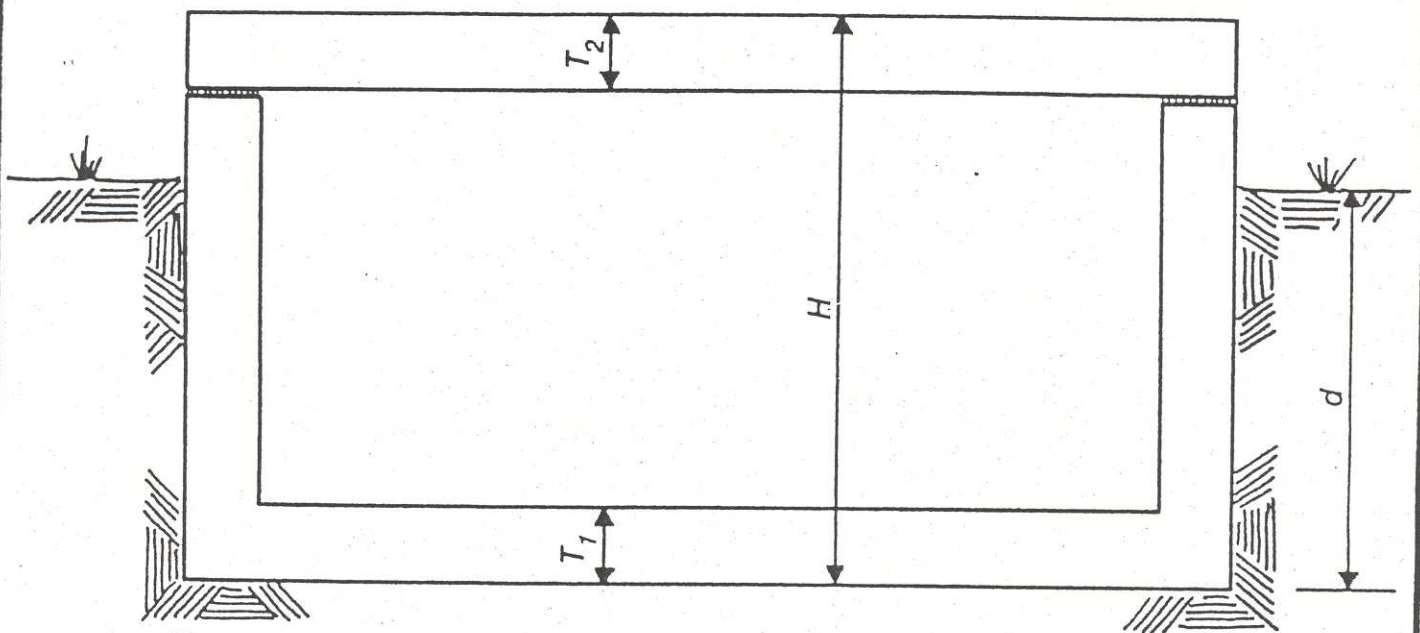
Pit Dead Load must equal Buoyance

Pit Dead Load lbs.* = 144 (Vol. cubic feet roof + walls + floor)

* Add weight of empty tank if permanently anchored.

Buoyance lbs. = 62.35 x Out to Out area of floor x least
depth to finished grade.
(all measurements in feet)

Exhibit B
FLOTATION PREVENTION
(Alternate Calculation)

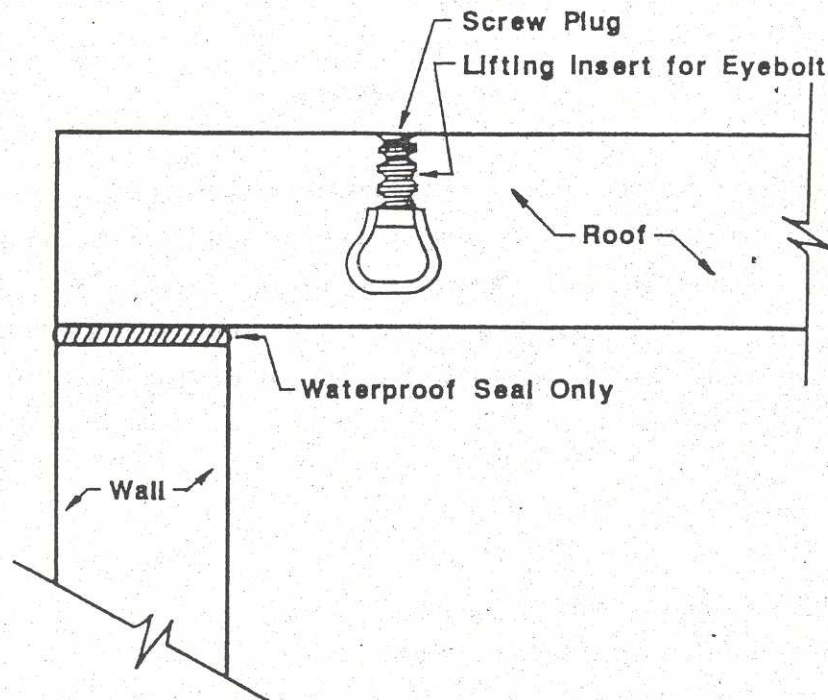


$$d_{\max.} = H$$

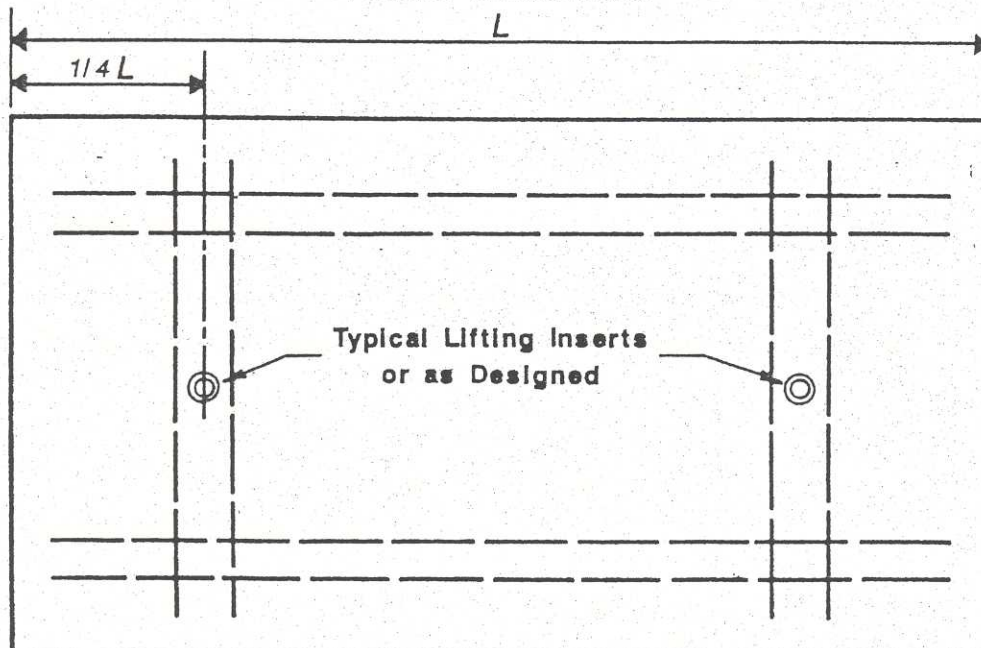
$$T_1 + T_2 = 0.73d \quad \text{Covered Plt}$$

$$T_1 = 0.73d \quad \text{Open Plt}$$

Exhibit C
REMOVABLE ROOF SLABS - COVERED PITS



Removable Pit Cover Lifting Inserts
(Submit Calculations)



APPENDIX G

OBSERVATION AND MONITORING WELLS

Observation wells, located in tank excavations and collection sumps of secondary containment systems, typically extend two feet below the level of the land or hold-down pad. Monitoring wells, located outside of the tank excavations, enable sampling groundwater in areas with permeable soil, where the water table is below the bottom of the tanks but within forty feet of the surface.

Comments:

- a) The size, number, and location of wells is largely dictated by building codes and physical conditions.
- b) Wells should be constructed of factory perforated or slotted PVC, galvanized or coated metallic pipe with .020 inch openings and permeable backfill material to permit water or released product to flow freely into the well.
- c) Access covers and well construction should restrict infiltration of surface water.
- d) Wells should be clearly marked with a black equilateral triangle on a white background and a durable label, warning against the accidental or intentional introduction of petroleum products in the well.