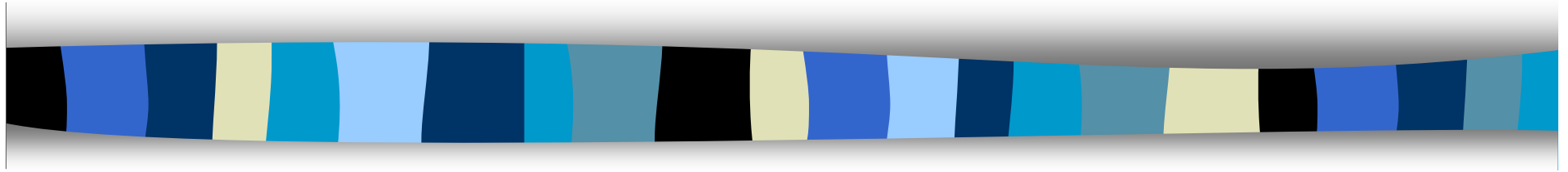


PUBLIC POOL INSPECTIONS



DEPARTMENT OF PUBLIC HEALTH
ENVIRONMENTAL HEALTH SECTION
RECREATION PROGRAM

(860)509-7334



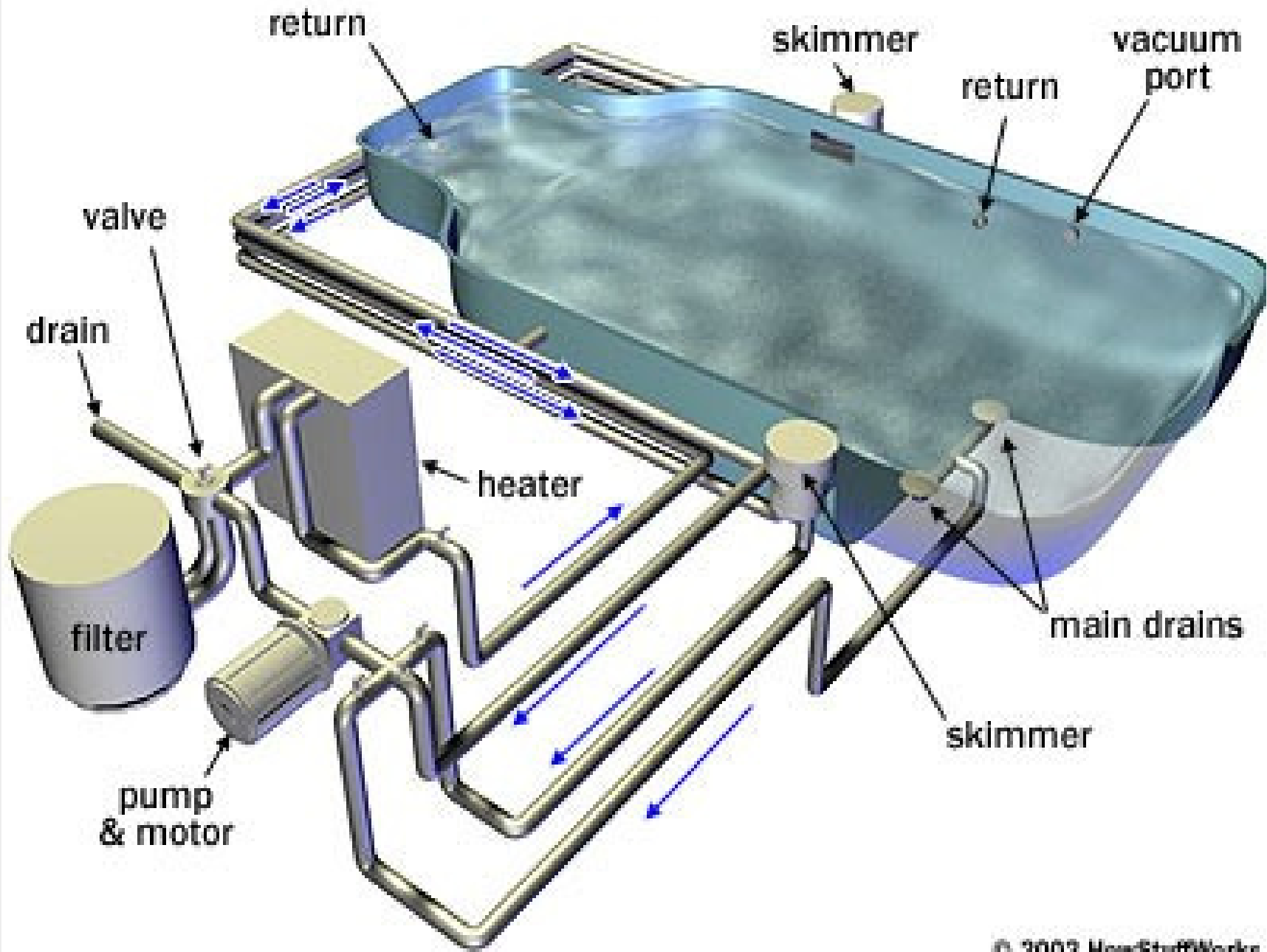
DPH WEB SITE

- www.ct.gov/dph
- Click on “A-Z Topics” tab on left side of screen
- Click on “P” and scroll down to “Public Pools”
- Information and forms available
- **PHC Section 19-13-B33b**



PUBLIC POOLS

- Definition – defined in Public Health Code (PHC), **Section 19-13-B33b(a)**
- Locations – swim clubs, hotels, parks, camp grounds, condominiums, YMCAs, businesses (but not Family Day Care Homes or single family home rentals such as Airbnb)
- Types – swimming, wading, whirlpool, special purpose, therapeutic, spray parks
- Floatation Tanks removed Oct. 2015



Pool



Play Areas



Flume Rides



Spa



Private Pool





MY LIFE



DPH DUTIES CONSTRUCTION

- ❖ **PHC Section 19-13-B33b(b)(1)**
- ❖ CT Public Swimming Pool Design Guide
- ❖ Plans - CT Licensed PE or Architect
- ❖ New Construction
- ❖ Renovations



➤ Plans Reviewed by DPH

✓ *Construction plans* and specifications for the new or renovated pool

✓ *Site Plan* showing:

Decking

Bath House/Restrooms

Drinking Fountain

Fencing/Gates – not required around

splash pads/spray parks as of Oct. 2016





DPH APPROVAL & INSPECTION

- ✓ Written Approval of Plans by DPH
- ✓ Final Inspection – always invite LHD
- ✓ Final Approval to Use/Open Pool
- ✓ LHD and BO copied on all DPH reports



EQUIPMENT REPLACEMENT

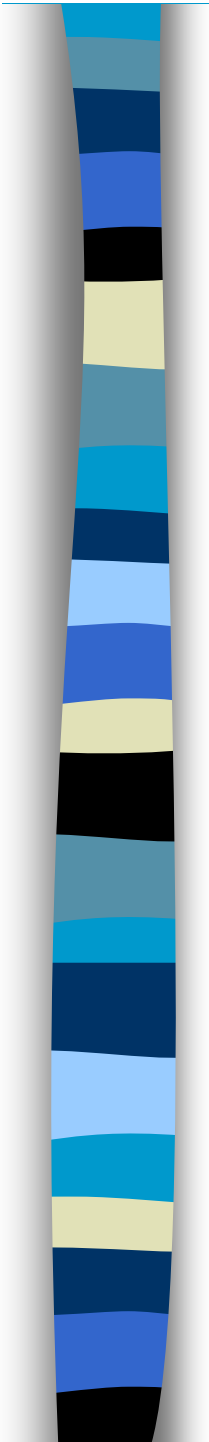
- Reviewed by DPH
 - Automatic Disinfection Equipment
 - Filter Replacement
 - Pump Replacement
- Reports sent to LHD
- If You see any changes let me know.....

Also Handle -

- Swimming Area Regulations –
 - ❖ 19a-36-B61
 - ❖ Effective: 3/17/14
- Family Campground Regulations –
 - ❖ 19a-2a-29
 - ❖ Effective: 12/27/05



YOUR LIFE





Compliance/Routine Inspections (B33b(g))

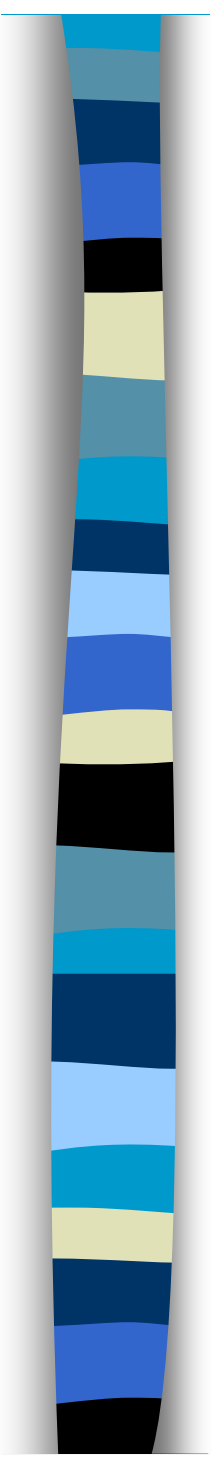
- Inspections conducted by Local Health Departments
- DPH recommends inspection of all public pools be performed annually
- Seasonal pools inspected prior to or soon after opening
- Compliance with PHC, Section 19-13-B33b



Supervisory Personnel

(B33b(b)(2) & B33b(b)(19))

- No requirement for Certified Pool Operator (CPO) in CT
- Make sure a knowledgeable person is “on duty on the premises...when the pool is open for use”
- Register/Notify LHD of owners and name changes



Clarity of Water

(B33b(b)(3)&(4))

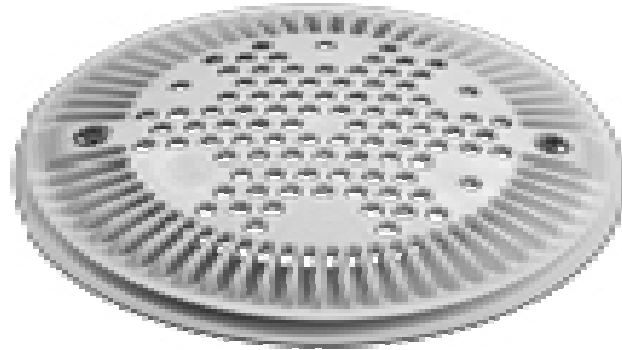
- Is the water clear?
- Can you see the bottom, the main drains, of the pool?
- Water Quality – not required to sample, but if you do standards in PHC
- Circulation of water in pool.



Bottom Main Drains

- Located in deepest point on pool bottom
- Must have VGB grates/covers
- If only one main drain, or drains less than 3 feet apart, need another anti-entrapment device (SVRS, gravity drain, pump shut-off device)
- Covers need to be replaced periodically per manufacturer (5-10 Years)

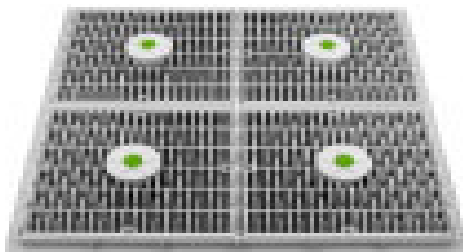
Drains



Hayward WG Series



Paramount
8" diam



AquaStar
24" x 24"



MDX² & SDX DRAINS ARE
COMPLIANT WITH THE VIRGINIA
GRAEME BAKER ACT 2008.

SVRS



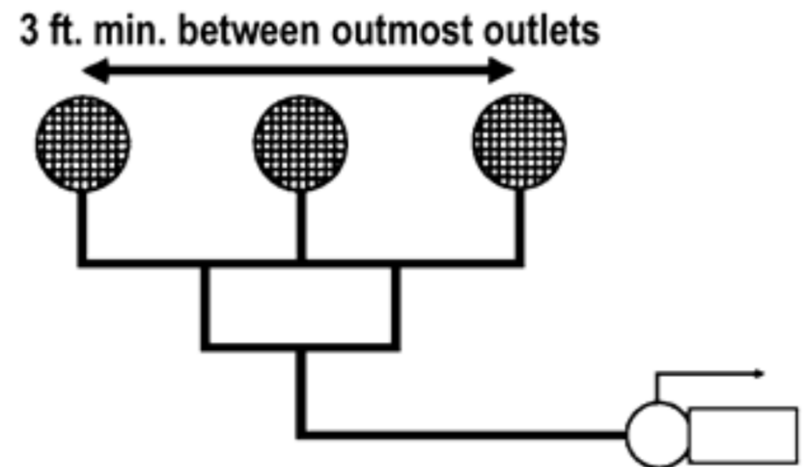
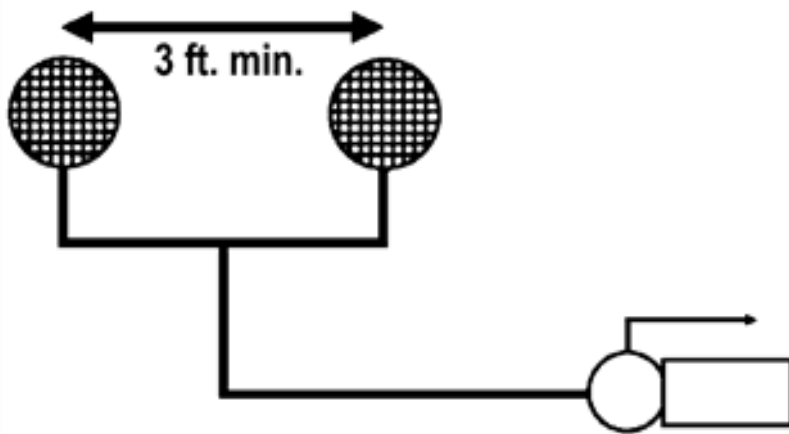
- Install on pipe from main drain(s) prior to pump.



The Virginia Graeme Baker Pool & Spa Safety Act (VGB)

- ❖ Federal Bill signed into Law back on 12/19/07
- ❖ Promoted safety, layers of protection (suction outlet covers, enclosures), prevents all types of entrapment
- ❖ Not adopted directly into CT State Regs, but made changes to Design Guide effective 4/14/08
- ❖ All suction outlets must be certified to comply with current ASME/ANSI A 112.19.8 Standard and ANSI/APSP-16 2011 Standard.
- ❖ Minimum 2 main drains – manifold together
- ❖ All wading pools must have a minimum 2 main drains
- ❖ Minimum space between drains 3 feet apart measured edge to edge

Federal Manifold Configurations



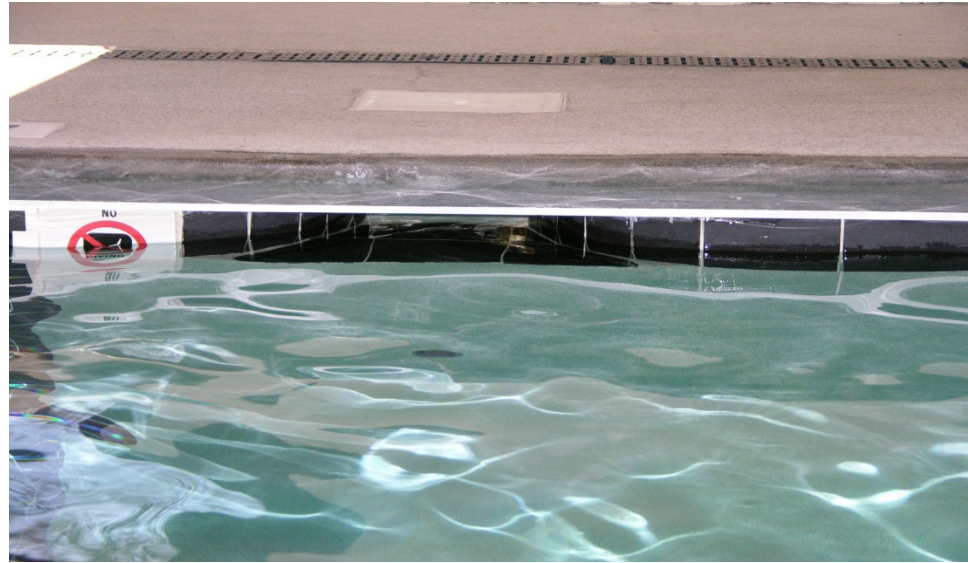
Correct



Incorrect



Skimmers



- Water level middle of skimmer opening
- Skimmer baskets
- Covers screwed down
- Weirs provided
- VGB Covers on equalizer line openings



Gutters

- Continuous around entire pool periphery
- When no one is in the pool the gutter system should be providing continuous skimming over lip of gutter
- Surge tank





Disinfection Residual

(B33b(b)(5) & B33b(e)(1))

■ Free Available Chlorine Residual (FAC):

- Pool : Min. residual 0.8 mg/l (ppm) – (looking to raise it to 1.00 ppm to match the CDC)
- Whirlpool Spa: Min. residual 1.0 mg/l (ppm)
- If cyanuric acid (CYA) is used as a stabilizer:
 - CYA test kit required
 - CYA level not to exceed 100 mg/l (ppm)
 - min. FAC residual 1.5 mg/l (ppm)

■ Bromine Residual:

- Pool : Min. residual 1.5 mg/l (ppm)
- Whirlpool Spa: Min. residual 3.0 mg/l (ppm)



pH (B33b(b)(6))

- Measure of acidity/alkalinity
- pH between 7.2 – 7.8
- Lower pH – corrosive water, eye irritation
- Higher pH – cloudy water, scale formation, eye irritation
- pH has an effect upon chlorine disinfection

Test Kit (B33b(b)(5))



- MUST use DPD reagent
(diethyl-p-phenylene-diamine)
- Several manufacturers (Taylor, Hach, Bio-Lab, etc.)
- Replace reagents yearly

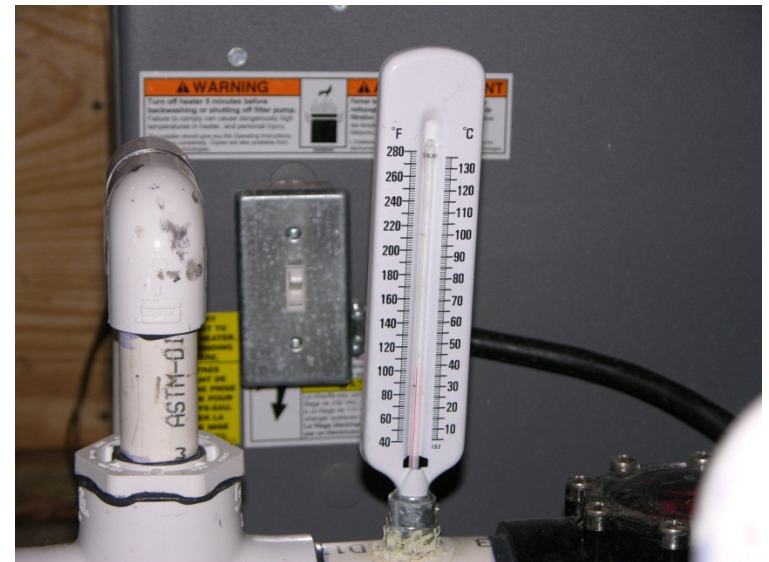


Record keeping/ Log Books (B33b(b)(7))

- Immediately prior to opening pool for the day and at sufficient frequency:
 - Disinfectant residual level
 - pH level
- Additional Useful Information:
 - Date/Time
 - Water balance/Chemicals added
 - Filter gauge readings
 - Backwash dates
 - Bather load
 - Water temperature

Water Temperature

- No requirements for pools
- Maximum temp 104 F for spas (B33b(e)(2))



Make-up Water



- Over the rim fill spout most common
- Automatic fill system required with gutter pools
- Physical air gap required



Depth/No Diving Markers

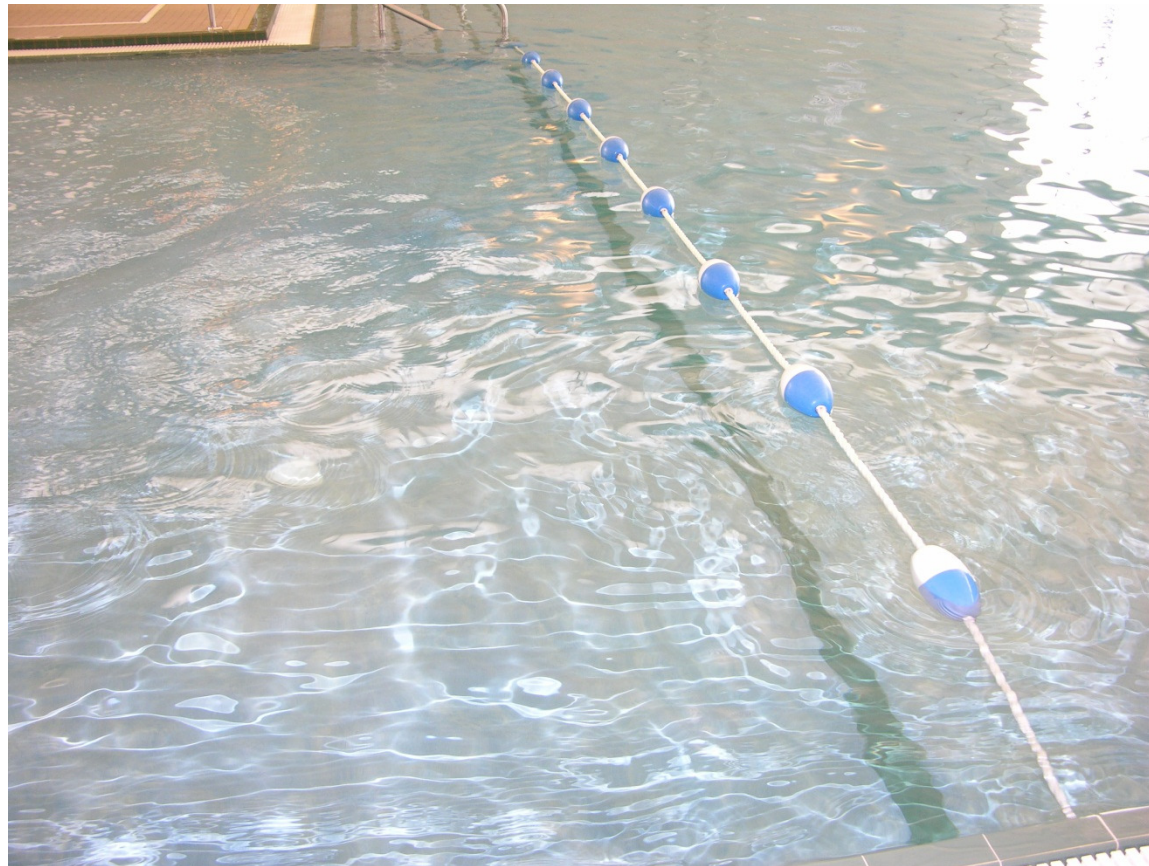
(B33b(c)(1), B33b(d) & B33b(e)(3))

- Located on pool coping and on sidewall of pool above water line
- Located around entire swimming and wading pool
- Located on 2 sides of whirlpool spa
- Minimum 4" in size
- Located at shallow end, break point, deep end and appropriate points in between
- Color contrast line at 5 ft. depth (break point) and other slope changes of floor

Depth/ No Diving Markers (B33b(a)(3))



Breakpoint



Diving Boards



&



Starting Blocks

- Note diving board on inspection form
- Note if starting blocks on form
- Starting blocks must be removed unless during times of training or competition
- DPH must approve all installation



Decks

- Good condition? Tripping hazards ?
- First 5 feet sealed, grouted
- Minimum 5 feet of decking around entire pool's periphery.
- Minimum 5 feet of decking around 50% continuous of whirlpool spa's periphery
- Minimum 10 feet of decking between pools.



Decking cont.

- Unobstructed decking area around pool
- Disinfect deck daily with 0.5% chlorine solution, or equivalent fungicide (B33b(b)(8))
- Sloped away from pool to drains or surface of ground ($\frac{1}{4}$ inch per linear foot)
- Non-slip finish
- Make sure all ladders/handrails/diving stands properly secured to deck (B33b(b)(10))



Ladders & Stairs

- Required at shallow end of pool if deck to bottom of pool floor is over 2 ft.
- Make sure ladders/railings secure
- Ladders or stepholes required at deep end and on each side of pool if the pool is > 30 ft. wide
- Stairs in good condition
- Color contrast bar on edge of steps



Signs

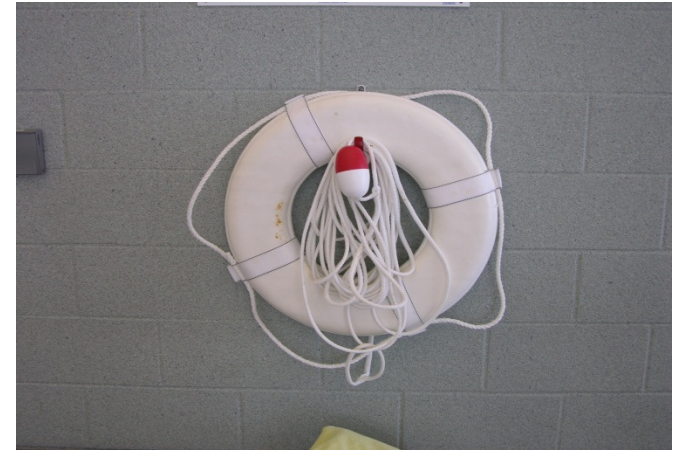
- No Diving (B33b(c)(4))
- No Lifeguard on Duty (B33b(b)(14))
- Pool Rules (B33b(b)(17)) - posted by pool and in dressing rooms
- Spa Rules (B33b(e)(4))
- Emergency Numbers (B33b(b)(18))
- Located in appropriate, visible locations

Lifeguards (B33b(b)(14))



- Not required by PHC
- If no lifeguard, then MUST be posted 4 inch letters: “No Lifeguard on Duty”
- If lifeguard provided:
 - Raised stand 4 ft. high
 - Located at deep end of pool

Safety Equipment



- 1 unit per each complete 100 ft. perimeter of pool (B33b(a)(4) & B33b(c)(3))
 - Ring buoy w/ 50 ft of rope
 - Life pole Shepard's crook min 12 feet in length
- Hung in appropriate locations (not all at one end of the pool)
- Emergency shut-off for whirlpool spas
- Emergency Telephone (B33b(b)(16))

Lifeguard Chair (B33b(c)(2))



Raised Stand 4 feet min. and
Located at deep end of pool

First Aid Kit (B33b(b)(15))





Bathroom Facilities (B33b(b)(8))

- Separate men's and women's bathroom facilities required
- Must have:
 - Toilet
 - Urinal (men's room only)
 - Sink
 - Shower (hot (90°-105° F) & cold running water & soap)
- Private changing area/Lockers
- Non-slip floors



Fencing/Enclosures (B33b(b)13))

- Around entire pool periphery
- Wading pools must have their own enclosure
- Outdoor – min. 4 ft. high enclosure (fence, wall, building). Not climbable.
- If picket fence, max. space between pickets not more than 2 inches. (In Building Code too.)
- Max. space of 2 inches between fence and ground.
- Indoor – enclosed room with controlled access doors to pool area
- Equipment area must be enclosed/secured

Fence





Gates & Doors (B33b(b)(13))

- Controlled entry to pool area
- All bather entry gates must be self-closing, self-locking
- All utility gates must be kept locked
- All doors control entry, self-closing
- Gates/doors lockable when pool is not open for use.



Pool Equipment

(B33b(b)(9) & B33b(b)(11))

- All pool equipment (pumps, filters) shall be located in a clean, secured area
- All chemicals shall be stored in a cool, dry, well ventilated area.
- Keep chemicals separated from each other



Circulating Pumps

- Hair catcher head of pump
- Vacuum gauge influent side of pump
- Pressure gauge effluent side of pump
- Pump Specification (HP, make & model no.)
- Separate pumps for each pool
- Will see 2 pumps for spas
- Draws from main drain & skimmers/surge tank
- Piping should be labeled
- Plumbing schematic in equipment room

Pump



Pump Plate/Motor Plate



Gauges Across Pump



Labeled Pipes



Filters



■ Types –

- High Rate Pressure Sand
- Cartridge
- Pressure Diatomaceous Earth (DE)

■ Filter Plate

■ Backwash Discharge Line

■ Filtration Rate Calculation



High Rate Pressure Sand Filters

- Flow rate max. 20 gpm/sf
- Backwashing necessary at design flow rate for 5 minutes
- Site glass on backwash line
- Not approved for whirlpool spas

Sand Filter





Cartridge Filter

- Flow rate max. 0.375 gpm/sf
- NO backwashing necessary
- Spare cartridges on-site
- Used on all types of pools/whirlpool spas

Cartridge Filter





DE Filters

- Flow rate max. 2 gpm/sf
- Backwashing necessary
- Separation tank (required if backwashed to leaching system)
- Site glass on backwash line
- Used on all types of pools/whirlpool spas

Backwash Lines



- Backwash to:
 - Dedicated disposal systems
 - Sanitary sewer systems
- Site glass
- MUST be air gapped
- Pool drain lines must be air gapped too



Calculate Filtration Rate

- Filtration rate = flow rate/filter size
- Example:
 - Flow rate: 60 gpm
 - Cartridge filter size: 300 sf
 - Filtration rate = $60 \text{ gpm} / 300 \text{ sf} = 0.2 \text{ gpm/sf}$
- Where do you get the flow rate?



Flow Gauge

- Located on return line to pool
- Location – DPH approved plans
- 10 times pipe diameter before gauge
- 5 times pipe diameter after gauge
- Remote reader

Flow Meter



Location
Important!!





Turnover Rate

■ Rates

- Swimming Pool – 8 hours
- Wading Pool – 2 hours
- Whirlpool Spas – 1 hour
- Spray Parks - 30 minutes

■ Calculation

■ Rate = Volume of pool/flow rate

■ Example:

- Pool size: 24,000 gals.
- Flow rate: 55 gpm
- Turnover rate= $24,000\text{gals}/(55\text{ gpm} \times 60\text{ min./hr.})=7.3\text{ hours}$



Disinfection

- PHC requires automatic disinfection equipment (B33b(b)(5))
- Chemicals stored in dry area
- Chemicals stored separately (B33b(b)(11))

Chlorinator





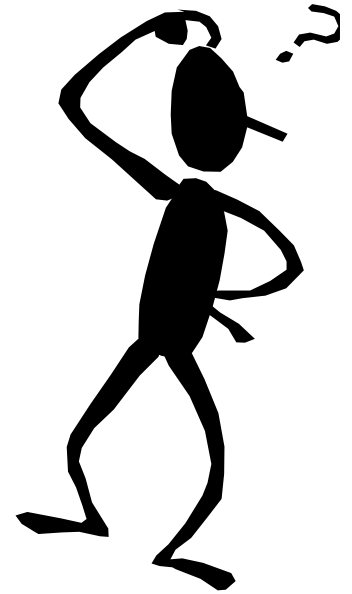
Dept of Consumer Protection

- New Regulations - PA 2011-81 went into effect 10/1/11.
- Created new swimming pool builder's license
- Extended existing licensing penalties to swimming pool builders and maintenance and repair contractors
- SP-1 and SP-2 Licenses needed to do work (been on the books for years, now penalties if work done by non-licensed person)
- Not pool cleaners/chemical balancing



What are you looking for??

- Water Clarity
- Water Quality:
 - Free Chlorine Residual – min. 0.8 mg/l(ppm)
 - pH Range 7.2-7.8
 - Bacteria samples
- Test Kit – DPD reagent
 - (diethyl-p-phenylene-diamine)
- Log Books
- Main Drains/VGB compliance





What are you looking for?? (Cont.)

■ **Safety:**

- Signs - Rules, No Diving, No Lifeguard on Duty, “911”
- Safety Equipment – ring buoy w/ rope, shepherds crook, telephone, first aid kit
- Depth markers
- Emergency phone

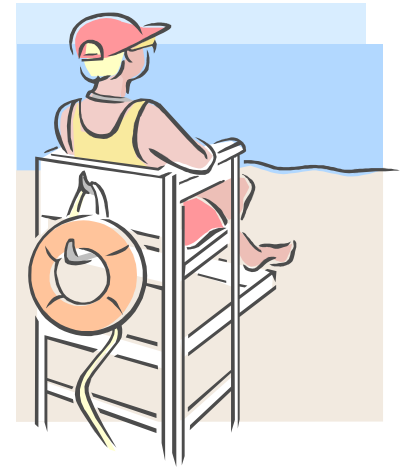
■ **Ladders/Handrails secure**

■ **Condition of deck – disinfection,
tripping hazards**



What are you looking for?? (Cont.)

- Supervisory Staff
- Lifeguards
- Fencing/Access Gate
- Equipment/Equipment Area
- Chemical Storage
- Bath Houses - number of facilities/clean/disinfected





CLOSE THE POOL!!!!!!!!!!

(B33b(g))

- Cloudy water; can't see pool floor
- Minimum disinfection residual levels not being maintained
- Structural deficiencies
- Faulty main drains – missing, broken, not secure
- No lifesaving equipment
- Discharge of fecal matter – *Updated*



Final Comments

- DPH recommends at least annual inspections
- Bather health and safety is the primary concern
- DPH Form provides outline of Regulatory Requirements
- Give copy of the inspection form to the facility
- Follow-up as needed

THANK YOU

❖ PLEASE FEEL FREE TO

CALL ME:

860-509-7334

