SPECIAL APPENDIX to

Pipes and Sumps—As I See Them
Thoughts from a Florida UST Inspector

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The following photos are a supplement to the LUSTLine 47 article “Pipes and Sumps—As I See Them: Thoughts from a Florida UST Inspector” and help illustrate the article. The article can be downloaded at www.neiwpcc.org/lustline.htm.

UST SYSTEM PIPING

#1 Rigid FRP pipe with impact damage

#2 Rigid FRP pipe with scratch or score on surface
UST SYSTEM PIPING

#3 Rigid FRP pipe – failure to obtain adequate surface bond

#4 Internal color change of carrier portion of pipe from ivory to black; very brittle

#5 Internal color change

#6 External color change

#7 External color change

#8 Black mold growth; degradation of single-wall pipe’s external cover
UST SYSTEM PIPING

#9 Degradation of outer layer of single-walled pipe

#10 Subsequent to degradation of outer skin, the substrate of the pipe becomes granular

#11 Loss of substrate integrity

#12 Jelling of single-walled pipe

#13 Softening of single-walled pipe with product being squeezed out

#14 Softening of single-walled pipe
UST SYSTEM PIPING

#15 Blowout – generally occurs near end of pipe

#16 Blowout

#17 Blowout

#18 Blowout; also note the apparent growth of pipe evidenced by the exposed “clean section”

#19 Blowout – reverse view

#20 Blowout – at sump wall
UST SYSTEM PIPING

#21 Apparent 3-inch growth in secondary pipe layer

#22 Secondary layer overrides fitting

#23 Split fitting resulting in disconnection of pipe

#24 Primary pipe jacket damage

#25 Primary pipe jacket damage

#26 Growing pipe meets fitting
UST SYSTEM PIPING

#27 Cracking of outer layer of primary pipe

#28 Cracking of outer layer of primary pipe

#29 Pipe growth pushes metallic fittings out of vertical orientation; black boot torn away from sump wall

#30 Secondary pipe layer overrides fitting; metallic fittings pushed out of vertical orientation

#31 Radical kink in pipe

#32 Interesting orientation of pipe; note scrunching of pipe skin at sharp bend-radius points.
UST SYSTEM PIPING

#33 Two sharp bends in double-wall pip; note scrunching/slippage of secondary layer

#34 Orientation of pipe after disconnection from pump

#35 Split in primary pipe outer layer

#36 Split in secondary pipe; note that there appears to be a pvc-chase pipe penetrating the sump wall

#37 Split pipe

#38 Split of secondary pipe; apparent failure of primary layer underneath
UST SYSTEM PIPING

#39 Crack in pipe

#40 Hairline crack in secondary pipe

#41 Loss of structural integrity of carrier portion of primary pipe

#42 Exposed cracks in primary pipe wall

#43 Expansion of primary pipe blocks communication avenue of blue secondary

#44 Swell of primary against secondary
UST SYSTEM PIPING

#45 Swell of primary against secondary

#46 Swell of primary against secondary

#47 Loosening of primary pipe skin; torn boot

#48 Loosening or “alligating” of primary pipe skin

#49 Loosening of primary pipe skin

#50 Discoloration and loosening of primary pipe skin
UST SYSTEM PIPING

#51 Cracked fitting

#52 Cracked fitting
UST SYSTEM SUMPS

#53 Ripple in sump wall; torn boots; shift in pipe position within secondary pipe

#54 Ripple in sump wall; torn boot; shift in pipe position within secondary pipe; water intrusion due to apparent loss of secondary integrity

#55 Ripple in wall; shift in pipe position within secondary pipe

#56 Torn boot

#57 Tank secondary jacket deformed
UST SYSTEM SUMPS

#58 Tank secondary jacket deformed; note shift in primary pipe orientation within secondary pipe; loosening of primary pipe skin; discoloration of primary pipe

#59 Floor of dispenser sump warped

#60 Pipe sump floor warped

#61 Pipe sump floor warped

#62 Transition sump floor pushed up into contact with primary pipe; primary pipe, in turn, in contact with secondary pipe (groundwater at 2-3 feet below land surface)
UST SYSTEM CONTRACTOR ERROR

**#63 Contractor Error** – failure to use sump manufacturer specified wall penetration fitting & oblique angle of wall penetration

**#64 Contractor Error** – “Scuff Guard” layer penetrates sump wall – this layer should terminate outside the wall

**#65 Contractor Error** – mating two different manufacturer’s product