

SAWS FACILITY CHECK LIST - PUMP/LIFT STATIONS

NOV 2010

System	Component	Primary Group	Secondary Group	Req (R) / Pref (P) Design Criteria	Guideline	Yes or No
Perimeter Fence	Fencing	Security	Facilities	R	Is fence installed with approved materials in the manner specified	
	Fencing	Security	Facilities	R	Is fence installed free of any large gaps (those greater than 6 inches) at sides/corners	
	Fencing	Security	Facilities	R	Is fence installed with maximum clearance of six inches above finished grade	
	Fencing	Security	Facilities	R	Intruder-resistant fence--A fence six feet or greater in height, constructed of chainlink mesh (9 ga minimum) with three strands of barbed wire (9 ga minimum) extending outward from the top of the fence at a 45 degree angle with the smooth side of the fence on the outside wall. Any materials substitution shall be approved by Security and Facilities prior to construction	
	Fencing	Security	Facilities	R	Is fence installed with a minimum of 12 inch mow strip, with galvanized anchors every 3-5 feet.	
	Fencing	Security	Facilities	R	Is maximum fence post span 10 feet or less	
	Gates	Security	Facilities	R	Do all manual gates contain appropriate locks (i.e. SAWS approved depending on type of site, i.e. Production - Medeco lock)	
	Gates	Security	Facilities	R	Is gate installed with approved materials in the manner specified	
	Gates	Security	Facilities	R	Is gate installed free of any large gaps at sides	
	Gates	Security	Facilities	R	Is gate installed with maximum clearance of six inches above finished grade	
	Gates	Security	Facilities	R	Is gate installed with minimum height of 72 inches for fence fabric (generally chain link), plus 3strands of barbed wire or using fabric/material with a minimum height of 96 inches if barbed wire is not used.	
	Gates	Security	Facilities	R	Does gate have an adequate catch to ensure the gate can not be pushed in or pulled out to create a large gap	
	Gates	Security	Facilities	R	Does gate operate smooth and freely, without undo stress on gate operator	
	Gate Operator	Security	Facilities	R	Does operator appear to be adequately anchored	
	Gate Operator	Security	Facilities	R	Is gate operator the unit specified	
	Gate Operator	Security	Facilities	R	Are exit/safety loops installed at required distances	
	Gate Operator	Security	Facilities	R	Do exit/safety loops function properly	
	Gate Operator	Security	Facilities	R	Do limit switches appear to be set appropriately	
	Gate Operator	Security	Engineering	R	Is gate operator wired appropriately to security access control system	

SAWS FACILITY CHECK LIST - PUMP/LIFT STATIONS

NOV 2010

System	Component	Primary Group	Secondary Group	Req (R) / Pref (P) Design Criteria	Guideline	Yes or No
Vandal Guard	Vandal Guard	Security	Production	R	For sites with tanks, is the vandal guard installed a minimum of six feet from finished grade and are all tank man-way/hatch openings secured with a SAWS lock.	
CCTV	Camera	Security	Engineering	R	Is CCTV system installed with the appropriate model and type of camera	
	Camera	Security	Engineering	R	Are the cameras in the appropriate location	
	Camera	Security	Engineering	R	Are cameras mounting using appropriate hardware	
	Camera	Security	Engineering	R	Are the cameras connected to the appropriate power supply units	
	DVR	Security	Engineering	R	Is the DVR unit supplied the model specified	
General Security	Enclosure	Security	Engineering	R	Is the security enclosure supplied the unit specified, with appropriate ventilation for the equipment it contains.	
	Cables	Security	Engineering	R	Are the cables supplied the appropriate type	
	Cables	Security	Engineering	R	Is all wiring and wiring connections appropriate for switch/router, cameras, DVR, power supplies, etc.	
	Lighting	Security	Facilities	R	Does site lighting appear adequate	
Networking	Switch	Security	IS	R	Is the switch/router the unit specified	
	UPS	Security	Engineering	R	Is the UPS the unit specified	
	UPS	Security	IS	R	Does the UPS have the appropriate management card installed	
	UPS	Security	Engineering	R	Is the UPS management card connected to the switch/router supplied	
	Encoder/Decoder/Servers	Security	Engineering	R	If encoders/decoders/camera servers are required, are the units supplied per specifications	
	Radio	Security	IS	R	If a radio is required are the those provided appropriate	
	Radio	Security	IS	R	If a radio is required are the units mounted correctly	
	Radio	Security	IS	R	If a radio is required verify the performance of the links to ensure bandwidth is acceptable.	
	Radio	Security	IS	R	If a radio is required are appropriate Lighting Protection Units (LPU) installed.	
	Radio	Security	IS	R	If a radio is required are appropriate antennas installed	
	Radio	Security	IS	R	If a radio is required verify appropriate license key and software key are installed	
	Radio	Security	IS	R	If a radio is required verify all connections are per manufactures specifications	
Access Control	Card Readers	Security	Engineering	R	Are card reader/s the appropriate models	
	Card Readers	Security	Engineering	R	Are card reader/s installed correctly	
	Card Readers	Security	Engineering	R	Do card readers function appropriately	

SAWS FACILITY CHECK LIST - PUMP/LIFT STATIONS

NOV 2010

	Component	Primary Group	Secondary Group	Req (R) / Pref (P) Design Criteria	Guideline	Yes or No
	Panel	Security	Engineering	R	Is the access control panel the appropriate model	
	Panel	Security	Engineering	R	Does the access control panel function appropriately	
	Panel	Security	Engineering	R	Access control panel is appropriately wired to the switch/router	
	Panel	Security	Engineering	R	Does the access control panel include the appropriate relays	
	Fireman's Box	Security	Engineering	R	Is the fireman's box the correct model	
	Fireman's Box	Security	Engineering	R	Is the fireman's box installed correctly	
Wells	Casing	Engineering	Production	R	Concrete sealing block extending at least 3' from the well casing in all directions, with a minimum thickness of 6" well casing extend a minimum of 18" above the elevation of the finished floor of the pump room or natural ground surface.	
	Vent	Production	Engineering	R	Casing vent with 16 mesh or finer corrosion resistant screen facing downwards.	
	Grade	Engineering	Production	R	Grade well site so surface waters drain away from well head	
	Sample Point	Production	Engineering	R	Locate raw water sample point on head works, prior to any valves or air release	
	Sample Point	Production	Engineering	R	No vacuum breakers located on sample points Sample point labeled "Raw Water Sample Point." Also, any external points of entry (POE) must be secured.	
Service Pumps	Pumps	Production	Engineering	R	No water leaking on floor, pump base or surrounding areas.	
	Pumps	Production	Engineering	R	Water from pump stuffing box properly drained.	
	Pumps	Production	Engineering	R	Pump/motor should be clean & no grease or oil present.	
Chlorination	Chlorination Rooms	Production	Engineering	R	Housing for gas chlorination equip & cylinders of chlorine shall be in separate buildings or rooms with impervious walls or partitions separating all mechanical & electrical equip from the chlorine as a measure of safety.	
	Chlorination Rooms	Engineering	Production	R	Housing located above ground level as a measure of safety.	
	Chlorination Rooms	Production	Engineering	R	Adequate ventilation (high & floor level screened vents),for all gas chlorine storage enclosures.	
	Chlorination Rooms	Engineering	Production	R	If negative pressure ventilation is installed, facilities must have gas containment & treatment per current Int'l Fire Code (IFC).	
	Chlorination Rooms	Engineering	Production	R	Forced air ventilation required for enclosures containing more than (1) 150lb cylinder of chlorine which includes: screened & louvered floor level & high level vents; fan located at & draws air through top vent & discharges to outside atmosphere through floor level vent; and fan switch located outside the enclosure.	

SAWS FACILITY CHECK LIST - PUMP/LIFT STATIONS

NOV 2010

System	Component	Primary Group	Secondary Group	Req (R) / Pref (P) Design Criteria	Guideline	Yes or No
	Chlorination Rooms	Engineering	Production	R	When chlorine gas is used, a full-face self-contained breathing apparatus or supplied air respirator meeting OSHA standards for construction and operation & small bottle of fresh ammonia solution (or approved equal) for testing chlorine leakage must be readily accessible outside chlorinator room & immediately available to the operator in the event of an emergency.	
Site Selection	Elevation	Engineering	Real Estate	R	Elevation (min & max) critical for booster & tank site selections. Also, validate adequate drainage for peak flows.	
	Elevation	Real Estate	Engineering	R	Identify point of discharge for overflows	
	Access	Real Estate	Engineering	R	Adequate ingress & egress from the site	
	Access	Real Estate	Engineering	R	Cost to extend infrastructure to the property	
	Tank Site	Real Estate	Engineering	R	Ground or elevated tank dependent on property size	
	Site Selection	Real Estate	Engineering	R	Title or deed restrictions that may prohibit use of property as site	
	Site Selection	Real Estate	Engineering	R	Environmental Site Assessment (ESA) must be performed during feasibility period of Purch Agreement	
	Site Selection	Real Estate	Engineering	P	Special requirements of community/ HOA (landscaping, lights, fencing)	
Hydropneumatic Tanks	Grade	Engineering	Production	R	Located wholly above grade and must be of steel construction with welded seams except as provided in paragraph (8) of this subsection.	
	Pressure	Engineering	Production	R	Have a pressure release device & an easily readable pressure gauge.	
	Pressure	Production	Engineering	R	Provided for maintaining the air-water-volume at the design water level and working pressure.	
	Pressure	Production	Engineering	R	Air injection lines must be equipped with filters or other devices to prevent compressor lubricants and other contaminants from entering the pressure tank.	
	Location	Engineering	Security	R	Installed in lockable building designed to prevent intruder access or enclosed by an intruder-resistant fence with lockable gates.	
Landscaping	Trees	Facilities	Security	R	Trees & shrubs set back from property line and planted far enough back (minimum of 12 feet) from fence line to allow room for maintenance and provide adequate site lines.	
	Trees	Security	Facilities	R	Trees planted far enough from fence line (min. of 12' from fence, trees & tree canopies) to prevent individuals using them to climb over and gain site access.	

SAWS FACILITY CHECK LIST - PUMP/LIFT STATIONS

NOV 2010

System	Component	Primary Group	Secondary Group	Req (R) / Pref (P) Design Criteria	Guideline	Yes or No
Landscaping (Con't)	Buffers	Security	Facilities	R	Buffer complies with Type "E" as listed in COSA Unified Development Code 35-309, Division 3.	
	Plant Materials for new sites	Security	Facilities	R	Minimum plant requirements for Buffer Type "E". Trees: 2 canopy & 4 understory; Shrubs: 14 large, 4 medium & 4 small. See UDC 35-309 for required sizes at maturity.	
	Landscape	Security	Facilities	R	Within the 12' clear zone on either side of the fence there should be no planted material or landscape feature that is taller than 24" or wider than 15" at full maturity. If landscape is provided for visual screening of the site, plant landscape no closer than 12 feet from the fence	
	General	Engineering	Facilities	R	Contractors required to maintain vegetation until fully established	
	General	Engineering	Facilities	R	Large rocks, excess debris & silt fences removed from site	
	Irrigation	Engineering	Facilities	R	Irrigation systems not required or recommended due to access and maintenance issues. They are considered on a case by case basis and only if warranted by extenuating circumstances.	
Site / General	Access	Engineering	Real Estate	R	Do all weather roads provide access to pumps, building, etc. (i.e. all weather roads often not installed near facilities)	
	General	Engineering	Facilities	R	Contractor to remove all temp elec/phone services, including poles	
	Signage	Engineering	Facilities	R	Include signage in plans & specs	
	General	Engineering	Facilities	R	Include privacy and screening requirements in specs	
	Fencing	Engineering	Security	R	Color & fence variations need prior approval (ornamental, powder coating, sprayed/baked, etc.)	
	Landscape	Engineering	Facilities	P	Consider eliminating landscaping on small Production sites (monitoring wells) and use alternatives (weed barriers, crushed granite, concrete...)	
Storage Tanks - Primary	Storage	Engineering	Production	R	Roof vents with screens, tank overflow above land surface, overflow to have weighted cover with 1/16" gap, readable pressure gauge 3" or larger, no vacuum breakers located on sample point labeled POE sample point	
Chemical & Electrical Buildings	Exterior	Engineering	Facilities	R	Bricks should be of earth tones	

SAWS FACILITY CHECK LIST - PUMP/LIFT STATIONS

NOV 2010

Initial Approvals: Inspections at substantial completion.		Signatures:	
Engineering	Inspector Name:	_____	Date:
Security	Josh Dean or Cody Moos	_____	Date:
Fac Maint	John Kaznowski or Designated	_____	Date:
RPC	Kirk Nixon	_____	Date:
Production	Scott Okland or Designated	_____	Date:
Notes:			
Final Approvals: Required before project is released.		Signatures:	
Engineering	Inspector Name:	_____	Date:
Security	Josh Dean or Cody Moos	_____	Date:
Fac Maint	John Kaznowski or Designated	_____	Date:
RPC	Kirk Nixon	_____	Date:
Production	Scott Okland or Designated	_____	Date:
Notes:			

Primary Group
Secondary Group
System

Row Labels

Access

Adequate ingress & egress from the site
Cost to extend infrastructure to the property
Do all weather roads provide access to pumps, building, etc. (i.e. all weather roads often not installed near facilities)

Cables

Are the cables supplied the appropriate type
Is all wiring and wiring connections appropriate for switch/router, cameras, DVR, power supplies, etc.

Camera

Are cameras mounting using appropriate hardware
Are the cameras connected to the appropriate power supply units
Are the cameras in the appropriate location
Is CCTV system installed with the appropriate model and type of camera

Card Readers

Are card reader/s installed correctly
Are card reader/s the appropriate models
Do card readers function appropriately

Casing

Concrete sealing block extending at least 3' from the well casing in all directions, with a minimum thickness of 6" well casing extend a

Chlorination Rooms

Adequate ventilation (high & floor level screened vents), for all gas chlorine storage enclosures.
Equipment & cylinders may be installed outside of the buildings when protected from adverse weather conditions and vandalism.
Forced air ventilation required for enclosures containing more than (1) 150lb cylinder of chlorine which includes: screened and louvered floor level & high level vents; fan located at & draws air in through the top vent & discharges to outside atmosphere through the floor level vent;
Housing for gas chlorination equip & cylinders of chlorine shall be in separate buildings or rooms with impervious walls or partitions
Housing shall be located above ground level as a measure of safety.
If negative pressure ventilation is installed the facilities must have gas containment & treatment as prescribed by current Int'l Fire Code (ILC).
When chlorine gas is used, a full-face self-contained breathing apparatus or supplied air respirator that meets OSHA standards for construction and operation, & small bottle of fresh ammonia solution (or approved equal) for testing for chlorine leakage shall be readily accessible outside

DVR

Is the DVR unit supplied the model specified

Elevation

Identify point of discharge for overflows
Elevation (min & max) critical for booster & tank site selections. Also, validate adequate drainage for peak flows.

Enclosure

Is the security enclosure supplied the unit specified, with appropriate ventilation for the equipment it contains.

Encoder/Decoder/Servers

If encoders/decoders/camera servers are required, are the units supplied per specifications

Fencing

Color & fence variations need prior approval (ornamental, powder coating, sprayed/baked, etc.)
Is fence installed with approved materials in the manner specified
Is fence installed with maximum clearance of six inches above finished grade
Is fence installed free of any large gaps (those greater than 6 inches) at sides/corners
Intruder-resistant fence--A fence six feet or greater in height, constructed of chainlink mesh (9 ga minimum) with three strands of barbed wire (9 ga minimum) extending outward from the top of the fence at a 45 degree angle with the smooth side of the fence on the outside wall. Any
Is fence installed with a minimum of 12 inch mow strip, with galvanized anchors every 3-5 feet.
Is maximum fence post span 10 feet or less

Fireman's Box

Is the fireman's box installed correctly

Is the fireman's box the correct model

Gate Operator

Are exit/safety loops installed at required distances

Do exit/safety loops function properly

Do limit switches appear to be set appropriately

Does operator appear to be adequately anchored

Is gate operator the unit specified

Is gate operator wired appropriately to security access control system

Gates

Does gate have an adequate catch to ensure the gate can not be pushed in or pulled out to create a large gap

Does gate operate smooth and freely, without undue stress on gate operator

Is gate installed free of any large gaps at sides

Is gate installed with approved materials in the manner specified

Is gate installed with maximum clearance of six inches above finished grade

Do all manual gates contain appropriate locks (i.e. SAWS approved depending on type of site, i.e. Production - Medeco lock)

Is gate installed with minimum height of 72 inches for fence fabric (generally chain link), plus 3 strands of barbed wire or using fabric/material

General

Contractor to remove all temp elec/phone services, including poles

Contractors required to maintain vegetation until fully established

Include privacy and screening requirements in specs

Large rocks, excess debris & silt fences removed from site

Grade

Grade well site so that surface waters drain away from well head

Located wholly above grade and must be of steel construction with welded seams except as provided in paragraph (8) of this subsection.

Irrigation

Irrigation systems not required or recommended due to access and maintenance issues. They are considered on a case by case basis and only if

Landscape

Consider eliminating landscaping on small Production sites (monitoring wells) and use alternatives (weed barriers, crushed granite, concrete...)

Within the 12' clearzone on either side of the fence there should be no planted material or landscape feature that is taller than 24" or wider than 15" at full maturity. This landscape should not be planted directly against the fence. If landscape is provided for visual screening of the

Lighting

Does site lighting appear adequate

Location

Installed in lockable building designed to prevent intruder access or enclosed by an intruder-resistant fence with lockable gates.

Panel

Does the access control panel function appropriately

Does the access control panel include the appropriate relays

Is the access control panel the appropriate model

Is the access control panel wired to the switch/router appropriately

Pressure

Air injection lines must be equipped with filters or other devices to prevent compressor lubricants and other contaminants from entering the

Have a pressure release device & an easily readable pressure gauge.

Provided for maintaining the air-water-volume at the design water level and working pressure.

Pumps

No water leaking on floor, pump base or surrounding areas.

Pump/motor should be clean and no grease or oil should be present.

Water from pump stuffing box properly drained.

Radio

If a radio is required are appropriate antennas installed

If a radio is required are the those provided appropriate

If a radio is required are the units mounted correctly

If a radio is required verify all connections are per manufactures specifications

If a radio is required verify appropriate license key and software key are installed

If a radio is required verify the performance of the links to ensure bandwidth is acceptable.

If a radio is required are appropriate Lighting Protection Units (LPU) installed.

Sample Point

Locate raw water sample point on head works, prior to any valves or air release

No vacuum breakers located on sample points Sample point labeled "Raw Water Sample Point." Also, any external points of entry (POE) must

Signage

Include signage in plans & specs

Site Selection

Special requirements of community/ HOA (landscaping, lights, fencing)

Title or deed restrictions that may prohibit use of property as site

Environmental Site Assessment (ESA) must be performed during feasibility period of Purch Agreement

Storage

Roof vents with screens, tank overflow above land surface, overflow to have weighted cover with 1/16" gap, readable pressure gauge 3" or

Switch

Is the switch/router the unit specified

Tank Site

Ground or elevated tank dependent on property size

Trees

Trees planted far enough from fenceline to prevent individuals from using them to climb over fence and gain access to the site. There should

Trees & shrubs set back from property line and planted far enough back (minimum of 12 feet) from fenceline to allow room for maintenance

UPS

Does the UPS have the appropriate management card installed

Is the UPS management card connected to the switch/router supplied

Is the UPS the unit specified

Vandal Guard

For sites with tanks, is the vandal guard installed a minimum of six feet from finished grade and are all tank man-way/hatch openings secured

Vent

Casing vent with 16 mesh or finer corrosion resistant screen facing downwards.