



WASTEWATER TREATMENT PLANT POLICY

Effective Date: September 13, 2004

Cancels:

See Also: POL 29.10

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Approved By Director of Public Works:

Annual Review By: Operations Supervisor

POL 32.09 SAFETY

A safety plan is established to meet the particular hazards of treatment plant operation.

1. Providing a Safe Working Environment for all Employees

Management is responsible for providing a safe working environment as described in the Plant Safety Plan, City Accident Prevention Plan, Bloodborne Pathogen Exposure Control Plan and the Lab Safety Program.

2. Following Safety Directives

Supervisors and Employees will follow the directives established in the Plant Safety Plan, City Accident Prevention Plan, Bloodborne Pathogen Exposure Control Plan and the Lab Safety Program.

3. Training Employees

Employee safety training will be completed with new employee orientation, monthly safety meetings, annual BBP training and training updates to existing safety plans. The Operations Supervisor will maintain a record of all training provided. All employees will receive CPR and First Aid training in accordance with State and Federal guidelines.

4. Reviewing Plans and Programs

The Operations Supervisor will be responsible for insuring that all plant plans and programs are reviewed on an annual basis. The City Safety Committee will review the citywide policies annually.



WASTEWATER TREATMENT PLANT POLICY

Effective Date: February 25, 2005
Cancels: NEW
See Also:

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Approved By Director of Public Works:
Review By: Operations Supervisor

POL 32.07 PEAK FLOWS

Water Pollution Control facility procedures include a description of plant operating activities during peak flows.

1. Definition:

A peak flow is when the influent flow is excess of 9.8 MGD, and
The influent wetwell high level alarm is activated, or
The manual barscreen gate opens.

2. Beginning of Peak Flow Management Operation

Both the high influent wetwell and the manual barscreen gate opening are alarm conditions that will alert the Plant Staff or call out the Duty Operator.

3. Notification:

Supervisors will be notified immediately when an alarm condition exists and will assign Operators to monitor the plant during the peak flow event.

4. Continuous Monitoring is Required During Peak Flow Conditions

Operators will rake the manual barscreen and watch for hydraulic overloading of treatment processes for the duration of the event. The Plant will be monitored 24 hours a day for as long as the peak conditions exist.



WASTEWATER TREATMENT PLANT PROCEDURE

Effective Date: February 25, 2005
Cancels: NEW
See Also: POL 32.07

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Approved By: Plant Manager
Review By: Operations Supervisor

PRO 32.0701 **RESPONDING TO PEAK FLOWS**

Action by:

Action:

Operator

1. **Receives** an alarm for high influent wet well or #3 barscreen gate open.
2. **Acknowledges** the alarm and checks plant flow.
3. **Notifies** a Supervisor of the alarm condition.

Supervisor

4. **Checks** current weather conditions and predicted rainfall.
5. **Schedules** Operators to monitor the plant during the event.

Scheduled Operator

6. **Monitors** flow through the treatment process.
7. **Checks** for influent flow in excess of pump capacity.
 - 7a. If influent flow exceeds 10 MGD, **throttles** back influent gates to reduce flow.
8. **Monitors** chlorination process to insure proper function.
9. **Rakes** manual barscreen as needed.
10. **Checks** grit classifier for continuous operation.
11. **Checks** sewer level at key manholes in collection system as directed by Supervisor.
12. **Logs** activities in Operations Log Book.



WASTEWATER COLLECTION AND CONVEYANCE

POLICY

Effective Date: January 13, 2005

Cancels: NEW

See Also: NPDES Permit

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Approved By Director of Public Works:

Triennial Review By: Operations Supervisor

POL 29.08 SANITARY SEWER OVERFLOWS

An overflow event is the release of untreated sewage to the environment or inside of a building not including permitted combined sewer overflow points.

Causes of overflow events include:

- Overtopping of manholes
- Overflow of pump station wet wells
- Force main pipeline breaks
- Air release valve failures
- Sewer line blockages
- Sewer main or line failures
- Flow exceeding the capacity of the collection system

1. Overflow Events Require Emergency Response

Division managers mobilize personnel to stop, control, contain and cleanup the spill.

- Operations Manager is responsible for overflows caused by the gravity collection system.
- Wastewater Manager is responsible for overflows caused by the conveyance system.
- Operations and Wastewater work together to prevent, contain and/or clean up the spill.

2. Overflow Events Require Notification

The Operations or Wastewater Manager notifies the following authorities (TSK 29.0804.01) and files a detailed written report (TSK 29.0804.02).

- Public Works Director
- Department of Ecology
- Skagit County Department of Health
- Department of Health, Shellfish
- Washington Cities Insurance Authority (WCIA) – if there is potential private property damage (TSK 29.0804.01).

3. Containing the Hazard

The Operations or Wastewater Manager ensures the contaminated area is barricaded off and evaluates the event to eliminate hazards, both current and future, to the public health and environment.

4. Public Works Director Requires Prevention Measures to be Taken

- Establishment of a gravity sewer cleaning schedule
- Video inspection of the collection system
- Verification of capacity with each new development
- Battery backup alarm system in all pump stations
- Redundant pump, valve and control system in all pump stations
- Emergency power generation system at plant and in all pump stations



WASTEWATER COLLECTION AND CONVEYANCE PROCEDURE

Effective Date: January 25, 2005
Cancels: NEW
See Also: POL 29.08

Page 1 of 2
Approved By: Plant Manager
Annual Review By: Operations Supervisor

PRO 29.0801 RESPONDING TO AN OVERFLOW EVENT

Action by:

Action:

Plant Manager

1. Upon notification of an overflow event, **evaluates** the resources needed to stop, contain or control the event.
2. **Assigns** a Wastewater response team to stop and control the spill.
3. **Contacts** the Operations Manager to mobilize personnel.

Operations Manager

4. **Assigns** an Operations response team to contain the spill.

Response Team

5. If the spill is in a traffic area, **diverts** traffic away from the spill area with barriers and/or flaggers.
6. **Contains** the spill with sandbags or other barriers.
7. **Blocks** storm drains and other runoff points to prevent spill from reaching receiving waters.

Sewer Jet Crew

8. **Removes** as much of the spill as possible with the vacuum truck.

Response Team

- 9a. If the spill is on pavement, **hoses** down the spill area thoroughly using the vacuum truck to pick up the rinse water.

-OR-

- 9b. If the spill is on bare ground, **removes** the contaminated soil.

10. **Returns** the site to the condition it was in before the spill.

11. **Completes** other cleanup tasks as directed by the Health Department, supervisors or other state authorities.
12. **Reports** clean up measures taken to Plant Manager and/or Operations Manager (TSK 29.0804.01).
13. **Reports** the overflow event to the required authorities (TSK 29.0804.02).

Plant Manager



WASTEWATER COLLECTION AND CONVEYANCE

TASK

Effective Date: February 28, 2005

Cancels: NEW

See Also: POL 29.08, PRO 29.0801, PRO 29.0804

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Approved By: Plant Manager

Review By: Operations Supervisor

TSK 29.0804.02 REPORTING A SEWER OVERFLOW EVENT

Within five calendar days of a sewer overflow event, the

Plant Manager:

1. **Receives** notification of the event.
2. **Investigates** the cause of the event.
3. **Gathers** data about the event including start time, duration, estimated volume discharged, area affected and point of entry into receiving waters if any.
4. **Writes** a detailed report on the event including the steps taken to prevent a reoccurrence.
5. **Submits** the written report to the Department of Ecology, Skagit County Health Department and the Department of Health, Shellfish.



WASTEWATER COLLECTION AND CONVEYANCE

TASK

Effective Date: February 28, 2005

Cancels: NEW

See Also: POL 29.08, PRO 29.0801, PRO 29.0804

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Approved By: Plant Manager

Review By: Operations Supervisor

TSK 29.0804.01 NOTIFYING AUTHORITIES OF OVERFLOW EVENT

Upon receiving notice of an overflow event, the **Supervisor:**

1. **Gathers** information about the event including start time, duration, estimated volume and affected area.
2. **Phones** the Department of Ecology (425-649-7000) to report the incident and pass on information gathered.
3. **Phones** the Skagit County Health Department (360-336-9474, ext. 5474) to report the incident and pass on information gathered.
4. **Phones** the Department of Health, Shellfish (360-236-3330 during business hours, 360-786-4183 after hours) to report the incident and pass on information gathered.
5. If the release to the environment includes possible property damage, **notifies** WCIA Monday through Friday from 8 a.m. to 5 p.m. at (206) 575-6046 to report the incident, **passes** on information gathered and **takes** and **submits** photos of the incident.
 - 5a. After hours and on weekends, **contacts** Evergreen Adjustment Services at (800) 933-4235.
6. **Contacts** the Plant Manager, Operations Manager and Public Works Director to report the incident.
7. **Writes** a summary of the event to be given to the Plant Manager.



WASTEWATER COLLECTION AND CONVEYANCE PROCEDURE

Effective Date: January 19, 2005

Cancels: NEW

See Also: POL 29.08, NPDES Permit

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Approved By: Plant Manager

Annual Review By: Operations Supervisor

PRO 29.0804 **REPORTING A SEWER OVERFLOW EVENT**

Action by:

Operator

1a. **Receives** notification of the sewer overflow.

-OR-

1b. **Discovers** the overflow event.

2. **Notes** the start time, location and duration of the event.

3. **Reports** the event and data noted in Step 2 to a Supervisor.

Supervisor

4. **Contacts** the required authorities to notify them of the event. (TSK 29.0804.01).

5. **Investigates** the event noting the following (FRM O24):

- Start time
- Duration
- Estimated volume discharged
- Area affected
- Point of entry into the receiving waters, if any

6. **Submits** the information to the Plant Manager.

Plant Manager

7. **Writes** a detailed report within five calendar days of the event (TSK 29.0804.02).

8. **Submits** the report to the required authorities.

9. **Files** a copy of the report for record.

WWTP Standard Operating Procedures Pump Station #13 Chemical Handling Bioxide

August 25, 1999

I. General Precautions

A. Safety Precautions

Wear safety glasses and gloves when transferring Bioxide.
Review the MSDS prior to handling Bioxide.

II. Receiving Bioxide at PS #13

1. Load the large tote on truck #101 and strap it down with two straps. Use blocks to prevent tote from sliding while in motion.
2. Use truck #101 when meeting the delivery driver at PS#13.
3. Have the truck driver back up near the fill station.
4. Have the truck driver connect his hose to the fill line on the bottom of the Bioxide tank.
5. Open the fill line valve.
6. Wait until the tank is full.
7. Close the fill line valve.
8. Have the truck driver pump the remainder of his load into the tote as needed.
9. Allow the truck driver to disconnect his hose, cap it and put it back on his truck.
10. If PS#14 also needs bioxide, that delivery may be made while the tote is still on truck#101. Follow the Pump Station #14 Chemical handling SOP.
11. Document the Bioxide delivery in the logbook when you return to the plant.

Note: The tote can not be removed from truck #101 with the forklift if bioxide is filled above the blue line on the tote. See a foreman if this situation arises.

III. First Aid for Chemical Exposures

Refer to MSDS for additional information.

A. Eyes:

Flush thoroughly with water for 15 minutes and get medical assistance.

B. Skin:

Flush skin with soap and water. Get medical attention.

C. Ingestion:

Seek medical attention immediately. Induce vomiting if conscious.

D. Inhalation of spray or dust:

Remove to fresh air and get immediate medical assistance.

IV. Spill Reporting

Bioxide is not a hazardous material.

V. Spill Cleanup

Wear the appropriate PPE (see page 1).

A. Land/Liquid Spill:

Flush small spills into the wet well. For larger spills, contain the spill and recover as much Bioxide as possible and pump into the Bioxide tank. Discharge the remaining liquid directly into the wet well. Rinse the area and discharge the wash water into the wet well.

B. Solid Waste:

Dispose of solid waste in a dumpster.

WWTP Standard Operating Procedures Pump Station #14 Chemical Handling Bioxide

August 25, 1999

I. General Precautions:

A. Safety Precautions

Wear safety glasses and gloves when transferring Bioxide.

Review the MSDS prior to handling Bioxide.

II. Preparation at WWTP

1. Place the tote on the bed of 101 using the forklift.
2. Use 2 straps to secure the tote to the bed of 101. Block tote to prevent sliding while in motion.
3. Get the orange electric submersible pump from the Polymer room and load it on the bed of 101.
4. Get the 2" hose from the poly room and load it on the bed of 101.
5. Load a traffic cone onto bed of 101.

III. Filling the 500 gal Tote at PS #13

The 500-gallon tote is filled from the Bioxide tank at Pump Station #13. The Bioxide at PS #14 is a 500-gallon tank. Check PS#14 tank level to confirm volume to be transferred.

Procedure for filling the tote:

1. Back the truck up to the PS#13 Bioxide tank.
Caution: Unprotected piping extends from the tank. Be aware of where the piping is when backing
2. Chock the wheels.
3. Put the outriggers out.
4. Put on the proper PPE (see above).
5. Remove the cover on the Bioxide tank.
6. Remove the cover on the tote.
7. Connect the discharge hose to the submersible pump.
8. Hook the pump onto the crane on 101.
9. Use the crane to move the pump over the opening in the top of the bioxide tank.
10. Secure the pump discharge line in the top of the tote by wedging the hose in place using a cone placed upside down in the opening.
11. Plug the pump cord in.

12. Use the crane to lower the pump into the Bioxide tank, just below the surface.
13. Fill the tote to the desired level.
14. Use the crane to lift the pump until it breaks suction
15. Unplug the cord on the pump.
16. Allow the bioxide to drain into the tank and the tote.
17. Pull the hose from the tote to prevent siphoning.
18. Lower the pump to the ground.
19. Unhook the pump and place it on the bed of 101.
20. Put the crane away.
21. Replace the cover on the tote.
22. Replace the cover on the Bioxide tank.
23. Put the outriggers up.
24. Put the chocks away.

IV. Hauling Bioxide to PS #14

A. Required Placard and Paperwork

Placard: N/A

Paperwork: Carry a copy of the **MSDS** during transport.

V. Filling the Bioxide Tank at PS#14

1. Park parallel to the gate at PS #14 close to the fence with the back of the truck near the gate opening.
2. Connect the transfer hose from the pump to the camlock fitting on the tote.
3. Loosen the lid on top of the tote.
4. Remove the cover on top of the Bioxide tank.
5. Place the discharge end of the transfer hose on the tank fill port.
6. Open the valve on the tote.
7. Empty the contents of the tote into the Bioxide tank.
8. Close the valve on the tote.
9. Allow the Bioxide in the transfer hose to completely drain by gravity.
10. Unhook the transfer hose from the tote and the fill port.
11. Close the lid on the tote.
12. Replace the cover on the Bioxide tank.
13. When you return to the plant use the forklift to remove the tote from the bed of the truck and place it on the ground next to the plant drain by the Solids Handling building.
14. Rinse the tote into the plant drain.
15. Use the forklift to move the tote onto the sidewalk in front of the Odor control Facility.

16. Document the Bioxide transfer in the logbook when you return to the plant.

VI. First Aid for Chemical Exposures

Refer to MSDS for additional information.

A. Eyes:

Flush thoroughly with water for 15 minutes and get medical assistance.

B. Skin:

Flush skin with soap and water. Get medical attention.

C. Ingestion:

Seek medical attention immediately. Induce vomiting if conscious.

D. Inhalation of spray or dust:

Remove to fresh air and get immediate medical assistance.

VII. Spill Reporting

Bioxide is not a hazardous material.

VIII. Spill Cleanup

Wear the appropriate PPE (see page 1).

A. Land/Liquid Spill:

Flush small spills into the wet well. For larger spills, contain the spill and recover as much Bioxide as possible and pump into the Bioxide tank.

Discharge the remaining liquid directly into the wet well. Rinse the area and discharge the wash water into the wet well.

B. Solid Waste:

Dispose of solid waste in a dumpster.

WWTP Standard Operating Procedures Pump Station #15 Chemical Handling Activated Carbon

November 17, 1997

I. General Precautions:

A. Safety Precautions

Wear safety glasses and gloves when handling activated carbon. Wear a half mask respirator with a NIOSH P100 cartridge when emptying and refilling the carbon canister. A face shield, rubber boots, and rain gear are optional items that may be worn to keep the dust off of clothing during carbon transfer.

Review the MSDS prior to handling Activated Carbon.

II. Hauling Activated Carbon to PS #15

A. Procedure:

1. The activated carbon arrives at the plant in eight 55lbs bags
2. Place the bags on the bed of 101 using the forklift and secure the load.
3. Take the 20-foot section of 4" flexible hose for the sewer jet with you.
4. Take the hand truck to help move the bags.

B. Required Placard and Paperwork

Placard: N/A

Paperwork: Carry a copy of the MSDS during transport.

III. Emptying the Carbon Canister at PS#15

1. Connect the 20-foot section of 4" flexible hose to the sewer jet.
2. Put on a respirator.
3. Use water to hose down the carbon while the sewer jet vacuums the carbon out of the canister.
4. Disconnect the 20-foot hose from the sewer jet.
5. Rinse the sewer jet hose into the wet well.

IV. Refilling the Carbon Canister at PS#15

1. Offload the bags onto the ground.
2. Move the bags of new carbon over to the carbon canister using the hand truck.
3. Wear a respirator while filling the carbon canister.
4. Use proper lifting techniques when pouring the bags into the canister.
5. There are four bags of carbon for each canister.
6. Dispose of the empty bags in the dumpster at the WWTP.
7. Hose down the inside of the building if there is carbon dust inside.
8. Hose the outside of the building off.

V. First Aid for Chemical Exposures

Refer to MSDS for additional information.

A. Eyes:

Flush with water for at least 15 minutes, occasionally lifting the upper and lower eyelids.

Consult physician if irritation persists.

B. Skin:

Activated carbon is not a primary skin irritant. Wash with soap and water after the work is completed

C. Inhalation:

The physical nature of this product may irritate the respiratory system. A high efficiency particulate filter is recommended whenever excessive dust may be generated.

D. Other Caution:

Wet activated carbon removes oxygen from the air. Although P.S. #15 canisters are located outside, a low oxygen condition could exist in the canister or in closed areas around it.

VI. Spill Reporting

Activated carbon is not a hazardous material.

VII. Spill Cleanup

Wear the appropriate PPE (see page 1).

A. Land Spill:

Sweep up the spill and dispose of in a protected refuse container.

B. Solid Waste:

Dispose of solid waste in a dumpster.

WWTP Standard Operating Procedures Pump Station #15 Chemical Handling Sodium Hydroxide (NaOH)

November 3, 1998

I. General Precautions

A. Safety Precautions

Wear safety glasses, a face shield, gloves, rubber boots, and rain gear when working with NaOH.

Review the MSDS prior to handling Sodium Hydroxide.

II. General Information

Sodium hydroxide is usually delivered directly to PS#15 in mini-bulk delivery. The truck driver unloads the NaOH from the truck into the 80-gallon storage tank. Occasionally the NaOH is used up before a delivery can be made; in this case transfer no more than 75 gallons of NaOH at a time to the pump station until a mini-bulk delivery can be made. This transfer can be made in 5-gallon carboys or in the 120-gallon tote.

III. Mini-bulk delivery

A. Procedure:

1. Open the pump station and shut off the intrusion alarm.
2. Prop open the double doors to the scrubbing tower room to give access to the emergency shower / eyewash.
3. Record the initial tank volume.
4. Have the truck driver back into the pump station.
5. Open the tank fill port door and remove the cap for the NaOH line.
6. Have the truck driver fill the tank directly through the fill port.
7. Fill to 75 gallons or the red line on the sight glass.

Note: the level sensor can be read inside the fill port room or a second person can be stationed in the scrubber room to watch the sight glass level.

8. Wait for the truck driver to put his hose away.
9. Replace the cap on the fill line and close the fill port door.
10. Record the final tank volume.
11. Clean up any spills using the spill cleanup procedures described below.
12. Close up all open doors. Reset the intrusion alarm and lock the pump station
13. Return to the plant.
14. Record and enter the volume delivered into OP10, on form ops O10 and at the misc. screen / chemical delivery on the PMP.

IV. Carboy Delivery

A. Procedure at WWTP

1. Put on proper PPE (see above).
2. Bring carboy(s) to odor control facility NaOH containment area.

3. Get the 1" black hose from the wall by the NaOH storage tank.
4. Connect the hose to NaOH drain valve.
5. Open the tank drain valve and fill the carboy(s).
6. Close the drain valve. Disconnect and rinse the transfer hose.
7. Place lid(s) on carboy(s) and rinse off any spills.

V. Hauling NaOH Carboys to PS#15

A. Procedure

1. Place carboy(s) in the back of the truck.
2. Secure the carboy(s).

B. Required Placard and Paperwork

Placard: N/A

Paperwork: Carry a copy of the MSDS during transport.

VI. Filling the NaOH Storage Tank at PS#15

1. Open the pump station and shut off the intrusion alarm.
2. Remove all but one bolt from the NaOH storage tank cover.
3. Pivot the cover so the top of the tank is open.
4. Get step ladder from wall by light switch and place it in the containment area between the chemical tanks. Be sure the platform is closest to the NaOH tank.
5. Step up onto the ladder (if needed) remove the lid from the carboy and pour the contents into the NaOH storage tank.
6. Pivot the NaOH storage tank cover back into place and reinstall the bolts.
7. Remove the step ladder from the containment area and store it by the wall under the light switch.
8. Close up the pump station and reset the intrusion alarm.
9. Return to the plant.
10. Rinse the carboy into a plant drain.
11. Record and enter the volume transferred into OP10, on form ops O10 and at the misc. screen / chemical delivery on the PMP as a decrease in WWTP NaOH and an increase in PS#15 NaOH.

VII. Filling the 120-Gallon Tote

The 120-gallon tote is filled from the sodium hydroxide storage tank in the odor control facility. The NaOH tank at PS #15 is an 80-gallon tank. Do not fill the tote with more than 75 gallons of NaOH. Use this procedure only when the mini-bulk delivery can't be made.

A. Procedure for transfer to the tote:

1. Put on the proper PPE (see above).
2. Use the forklift to move the tote onto the pavement by the odor control facility.
3. Get the air diaphragm pump from the parts storage room and place the pump on the catwalk next to the sodium hydroxide tank.
4. Connect the pump to the portable air compressor.
5. Get the 1" black transfer hose from the wall by the NaOH storage tank.

6. Connect the pump inlet hose to the sodium hydroxide tank drain line.
7. Place the end of the pump discharge hose in the tote.
8. Open the sodium hydroxide tank drain valve.
9. Start the pump.
10. Fill the tote with the required volume of NaOH. (No more than 75 gallons)
11. Shut the pump off.
12. Close the NaOH tank drain valve.
13. Disconnect the hose from the drain valve.
14. Drain the hose by allowing the NaOH to drain backwards through the pump into the NaOH containment basin.
15. Move the end of the pump discharge hose into the NaOH containment sump.
16. Connect the pump inlet hose to water.
17. Turn on the water.
18. Run the pump with water to flush the NaOH out of the hose and the pump.
19. Discharge the water into the containment sump.
20. Disconnect the hose from the pump.
21. Return the pump to the parts storage room.
22. Put the hose back on the wall by the NaOH storage tank.
23. Replace the lid on the tote.
24. Hose down any spills.

VIII. Hauling NaOH to PS #15

A. Procedure:

1. After filling the tote put it on the bed of 101 using the forklift.
2. Use 2 straps to secure the tote to the bed of 101.

B. Required Placard and Paperwork

Placard: N/A

Paperwork: Carry a copy of the **MSDS** during transport.

Note:

The reportable quantity for sodium hydroxide is 1000 lbs (approximately 99 gallons of 25% NaOH). Do not transport more than 75 gallons of NaOH at a time; volumes greater than this require a CDL with a hazmat endorsement.

IX. Filling the NaOH Storage Tank at PS#15

1. Back the truck up to the chemical fill station.
2. Open the pump station and shut off the intrusion alarms.
3. Prop open the door by the emergency shower.
4. Charge the hose for use in case of a spill. Two operators perform this job, however there does not need to be a designated safety observer since there is a safety shower at the pump station.
5. Get the NaOH transfer hose out of the transfer piping room (the empty room).
6. Connect the 2" cam lock fitting on the transfer hose to the cam lock fitting in the chemical fill station.

7. Connect the other end of the transfer hose to the 2" cam lock fitting on the tote.
8. Loosen the lid on top of the tote.
9. Open the valve in the fill station.
10. Open the valve on the tote.
11. Empty the contents of the tote into the sodium hydroxide tank.
12. Close the valve on the tote.
13. Allow the NaOH in the transfer hose to completely drain by gravity.
14. Close the valve in the fill station.
15. Close the lid on the tote.
16. Remove the transfer hose from both the tote and the fill station.
17. Rinse the transfer hose (inside and outside) into the wet well to remove all NaOH.
18. Return the transfer hose to the transfer piping room.
19. Clean up any spills using the spill cleanup procedures described below.
20. Reset the intrusion alarm and lock up the pump station.
21. When you return to the plant use the forklift to remove the tote from the bed of the truck and place it on the ground next to the plant drain by the Solids Handling building.
22. Rinse the tote into the plant drain.
23. Use the forklift to move the tote onto the sidewalk in front of the Odor control Facility.
24. Record and enter the volume transferred into OP10, on form ops O10 and at the misc. screen / chemical delivery on the PMP as a decrease in WWTP NaOH and an increase in PS#15 NaOH.

X. First Aid for Chemical Exposures

Refer to MSDS for additional information.

A. Hazard Category: Acute

B. Eyes:

Immediately flush with large quantities of running water for at least 15 minutes. Hold eyelids open while rinsing and occasionally lift the upper and lower eyelids. Do not attempt to neutralize with chemical agents. Seek medical attention immediately. Flush an additional 15 minutes if a physician is not available.

C. Skin:

Immediately flush skin with running water for at least 15 minutes while removing contaminated clothing and shoes. Do not attempt to neutralize. Get medical attention. Wash all clothing before reuse. Dispose of contaminated shoes.

D. Ingestion:

Give several glasses of water if victim is conscious. Do NOT induce vomiting.
Seek medical attention immediately.
Do not give anything by mouth if person is unconscious or if having convulsions.

E. Inhalation:

Stop work immediately and move to fresh air. If breathing has stopped give CPR to person.
Seek medical attention if the exposure is severe.

XI. Spill Reporting

A. Reportable Quantity

The Reportable Quantity is 1000 lbs. This is approximately 99 gallons of 25% NaOH.

Reportable Quantity - the amount of chemical, when spilled, that must be reported to DOT (traffic accident) or the National Response Center (on-site spill to the environment).

Note: Skagit County Department of Emergency Management duties include notifying the required state and federal authorities (i.e. the DOT and the National Response Center).

B. Notification

Chemical Transfer - When transferring NaOH we only handle quantities less than the reportable quantity. If there is a spill released to the environment contact a WWTP supervisor then follow the spill cleanup procedures.

Mini-Bulk Deliveries - If there is a spill greater than the reportable quantity released to the environment radio the WWTP and have someone call 911, then notify a WWTP supervisor. The supervisor will call the State Department of Emergency Management (1-800-562-6108). 911 personnel will dispatch the appropriate emergency response agencies.

XII. Spill Cleanup

Wear the appropriate PPE (see page 1).

A. Land/Liquid Spill:

Contain the spill and recover as much NaOH as possible and pump into the NaOH tank. Discharge the remaining liquid directly into the wet well (no more than 80 gallons at one time). Dig up the contaminated soil; place it in a drum and dispose of the drum at a hazardous waste disposal site. Check the pH of the remaining soil against uncontaminated soil nearby to see if the pH is normal. If the pH is high, then dig up more soil and place it in a drum. Continue until the pH is normal.

Neutralizing NaOH – Only neutralize the final traces of NaOH after flushing with water. Use a dilute mild acid (acetic acid or oxalic acid) to neutralize to a pH of 6 – 9.

B. Solid Waste:

Dispose of solid waste at a hazardous waste disposal site.

WWTP Standard Operating Procedures Pump Station #15 Chemical Handling Sodium Hypochlorite (NaOCl)

November 17, 1997

I. General Precautions

A. Safety Precautions

Wear safety glasses, a face shield, gloves, rubber boots, and rain gear when transferring NaOCl .

Review the MSDS prior to handling Sodium Hypochlorite.

II. General Information

Sodium hypochlorite is usually delivered directly to PS#15 in mini-bulk delivery. The truck driver unloads the NaOCl from the truck into our 80-gallon storage tank. Occasionally the NaOCl is used up before a delivery can be made; in this case we transfer 5 gallons of NaOCl at a time to the pump station until a mini-bulk delivery can be made.

III. Mini-bulk delivery

A. Procedure:

1. Open the pump station and shut off the intrusion alarms.
2. Prop open the double doors to the scrubbing tower room to give access to the emergency shower / eyewash.
3. Record the initial tank volume.
4. Have the truck driver back into the pump station.
5. Open the tank fill port door and remove the cap for the NaOCl line.
6. Have the truck driver fill the tank directly through the fill port.
7. Fill to 75 gallons or the red line on the sight glass.

Note: the level sensor can be read inside the fill port room or a second person can be stationed in the scrubber room to watch the sight glass level.

8. Wait for the truck driver to put his hose away.
9. Replace the cap on the fill line and close the fill port door.
10. Record the final tank volume.
11. Clean up any spills using the spill cleanup procedures described below.
12. Close up all open doors. Reset the intrusion alarm and lock the pump station
13. Return to the plant.
14. Record and enter the volume delivered into OP10, on form ops O10 and at the misc. screen / chemical delivery on the PMP.

IV. Preparation at WWTP for NaOCl transfer

A. Procedure for filling the carboy:

1. Place a 5 gallon carboy on the fiberglass box under the #2 NaOCl day tank sight glass.

2. Center the carboy so the sight glass will drain into the carboy.
3. Open the sight glass drain valve and fill the carboy.
4. Shut the sight glass drain valve.
5. Put the lid on the carboy.
6. Hose down any spills.

V. Hauling Sodium Hypochlorite to PS #15

A. Procedure:

1. Place the carboy in the back of the truck.
2. Secure the carboy.

B. Required Placard and Paperwork

Placard: N/A

Paperwork: Carry a copy of the **MSDS** during transport.

Note:

The reportable quantity for sodium hypochlorite is 100 lbs (15 gallons of 8% OCl^- or 10 gallons of 13.5% OCl^-). Do not transport more than 10 gallons of OCl^- at a time; volumes greater than this require a CDL with a haz mat endorsement.

VI. Filling the OCl^- Storage Tank at PS#15

1. Open the pump station and shut off the intrusion alarms.
2. Remove all but one bolt from the OCl^- storage tank cover.
3. Pivot cover so the top of the tank is open.
4. Get step ladder from wall by light switch and place it in the containment area between the chemical tanks. Be sure the platform is close to the OCl^- tank.
5. Step up onto the ladder (if needed) remove the lid from the carboy and pour the contents into the OCl^- storage tank.
6. Pivot the OCl^- storage tank cover back into place and reinstall the bolts.
7. Remove the step ladder from the containment area and store it by the wall under the light switch.
8. Close up the pump station and reset the intrusion alarm.
9. Return to the plant.
10. Rinse the carboy into the plant drain.
11. Record and enter the volume transferred into OP10, on form ops O10 and at the misc. screen / chemical delivery on the PMP as a decrease in WWTP OCl^- and an increase in PS#15 OCl^- .

VII. First Aid for Chemical Exposures

Refer to MSDS for additional information.

A. Eyes:

Immediately flush with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower eyelids.
Seek medical attention immediately.

B. Skin:

Immediately flush skin with water for at least 15 minutes.

Seek medical attention if symptoms persist after washing the affected area.

If OCl^- gets on your clothing immediately remove all affected clothing and wash it before wearing it again.

C. Ingestion:

Immediately drink large quantities of water. Do NOT induce vomiting.

Seek medical attention immediately.

Do not give anything by mouth if person is unconscious or if having convulsions.

D. Inhalation:

Stop work immediately and move to fresh air. If breathing has stopped give CPR to person.

Seek medical attention if the exposure is severe.

VIII. Spill Reporting

A. Reportable Quantity

The Reportable Quantity is 100 lbs. This is approximately 15 gallons of 8% OCl^- or 10 gallons of 13.5% OCl^- .

Reportable Quantity - the amount of chemical, when spilled, that must be reported to DOT (traffic accident) or the National Response Center (on-site spill to the environment).

Note: Skagit County Department of Emergency Management duties include notifying the required state and federal authorities (i.e. the DOT and the National Response Center).

B. Notification

Chemical Transfer - When transferring OCl^- we only handle quantities less than the reportable quantity. If there is a spill released to the environment contact a WWTP supervisor then follow the spill cleanup procedures.

Mini-Bulk Deliveries - If there is a spill greater than the reportable quantity released to the environment radio the WWTP and have someone call 911, then notify a WWTP supervisor. The supervisor will call the State Department of Emergency Management (1-800-562-6108). 911 personnel will dispatch the appropriate emergency response agencies.

IX. Spill Cleanup

Wear the appropriate PPE (see page 1).

A. Land Spill:

Contain the spill and recover as much OCl^- as possible for use in odor control. Use sand, clay soil, or commercial absorbents to absorb the remaining OCl^- .

If there is a spill to the soil, collect the soil. Place the soil on a screen and wash.

Collect the washings, neutralize using soda ash or hydrochloric acid and return to the wastewater collection system. The soil may be returned to its former location after it is thoroughly washed (the wash water has a Cl_2 residual <2 ppm).

B. Liquid Spills:

Neutralize large liquid spills using soda ash or hydrochloric acid to a Cl_2 residual < 2 ppm then put in the collection system for treatment at the wastewater plant. Small spills can be put directly into the collection system without neutralizing first.

C. Solid Waste:

Neutralize solid waste with soda ash or hydrochloric acid to a Cl_2 residual < 2 ppm then place in a bag and dispose of in a dumpster.

WWTP Standard Operating Procedures Pump Station #18 Chemical Handling Bioxide

October 22, 2004

I. General Precautions

A. Safety Precautions

Wear safety glasses and gloves when transferring Bioxide.
Review the MSDS prior to handling Bioxide.

II. Receiving Bioxide at PS #18

1. Have the truck driver back up near the fill station.
2. Have the truck driver connect his hose to the fill line on the bottom of the Bioxide tank.
3. Open the fill line valve.
4. Wait until the tank is full.
5. Close the fill line valve. Repeat the procedure on the second tank if needed.
6. Allow the truck driver to disconnect his hose, cap it and put it back on his truck.
7. Document the Bioxide delivery in the logbook, on ops form O10, into the chem. delivery page on the misc. screen of the PMP and in Op10 when you return to the plant.

III. First Aid for Chemical Exposures

Refer to MSDS for additional information.

A. Eyes:

Flush thoroughly with water for 15 minutes and get medical assistance.

B. Skin:

Flush skin with soap and water. Get medical attention.

C. Ingestion:

Seek medical attention immediately. Induce vomiting if conscious.

D. Inhalation of spray or dust:

Remove to fresh air and get immediate medical assistance.

IV. Spill Reporting

Bioxide is not a hazardous material.

V. Spill Cleanup

Wear the appropriate PPE (see page 1).

A. Land/Liquid Spill:

Flush small spills into the wet well. For larger spills, contain the spill and recover as much Bioxide as possible and pump into the Bioxide tank. Discharge the remaining liquid directly into the wet well. Rinse the area and discharge the wash water into the wet well.

B. Solid Waste:

Dispose of solid waste in a dumpster.

WWTP Standard Operating Procedures Pump Station #20 Chemical Handling Bioxide

October 22, 2004

I. General Precautions

A. Safety Precautions

Wear safety glasses and gloves when transferring Bioxide.
Review the MSDS prior to handling Bioxide.

II. Receiving Bioxide at PS #20

1. Have the truck driver back up near the fill station.
2. Have the truck driver connect his hose to the fill line on the bottom of the Bioxide tank.
3. Open the fill line valve.
4. Wait until the tank is full.
5. Close the fill line valve. Repeat the procedure on the second tank if needed.
6. Allow the truck driver to disconnect his hose, cap it and put it back on his truck.
7. Document the Bioxide delivery in the logbook, on ops form O10, into the chem. delivery page on the misc. screen of the PMP and in Op10 when you return to the plant.

III. First Aid for Chemical Exposures

Refer to MSDS for additional information.

A. Eyes:

Flush thoroughly with water for 15 minutes and get medical assistance.

B. Skin:

Flush skin with soap and water. Get medical attention.

C. Ingestion:

Seek medical attention immediately. Induce vomiting if conscious.

D. Inhalation of spray or dust:

Remove to fresh air and get immediate medical assistance.

IV. Spill Reporting

Bioxide is not a hazardous material.

V. Spill Cleanup

Wear the appropriate PPE (see page 1).

Responding To an Earthquake

When an earthquake strikes Department of Emergency Management advises that you “Drop, Cover and Hold. That is drop and cover under a desk or sturdy table. Stay away from windows, bookcases, file cabinets and other objects that could fall. Hold onto the desk or table; if it moves move with it. If outdoors, move to a clear area, away from trees, signs, buildings or downed electrical wires and poles. If driving slowly pull over to the side of the road and stop. Avoid overpasses, power lines and other hazards. Stay in your vehicles until the shaking stops.

After the earthquake; check yourself and those around you for injuries. Be prepared for aftershocks. A severe earthquake may necessitate the opening of the Emergency Operation Center. The wastewater treatment plant should take the following steps.

<u>Action by:</u>	<u>Action:</u>
Plant Manager	1. Checks on the welfare of all plant personnel. Injured people will be cared for as a first priority.
	2. Goes to the EOC (if activated) or sends a supervisor to represent the WWTP
	3. Assigns operators to investigate for damage starting with the main plant and outfall, then pump stations and force mains.
Main Plant Operator	4. Conducts a plant walkthrough noting equipment and structural damage.
	5. Reports findings to a supervisor.
Incinerator operator	6. Shuts down the incinerator and conducts an incinerator walkthrough noting equipment and structural damage.
	7. Reports findings to a supervisor.
Lab Operator	8. Checks lab for equipment or structural damage and assists in cleanup of lab following chemical hygiene plan.
	9. Reports any damage found to a supervisor
Supervisors	10. Evaluate the damage reports and plan for system operation around problem areas.
	11. Assigns remaining operators into teams to check pump stations and force mains for signs of damage.
	12. Plans for equipment and manpower needed to keep the system running.
	13. Reports damage and measures needed to be taken to the Plant Manager and/or the EOC
Wastewater Team	14. Plan for work schedules to cover 24 hours/day until the emergency condition is declared ended. This includes assignments to aid other PW Depts.

A. Land/Liquid Spill:

Flush small spills into the wet well. For larger spills, contain the spill and recover as much Bioxide as possible and pump into the Bioxide tank. Discharge the remaining liquid directly into the wet well. Rinse the area and discharge the wash water into the wet well.

B. Solid Waste:

Dispose of solid waste in a dumpster.

TSUNAMI EVENT

The Skagit County Natural Hazards Mitigation Plan has determined that there is a very low probability of a tsunami event impacting Skagit County. There is no written historical record of a damaging tsunami event within the Puget Sound. However, geological evidence shows that the Cascadia Subduction Zone has generated great earthquakes in the past, the most recent about 300 years ago. Any large earthquake has the capability to generate a tsunami.

A map at the back of this section shows the areas most likely to be affected by a tsunami event would be pump stations # 5 (ships harbor), #13 (Skyline Marina), #14 (Ferry Terminal), #8,-9-10 (lower sections of Cap Sante) and #4 (T Ave. near shore line). The map also shows the south fence line of the main plant could be within the reach of the surge area. There are many areas of the collection system and privately owned pump stations; such as the RV Park and the Cap Sante Marina, that could be flooded in the surge.

Another possible effect of an earthquake that is related to a tsunami event is a seiche, or a sloshing action of an enclosed body of water such as a lake or reservoir. This action can cause localized flooding and damage.

Responding To a Tsunami Warning

Action by:

Action:

Supervisor

1. **Receives** a Tsunami Warning
2. If ETA is more than 1 hour **Assigns** operators to monitor pump station groups as follows:
 - a. pump stations #5, 13 and 14.
 - b. pump stations #8, 9 and 10
 - c. pump stations #4, 18,19 and 20
3. If ETA is less than 1 hour move all vehicles and personnel to higher ground and wait for all clear.
4. **Monitors** local news for all clear or new tsunami information and relays latest news to operators.
5. **Contacts** local Septage Haulers to place them on standby for possible pump out of pump stations as needed

Operator Stations a.

6. **Contacts** Ferry Terminal personnel and informs them of the warning and that the pump station will not be able to pump waste until the all clear is received.
7. **Pumps** down the Ferry Terminal pump station and shuts off all power to the station.
8. **Prepares** for the pump out of any pump station in the event of its loss in the surge.
9. **Monitors** pump stations #13 and 5 from high ground until given the all clear.

Operator Stations b.

10. **Advices** the local residents that the pump stations will not be functioning until the all clear is sounded. Pump down and shut off all three stations. Monitor the station levels from the main plant. Return to pump again only to prevent overflow.

Operator Stations c.

11. **Monitor** the pump stations from the main plant. Prepare for the loss of one or more of the stations.

Incinerator operator
Main Plant Operator
All other personnel

12. **Shuts** down and powers off the incinerator.
13. Prepares for a peak flow event.
14. **Move** plant vehicles to higher ground.

Post Tsunami Action

Tsunamis often occur as a series of waves. Do not resume activity until the National Oceanic and Atmospheric Administration has given the "All Clear". If generated by a local earthquake be prepared for after shocks. Follow the earthquake action plan.

Action by: Supervisor	Action: Receives a Tsunami Warning All Clear Message Notifies all personnel
Operator Stations a.	Inspects pump stations 5, 13 and 14. Reports problems such as flooding or power loss to supervisor.
Supervisor	Assigns other personnel, Septage haulers etc. to assist if necessary.
Operator Stations a.	Places the Ferry Terminal pump station back in service if possible.
	Prepares for the pump out of any pump station in the event of its loss in the surge.
Operator Stations b.	Inspects pump stations 8, 9 and 10. Reports problems such as flooding or power loss to supervisor.
Supervisor	Assigns other personnel, Septage haulers etc. to assist if necessary.
Operator Stations c	Inspects pump stations 4, 18, 19 and 20. Reports problems such as flooding or power loss to supervisor.
Supervisor	Assigns other personnel, Septage haulers etc. to assist if necessary.
Incinerator operator Main Plant Operator	Assists other personnel in problem areas Prepares for a peak flow event.
Supervisor	Prepares a written report of actions taken and damage encountered. If wastewater has escaped into the environment include the report with the Overflow event report.

Volcanic Event

The Cascade Range includes 14 major volcanic centers. The two volcanoes that pose the greatest risk to the Anacortes WWTP would be Mount Baker and Glacier Peak. Ash – sized fallout from eruptions accumulates thickly on roofs and other human-made structures – especially when the ash is wet. On average, a one-inch layer of ash weighs approximately ten pounds per square inch. In addition, ash may clog water courses, cause electrical short circuits and make driving hazardous or impossible. Because winds and air currents easily carry it, ash deposits usually remain a hazard to all types of machinery and transportation for many months following an eruption.

Because of the location of Mount Baker and Glacier Peak and the flow direction of prevailing winds, the majority of the airborne ash would most likely be carried northeast or east and away from population centers in Skagit County should an eruption occur. Regardless of wind direction, there would still be a considerable amount of ash in the vicinity of the volcano during and immediately following an explosive ash eruption.

The Skagit County Natural Hazards Mitigation Plan has deemed that there is low probabilities of such an event occurring but a moderate to high risk to persons, property and the environment in Skagit County should an eruption occur from either Mount Baker or Glacier Peak. Based on past experience, especially the 1980 eruption of Mount Saint Helens, future eruptions will almost certainly be preceded by an increase in seismic activity and other indicators. This should allow the staff to make the preparations for the possible eruption.

Have dust masks available and wear them. Close doors, windows and dampers. Place damp towels at door thresholds and other draft sources. Put stoppers on top of drain pipes. Protect dust sensitive electronics. Keep roofs free of ash more than 4 inches thick. Frequently change the oil and air filters in vehicles and equipment. Drive only when necessary. Ash events can have lingering effects for months. Watch carefully for ash into the collection system. It will very likely clog lines and pumps causing overflow events. Operator teams should be assigned to care for sections of the collection system until the emergency has passed.

PRE-ERUPTION

<u>Action by:</u>	<u>Action:</u>
Plant Manager	1. Receives a volcanic activity warning. 2. Assigns supervisors to prepare for an ash fallout event.
Operations Supervisor	3. Monitors news bulletins for updates on volcanic activity and estimated eruption time frame. 4. Checks inventories of dust masks and clean up supplies 5. Coordinates with Operations division on citywide plan.
Maintenance Supervisor	6. Plans a shutdown of one half of the treatment plant processes. 7. Checks on filter supplies for all plant and pump station equipment. Orders a large enough supply to change filters bi-weekly for two months

POST-ERUPTION

Plant Manager	1. Receives a volcanic eruption notice. 2. Orders supervisor to shut down half of the treatment processes to preserve them from damage due to ash fallout. 3. Goes to the EOC (if activated) or assigns a supervisor to do so.
Supervisors	4. Assigns operators to shutdown and drain out half of the treatment train. 5. Assigns operators into teams to check pump stations and force mains for signs of clogging from ash. 6. Plans for equipment and manpower needed to keep the system running.
Wastewater Team	7. Reports damage and measures needed to be taken to the Plant Manager and/or the EOC 8. Plan for work schedules to cover 24 hours/day until the emergency condition is declared ended. This includes assignments to aid other PW Depts.

Standard Operating Procedures Escape Route

July 27, 1999

I. Procedure

In the event of a fire alarm, follow the posted escape route and exit the building immediately. Operators should take their cellular phones with them and have the Lab Operator call 911 for the fire department.

All plant personnel will meet on the lawn area between the south gate and the secondary clarifier. A head count will be taken to ensure that everyone has made it out of the building safely.

Open and turn off power to the south gate in order for the fire department to obtain access to the plant.

II. Post Fire Procedure

After the fire department has completed extinguishing the fire the plant manager and/or the supervisors will evaluate the extent of the damage. A plan for operation of the plant around the damaged area will be formulated on a case by case basis.

Wastewater Treatment Plant Bloodborne Pathogen Site Specific Plan

I. Responsibility

All employees will follow the procedures described in this plan. Supervisors (the Plant Manager, Operations, Maintenance, and Lab Supervisors) will ensure all employees follow this plan.

II. Potential Hazards

There is a potential for exposure from needles and other contaminated sharps which may be present in the wastewater flow stream through primary treatment or in the sludge flow stream.

- The wastewater flow stream through primary treatment. This includes manholes, pump stations, barscreens, and the primary clarifiers.
- The sludge flow stream through incineration. This includes the primary sludge pumps, the thickened sludge pumps, the belt filter press, and the incinerator feed pump.
- First Aid/CPR
- All blood and other potentially infectious material is treated as if known to be infectious with HIV and HBV.

III. Control Measures

If an employee comes into contact with blood or other potentially infectious material they will remove any personal protective equipment and immediately, or as soon as possible, wash their hands and other exposed areas with soap and warm running water in the restrooms at the WWTP. The incident will immediately be reported to a supervisor who will assist the employee in filling out the “**Bloodborne Pathogen Exposure Incident Investigation Report Form**”. The employee will go to Island Hospital’s Emergency Room if they need medical assistance.

A. Wastewater Flow Stream through Primary Treatment

1. Manholes & Pump Stations

All employees will wear boots with steel toes and steel shanks when entering any portion of the collection system where wastewater is present. If an employee has to kneel down, they will wear appropriate knee protection. Protective gloves will be worn whenever an employee must put their hands into the wastewater.

2. Plugged Pumps

Any pump that is plugged will be cleared as much as possible using mechanical means. Employees will wear protective gloves if they must reach into the pump with their hands.

3. Barscreens

Two of the barscreens are mechanically cleaned; the third is manually cleaned using a rake specifically designed for that barscreen. The screenings are raked onto a platform, shoveled onto the screenings conveyor or into a garbage can and then dumped into the screenings dumpster.

4. Screenings Dumpster

Employees do not place any part of their body into the screenings dumpster, all work is done using mechanical means.

5. Primary Clarifiers

No work is done in the primary clarifiers unless they are completely pumped out.

B. Sludge Flow Stream through Incineration

1. Primary Sludge Pumps, Thickened Sludge Pumps, Belt Filter Press, Incinerator Feed Pump, and All Sludge Piping

When work is done on any equipment that is part of the sludge flow stream all material will be removed from pumps, piping, etc. using mechanical means as much as possible. Employees will wear protective gloves if they must reach into any such equipment with their hands. After all the sludge has been removed from the equipment it will no longer be considered a potential hazard.

C. First Aid/CPR

Whenever CPR is given disposable gloves and a mouth to mouth barrier will be used. Gloves and eye protection will be worn for any first aid that involves blood and/or body fluids. When there is more than one victim employees will change protective equipment (gloves, etc.) between each person.

IV. Personal Protective Equipment (PPE)

PPE will be removed immediately, or when feasible, if penetrated by blood or other potentially infectious material.

All PPE will be inspected for contamination or loss of integrity (holes, cracks, etc.) prior to use. Re-usable PPE will be decontaminated using a 1:10 bleach solution (made fresh) then inspected for structural defects. Defective PPE will immediately be brought to the Operations Supervisor for repair or replacement. All employees will remove contaminated PPE or other clothing following safe removal techniques as shown in training.

V. Cleaning Procedure for Blood and Other Potentially Infectious Material (OPIM)

Always wear gloves to clean up blood or OPIM. Use a 1: 10 bleach solution (made fresh) to clean up all potentially infectious material.

A. Small Area

1. Cover the contaminated area with disposable paper towels and pour bleach solution over the entire area.
2. Fold the papertowels into themselves and discard into a red biohazard bag.
3. Cover the area with bleach solution and wipe up with papertowels.
4. Place the papertowels into the red biohazard bag then remove the gloves and place them into the biohazard bag also.

B. Large Area

1. Fill a mop bucket with a 1:10 bleach solution.
2. Carefully mop the area without spreading the contaminated material.
3. Allow the area to dry.
4. Change the water in the mop bucket.
5. Mop the entire area with new bleach solution.
6. Change the water and rinse the mop head in a new bleach solution.
7. Place the mop head in a red biohazard bag and send in for cleaning.

VI. Waste Handling and Disposal

Do not fill any biohazard waste container to overflowing. If the outside of the container is contaminated use gloves while handling it. Place the contaminated container into another container (double bag, etc.) to prevent spreading the contamination.

A. Types of Contaminated Waste (not Reusable Material)

1. Garbage
Band-aids, kleenex, papertowels, etc. that will not release any blood or OPIM (liquid, semi-liquid, or dried flakes) when compressed. These items can be thrown into the trash.
2. Regulated waste (material that goes in a red bag for disposal)
 - Liquid or semi-liquid blood or OPIM
 - Items contaminated with blood or OPIM which would release these substances in a liquid or semi-liquid state if compressed
 - Items caked with dried blood or OPIM which are capable of releasing these materials during handling
 - Contaminated sharps

The actual volume of blood is not the determining factor as to whether or not a particular material is to be considered regulated waste. For example 10 mLs of blood on a disposable bed sheet would appear as a spot (not

regulated waste) while the same amount of blood on a cotton ball would likely cause saturation and dripping (regulated waste).

B. Waste Handling

1. Contaminated Sharps

All contaminated sharps will be placed in a sharps container (Sharps-A-Gator #4855) using mechanical means (pliers, tongs, etc.). The sharps container will be marked as “Used” and properly disposed of. The tongs, etc. will be disposed of or cleaned using a 1:10 bleach solution (made fresh).

2. Contaminated Laundry

Contaminated laundry (including uniforms with employee’s blood on them) will be placed in a separate red biohazard bag provided by Overall laundry. The bag will be given to Overall when they come for their regular scheduled pick-up.

3. Regulated Waste

All regulated waste (other than sharps) will be placed in a red biohazard bag.

C. Disposal

All bloodborne pathogen waste will be taken to the Anacortes Fire Department and placed in their biohazard container located in the equipment bay. From there it will be taken to Island Hospital for final disposal (see the City’s Exposure Control Plan). Employees must call the Fire Department (293-1925) and make arrangements before taking any waste there. All waste must be in proper containers (red bags, sharps containers, etc.) prior to being taken to the Fire Department. If leakage can occur during transport, the contaminated material shall be placed in a leak and spill proof container (double bagged in biohazard bags is the minimal acceptable procedure).

VII. Training

All WWTP employees with occupational exposure will receive annual bloodborne pathogen training provided by the City. The WWTP will also give site-specific training to all employees on an annual basis. All new employees will be given bloodborne pathogen orientation training and be offered the Hepatitis B Vaccination within 10 days of hire or prior to initial assignment to a job with occupational exposure. General training on bloodborne pathogens, personal protective equipment, exposures, etc. will be provided using a video one year and by a certified trainer contracted by the City the following year.

This Site Specific Plan will be reviewed and updated annually by the Operations, Maintenance, or Lab Supervisor and the Plant Manager.

VIII. Control Devices

Bloodborne Pathogen Kits are located:

- All vehicles (Truck 101, 106, and 150)
- In the lab next to the west door
- Outside the entrance to the Men's Restroom in the Administration Building
- In the Shop above the Deep Sink
- Incinerator Control Room

These kits contain:

- Red biohazardous waste bags
- Mouth to mouth barrier
- Nose/Mouth Mask
- Disposable gloves
- Disposable apron
- Infectious Liquid Spill Control powder

Additional information:

- Sharps containers are located in all the trucks (101, 106, and 150). Contact the Operations Supervisor to get replacements.
- Additional disposable gloves are in the lab by the pH meter, in the trucks, and in the incinerator control room.
- Kneepads are located in the lockers by the Solids Handling Control Room.
- Red bags for contaminated laundry (including uniforms with employee's blood on them) are supplied by Overall and are located in men's locker room.
- Red bags for all other contaminated items are located in the lab in the bottom drawer to the right of the dishwasher.
- Vehicle kits are inspected and re-stocked by Equipment Rental immediately following use or annually when the vehicles are serviced.
- Facility kits are used for the annual site-specific training. After the training the kit contents are inspected, re-stocked and sealed again.

WWTP Standard Operating Procedures

WWTP Chemical Handling

November 17, 1997

I. Sodium Hydroxide (NaOH)

A. General Precautions

1. Safety Precautions

Wear safety glasses, a face shield, gloves, rubber boots, and rain gear when receiving NaOH.

Review the MSDS prior to handling Sodium Hydroxide.

B. Receiving NaOH

Sodium hydroxide is delivered directly to the WWTP in bulk delivery. The truck driver unloads the NaOH directly from the truck into our 3000-gallon storage tank.

Note: The tank will overflow at 2700 gallons.

1. Procedure

- a) Charge and test the emergency shower / eyewash at the odor control fill station.
- b) Cover the storm drains with a Drain Blocker Drain Plug.
- c) Record the initial volume of the storage tank from the reading on the pmp.
- d) Have the truck driver pull up to the NaOH fill station.
- e) Close the fill station drain valve on the outside wall of the fill station.
- f) Have the truck driver connect his fill hose to the fill station line.
- g) Open the valve on the fill station line.
- h) Wait for the tank to finish filling.
- i) Have the truck driver blow the NaOH out of his hose.
- j) Close the valve on the fill station line.
- k) Have the truck driver disconnect his hose.
- l) Replace the fill line cap and lock the cap.
- m) If any NaOH spilled into the fill station, drain the NaOH into a bucket and rinse out the fill station. Pour the NaOH into the primary treatment flow stream.
- n) Open the fill station drain valve on the outside wall of the fill station.
- o) Put the Drain Blocker Drain Plug away.
- p) Close the shower / eyewash supply valve and drain the line
- q) Record the final volume of the storage tank from the reading on the pmp.
- r) Record and enter the volume delivered into OP10, on form ops O10 and on the Chem. Delivery screen on the PMP (Under Misc. Screens).

II. First Aid for Chemical Exposures

Hazard Category: Acute. Refer to MSDS for additional information.

A. Eyes

Immediately flush with large quantities of running water for at least 15 minutes. Hold eyelids open while rinsing and occasionally lift the upper and lower eyelids. Do not attempt to neutralize with chemical agents. Seek medical attention immediately. Flush an additional 15 minutes if a physician is not available.

B. Skin

Immediately flush skin with running water for at least 15 minutes while removing contaminated clothing and shoes. Do not attempt to neutralize. Get medical attention. Wash all clothing before reuse. Dispose of contaminated shoes.

C. Ingestion

Give several glasses of water if victim is conscious. Do NOT induce vomiting. Seek medical attention immediately. Do not give anything by mouth if person is unconscious or if having convulsions.

D. Inhalation

Stop work immediately and move to fresh air. If breathing has stopped give CPR to person. Seek medical attention if the exposure is severe.

III. Spill Reporting

A. Reportable Quantity

The Reportable Quantity is 1000 lbs. This is approximately 99 gallons of 25% NaOH.

Reportable Quantity - the amount of chemical, when spilled, that must be reported to DOT (traffic accident) or the National Response Center (on-site spill to the environment).

Note: Skagit County Department of Emergency Management duties include notifying the required state and federal authorities (i.e. the DOT and the National Response Center).

B. Notification

If there is a spill greater than the reportable quantity released to the environment call 911 and then notify a WWTP supervisor. The supervisor will call the State Department of Emergency Management (1-800-562-6108). 911 personnel will dispatch the appropriate emergency response agencies.

IV. Spill Cleanup

Wear the appropriate PPE (see page 1).

A. Land/Liquid Spill

Contain the spill and recover as much NaOH as possible and pump into the NaOH tank. Use a commercial absorbent to absorb the remaining NaOH. Place the used absorbent material in a drum and dispose of at a hazardous waste disposal site. Dike the area to contain the wash water, then hose the pavement. Neutralize the wash water using a dilute mild acid (acetic acid or oxalic acid) to a pH of 6 – 9. Discharge the wash water into the headworks.

B. Solid Waste

Dispose of solid waste at a hazardous waste disposal site.

WWTP Standard Operating Procedures

WWTP Chemical Handling

November 17, 1997

I. Sodium Hypochlorite (NaOCl)

A. General Precautions

1. Safety Precautions

Wear safety glasses, a face shield, gloves, rubber boots, and rain gear when receiving NaOCl .

Review the MSDS prior to handling Sodium Hypochlorite.

B. Receiving NaOCl in the Main Storage Tank

Sodium hypochlorite is delivered directly to the WWTP in bulk delivery. The truck driver unloads the NaOCl directly from the truck into our 3500-gallon storage tank.

1. Procedure

- a) Draw down the contents of the storage tank into the 2 day tanks as far as possible before the driver arrives
- b) Cover the storm drains with a Drain Blocker Drain Plug.
- c) Record the initial volume of the storage tank from the reading on the pmp.
- d) Have the truck driver back to the east doors of the chlorine feed room
- e) Ensure the 3 valves with yellow tape on them are closed.
- f) Have the truck driver connect his hose to the NaOCl fill line.
- g) Open the 2 valves on the 3" fill/recirc line to begin the transfer.
- h) The tank will over flow around 3600 gallons. Do not fill the tank past the tapeline on the sight glass. Allow for the volume of NaOCl that will be blown out of the hose.
- i) Wait for the truck driver to blow out his hose using the air.
- j) Close the 2 valves on the 3" fill/recirc line.
- k) Allow the truck driver to disconnect his hose, cap it and put it back on his truck.
- l) Note the final volume of the storage tank from the reading on the pmp. If NaOCl is to be delivered to the Auxiliary tank, wait to enter the volume in OP10 until the full delivery is completed.(See step 1 in the next section)

C. Receiving NaOCl in the Auxiliary Storage Tank

The Auxiliary NaOCl tank has a 3000-gallon capacity and should be able to receive the remainder of the truckload.

1. Procedure

- a) Move the Drain Blocker Drain Plug to the storm drain by the odor control facility.
- b) Charge and test the emergency shower / eyewash at the odor control facility fill station
- c) Have the driver move his truck to the odor control facility fill station.
- d) Record the initial volume of the auxiliary tank from the reading on the pmp.
- e) Have the truck driver connect his hose to the $\bar{O}CI$ fill line.
- f) Open the line valve to begin the transfer.
- g) Wait for the truck driver to blow out his hose using the air.
- h) Close the fill valve on the fill line.
- i) Allow the truck driver to disconnect his hose, cap it and put it back on his truck.
- j) Close the shower / eyewash supply valve and drain the line.
- k) Record the final volume of the auxiliary tank from the reading on the pmp.
- l) Record and enter the total volume delivered in both tanks into OP10, on form ops O10 and on the misc. screen on the PMP.

D. Transferring $\bar{O}CI$ from the Auxiliary Storage Tank to the Main Tank

1. Prior to Pumping Procedure
 - a) Assure local disconnect is tagged out.
 - b) Put pump H-O-A switch at CP-4 in auto position.
 - c) Assure MCC breaker for pump is closed.
 - d) Assure 1/2" suction line flush valve is closed.
 - e) Assure 1/2" discharge line drain valve is closed.
 - f) Open 1" suction line valve just downstream of basket strainer.
 - g) Open 1" discharge line valve just upstream of containment piping.
 - h) Assure proper position of all other 1" valves. (Open)
 - i) Remove tag-out and turn on disconnect switch.
 - j) At PMP initiate pumping sequence and monitor pump operation.

Note: Pump will shut off by either high level in the main tank or low level in the auxiliary tank.

2. After Pumping Procedure

- a) Shut off local disconnect switch.
- b) Place pump H-O-A switch at CP-4 in hand position. (**make sure local disconnect switch is off first**)
- c) Close 1" discharge line valve just upstream of containment piping.
- d) Close 1" suction line valve just downstream of basket strainer.
- e) Hook up hose to flushing line and turn on water.
- f) Open ½" suction line flush valve.
- g) Open ½" discharge line drain valve.
- h) Turn on pump by turning on local disconnect switch.
- i) Run pump long enough to thoroughly flush out pump.
- j) Shut off and tag out local disconnect switch.
- k) Close ½" discharge line drain valve.
- l) Close ½" suction line flush valve.
- m) Turn off water and remove hose.
- n) Put pump H-O-A switch at CP-4 in off position.

BE CAREFUL WHEN POSITIONING VALVES IN 70CI PLUMBING AS NOT TO ISOLATE 70CI IN ANY AREA. DANGEROUSLY HIGH PRESSURES COULD BUILD UP DUE TO OFF GASSING

II. First Aid for Chemical Exposures

Refer to MSDS for additional information.

A. Eyes:

Immediately flush with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower eyelids.

Seek medical attention immediately.

B. Skin:

Immediately flush skin with water for at least 15 minutes.

Seek medical attention if symptoms persist after washing the affected area.

If 70Cl gets on your clothing immediately remove all affected clothing and wash it before wearing it again.

C. Ingestion:

Immediately drink large quantities of water. Do NOT induce vomiting.

Seek medical attention immediately.

Do not give anything by mouth if person is unconscious or if having convulsions.

D. Inhalation:

Stop work immediately and move to fresh air. If breathing has stopped give CPR to person.

Seek medical attention if the exposure is severe.

III. Spill Reporting

A. Reportable Quantity

The Reportable Quantity is 100 lbs. This is approximately 15 gallons of 8% OCl_2 .

Reportable Quantity - the amount of chemical, when spilled, that must be reported to DOT (traffic accident) or the National Response Center (on-site spill to the environment).

Note: Skagit County Department of Emergency Management duties include notifying the required state and federal authorities (i.e. the DOT and the National Response Center).

B. Notification

Chemical Transfer - When transferring OCl_2 we only handle quantities less than the reportable quantity. If there is a spill released to the environment contact a WWTP supervisor then follow the spill cleanup procedures.

Mini-Bulk Deliveries - If there is a spill greater than the reportable quantity released to the environment radio the WWTP and have someone call 911, then notify a WWTP supervisor. The supervisor will call the State Department of Emergency Management (1-800-562-6108). 911 personnel will dispatch the appropriate emergency response agencies.

IV. Spill Cleanup

Wear the appropriate PPE (see page 1).

A. Land Spill:

Contain the spill and recover as much OCl_2 as possible for use in odor control. Use sand, clay soil, or commercial absorbents to absorb the remaining OCl_2 .

If there is a spill to the soil, collect the soil. Place the soil on a screen and wash.

Collect the washings, neutralize using soda ash or hydrochloric acid and return to the wastewater collection system. The soil may be returned to its former location after it is thoroughly washed (the wash water has a Cl_2 residual < 2 ppm).

B. Liquid Spills:

Neutralize large liquid spills using soda ash or hydrochloric acid to a Cl_2 residual < 2 ppm then put in the collection system for treatment at the wastewater plant. Small spills can be put directly into the collection system without neutralizing first.

C. Solid Waste:

Neutralize solid waste with soda ash or hydrochloric acid to a Cl_2 residual < 2 ppm then place in a bag and dispose of in a dumpster.

WWTP Standard Operating Procedures

WWTP Chemical Handling

August 25, 1999
Revised October 4, 2006

Polymer

1. General Precautions:

Safety Precautions:

Wear safety glasses and rubber boots when receiving polymer. Wear a safety harness attached to the fall arrest unit when climbing on and working from the polymer tank ladder. **Caution:** polymer is very slippery.

Review the MSDS prior to handling Polymer.

2. Receiving Polymer

Polymer is delivered directly to the WWTP in bulk delivery. The truck driver unloads the polymer from the truck into our 8000-gallon storage tank.

Procedure:

- Run a pig through the line before filling the tank (see below).
- Record the initial volume of the tank from the reading on the pmp.
- Have the truck driver pull up next to the polymer fill station.
- Close all exterior doors and turn on the exhaust fans in manual. Check on the CO monitor in the incinerator room periodically during the delivery. Extend periods of running a truck outside of the building have caused exhaust fumes to build up inside.
- Keep the Belt press room doors closed as much as possible; the negative pressure in that room tends to draw in more fumes.
- Have the truck driver connect his hose to the polymer fill line.
- Open the fill station valve.
- Open the fill valve at the top of the polymer tank.
- Close the 2 valves on the flushing water line.
- Wait until the truck is empty.
- Have the truck driver disconnect his hose and return it to his truck
- When the truck has left; put the exhaust fans back in the pre-delivery settings.
- Close the fill valve at the top of the polymer tank.
- Open the 2 valves on the flushing water line.
- Run water through the fill line.
- Run a pig through the line 2 times (see below).
- Record the final volume of the storage tank from the reading on the pmp.
- Record and enter the volume delivered into OP10, on form ops O10 and on the misc. screen on the PMP.

Pigging the line:

Note: Wear a safety harness and attach it to the fall arrest unit when climbing on and working from the polymer tank ladder. Use a bucket to hoist up all equipment from the top of the ladder.

Equipment: Channel locks
Short broomstick
Pig

- Close the 2 valves on the flushing water line.
- Ensure the fill valve at the top of the polymer tank is in the closed position.
- Remove the cap on the wye in the fill line at the top of the polymer tank.

- Insert the pig into the wye.
- Push the pig into the fill line using a broomstick.
- Replace the cap on the wye.
- Open the fill station valve.
- Open the 2 valves on the flushing water line to push the pig through the line.
- Allow the pig to go through the line.
- Retrieve the pig.
- Close the 2 valves on the flushing water line.
- Repeat if necessary.
- Close the fill station valve when done.
- Hose the polymer off the sidewalk into the plant drain.

3. First Aid for Chemical Exposures

Refer to MSDS for additional information.

Eyes:

Immediately flush with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Call a physician.

Skin:

Remove contaminated clothing and launder before reuse. Thoroughly wash exposed area with soap and water.

Ingestion:

Consult a physician. Rinse mouth, and then drink 2 glasses of water. Do not give anything by mouth if person is unconscious. Polymer is considered to be of low oral toxicity.

Inhalation:

Move to fresh air. If symptoms persist, consult a physician.

4. Spill Reporting

Polymer is not a hazardous material.

5. Spill Cleanup

Wear the appropriate PPE (see page 1).

Land/Liquid Spill:

Dike the area to contain the polymer. Recover as much as possible and pump it into the polymer tank. Use sand, earth, floor absorbent, or other absorbent material to absorb the remaining liquid then shovel the absorbent material into containers and dispose of in the dumpster.

Solid Waste:

Dispose of solid waste in a dumpster.

WWTP Standard Operating Procedures

WWTP Chemical Handling

August 25, 1999
Revised December 17, 2007

Sodium Bisulfite (NaHSO₃)

1. General Precautions:

Safety Precautions:

Wear safety glasses, a face shield, gloves, rubber boots, and rain gear when receiving bisulfite.

Review the MSDS prior to handling Sodium Bisulfite.

2. Receiving Bisulfite

Sodium bisulfite is delivered directly to the WWTP in mini-bulk delivery. The truck driver unloads the bisulfite from the truck into a tote located on the south side of the bisulfite room. The 200-gallon storage tank is filled from the tote. (The tank will overflow at 175 gallons.)

Filling Tote Procedure:

- Cover the storm drains with a Drainblocker Drain Plug.
- Remove the vent plug from the tote cap.
- Have the truck driver back along the east side of the Secondary Process building.
- Remove the cam lock cap from the line at the top of the tote.
- Have the truck driver fill the tank directly through the top of the tote.
- Replace the cap and vent plug on the top of the tote.
- Place the delivery paperwork in the operations foreman's in basket.

Transfer from Tote to Tank Procedure:

Note: The tank will only hold 175 gallons.

- Cover the storm drains with a Drainblocker Drain Plug.
- Record the initial volume of the storage tank from the reading on the pmp.
- Remove the cap from the tote lid.
- Retrieve the bisulfite pump from the bisulfite room.
- Run the pump discharge hose thru the fill port in the wall and into cam lock fitting on top of the bisulfite tank.
- Lower the transfer pump into the tote.
- Plug in the pump and watch for the tank to fill.
- Pull the plug when the tank when the level reaches the tapeline on the sight glass.
- Disconnect the hose from the tank and drain the remaining bisulfite from the hose into the tote.
- Remove the pump and place it in a five gallon bucket of water. Place the discharge end of the hose in the scum box.
- Start the pump and add water to the bucket to flush the pump and hose.
- When flushing is completed, store the pump, hose and bucket in the bisulfite room.
- Record the final volume of the storage tank from the reading on the pmp.
- Record and enter the volume delivered into OP10, on form ops O10 and on the misc. chemical delivery screen on the PMP.

3. First Aid for Chemical Exposures

Refer to MSDS for additional information.

Eyes:

Immediately flush with plenty of water. Seek medical attention.

Skin:

Immediately flush skin with plenty of soap and water.

Ingestion:

If conscious, give plenty of water or milk. Induce vomiting by touching finger to back of throat. Seek medical attention.

Inhalation:

Promptly move to fresh air.

4. Spill Reporting

Reportable Quantity

The Reportable Quantity is 5000 lbs. This is approximately 1094 gallons of NaHSO₃. The tote holds up to 350 gallons and the tank holds a maximum of 175 gallons.

Reportable Quantity - the amount of chemical, when spilled, that must be reported to DOT (traffic accident) or the National Response Center (on-site spill to the environment).

5. Spill Cleanup

Wear the appropriate PPE (see page 1).

Land/Liquid Spill:

Contain the spill and recover as much NaHSO₃ as possible for use in dechlorination. Neutralize the remaining liquid using soda ash, lime, or limestone. Dike the area to contain the wash water, then hose the pavement. Neutralize the wash water using soda ash, lime, or limestone. Discharge the wash water into the headworks.

Solid Waste:

Neutralize solid waste with soda ash or hydrochloric acid to a Cl₂ residual < 2 ppm then place in a bag and dispose of in a dumpster.

CHEMICAL SPILLS

The Anacortes WWTP uses five major bulk chemicals in the treatment process and at various pump stations. There is a possibility of a spill during transport or transfer of the chemicals. The main chemicals in use are:

- Sodium Hydroxide
- Sodium Hypochlorite
- Sodium Bisulfite
- Polymer
- Bioxide

1. Chemical Spills Require Emergency Response

Wastewater Supervisors mobilize personnel to stop, control, contain and cleanup the spill.

- Spills within secondary containment areas will activate alarms to notify duty personnel. These spills can be easily contained and the chemicals recovered.
- Spills into the environment will normally occur during transportation or transfer of the chemicals. These events will have personnel present who will notify a supervisor of the incident.
- The supervisor will determine the resources needed to contain and clean up the spill.
- Operations and Wastewater work together to contain and clean up the spill.

2. Chemical Spills Require Notification

A wastewater supervisor will notify the following personnel of any spill

- Wastewater Manager
- Public Works Director
- Operations Manager (if clean-up help is needed)

The Wastewater Manager will determine the level of notification required following the guidelines set for each chemical and listed at the back of this section. If necessary the following will be notified.

- Skagit County Department of Emergency Management 428-3250
- Washington Cities Insurance Authority (WCIA) – if there is potential private property damage.

3. Containing the Hazard

The Wastewater Supervisor ensures the contaminated area is barricaded off and evaluates the event to eliminate hazards, both current and future, to the public health and environment.

RESPONDING TO A CHEMICAL SPILL

<u>Action by:</u>	<u>Action:</u>
Plant Supervisor	<ol style="list-style-type: none">1. Upon notification of a chemical spill, Retrieves the MSDS for the chemical spilled and evaluates the resources needed to stop, contain or control the event.2. Assigns a Wastewater response team to stop and control the spill.3. Contacts the Operations Manager to mobilize personnel.
Operations Manager	<ol style="list-style-type: none">4. Assigns an Operations response team to contain the spill.
Response Team	<ol style="list-style-type: none">5. If the spill is in a traffic area, diverts traffic away from the spill area with barriers and/or flaggers.6. Contains the spill with sandbags or other barriers.7. Blocks storm drains and other runoff points to prevent spill from reaching receiving waters.8. Follows the guidelines set forth in the MSDS and the spill clean up procedures for the individual chemical. The spill clean up procedures are at the back of this section.9. If the spill is on bare ground, removes the contaminated soil.10. Returns the site to the condition it was in before the spill.11. Completes other cleanup tasks as directed by the Health Department, supervisors or other state authorities.12. Reports clean up measures taken to Plant Manager and/or Operations Manager
Plant Manager	<ol style="list-style-type: none">13. Reports the overflow event to the required authorities

Sodium Hydroxide (NaOH)

1. Spill Reporting

Reportable Quantity

The Reportable Quantity is 1000 lbs. This is approximately 79 gallons of 50% NaOH.

Reportable Quantity - the amount of chemical, when spilled, that must be reported to DOT (traffic accident) or the National Response Center (on-site spill to the environment).

Note: Skagit County Department of Emergency Management duties include notifying the required state and federal authorities (i.e. the DOT and the National Response Center).

Notification

If there is a spill greater than the reportable quantity released to the environment call 911 and then notify a WWTP supervisor. The supervisor will call the State Department of Emergency Management (1-800-562-6108). 911 personnel will dispatch the appropriate emergency response agencies.

2. Spill Cleanup

Wear safety glasses, a face shield, gloves, rubber boots, and rain gear

Land/Liquid Spill

Contain the spill and recover as much NaOH as possible and pump into the NaOH tank. Use a commercial absorbent to absorb the remaining NaOH. Place the used absorbent material in a drum and dispose of at a hazardous waste disposal site. Dike the area to contain the wash water, and then hose the pavement. Neutralize the wash water using a dilute mild acid (acetic acid or oxalic acid) to a pH of 6 – 9. Discharge the wash water into the headworks.

Solid Waste

Dispose of solid waste at a hazardous waste disposal site.

Sodium Hypochlorite (NaOCl)

1. Spill Reporting

Reportable Quantity

The Reportable Quantity is 100 lbs. This is approximately 15 gallons of 8% OCl^- .

Reportable Quantity - the amount of chemical, when spilled, that must be reported to DOT (traffic accident) or the National Response Center (on-site spill to the environment).

Note: Skagit County Department of Emergency Management duties include notifying the required state and federal authorities (i.e. the DOT and the National Response Center).

2. Spill Cleanup

Wear safety glasses, a face shield, gloves, rubber boots, and rain gear.

Land Spill:

Contain the spill and recover as much OCl^- as possible for use in odor control. Use sand, clay soil, or commercial absorbents to absorb the remaining OCl^- .

If there is a spill to the soil, collect the soil. Place the soil on a screen and wash.

Collect the washings neutralize using soda ash or hydrochloric acid and return to the wastewater collection system. The soil may be returned to its former location after it is thoroughly washed (the wash water has a Cl_2 residual < 2 ppm).

Liquid Spills:

Neutralize large liquid spills using soda ash or hydrochloric acid to a Cl_2 residual < 2 ppm then put in the collection system for treatment at the wastewater plant. Small spills can be put directly into the collection system without neutralizing first.

Solid Waste:

Neutralize solid waste with soda ash or hydrochloric acid to a Cl_2 residual < 2 ppm then place in a bag and dispose of in a dumpster.

Sodium Bisulfite (NaHSO_3)

Spill Reporting

Reportable Quantity

The Reportable Quantity is 5000 lbs. This is approximately 1094 gallons of NaHSO_3 . We do not have more than 200 gallons on hand at a time.

Reportable Quantity - the amount of chemical, when spilled, that must be reported to DOT (traffic accident) or the National Response Center (on-site spill to the environment).

Spill Cleanup

Wear safety glasses, a face shield, gloves, rubber boots, and rain gear

Land/Liquid Spill:

Contain the spill and recover as much NaHSO_3 as possible for use in dechlorination. Neutralize the remaining liquid using soda ash, lime, or limestone. Dike the area to contain the wash water, then hose the pavement. Neutralize the wash water using soda ash, lime, or limestone. Discharge the wash water into the headworks.

Solid Waste:

Neutralize solid waste with soda ash or hydrochloric acid to a Cl_2 residual < 2 ppm then place in a bag and dispose of in a dumpster.

Polymer

Spill Reporting

Polymer is not a hazardous material.

Spill Cleanup

Wear safety glasses and rubber boots.

Land/Liquid Spill:

Dike the area to contain the polymer. Recover as much as possible and pump it into the polymer tank. Use sand, earth, floor absorbent, or other absorbent material to absorb the remaining liquid then shovel the absorbent material into containers and dispose of in the dumpster.

1. Solid Waste:

Dispose of solid waste in a dumpster.

Bioxide

Spill Reporting

Bioxide is not a hazardous material.

Spill Cleanup

Wear safety glasses and gloves

Land/Liquid Spill:

Flush small spills into the wet well. For larger spills, contain the spill and recover as much Bioxide as possible and pump into the Bioxide tank. Discharge the remaining liquid directly into the wet well. Rinse the area and discharge the wash water into the wet well.

Solid Waste:

Dispose of solid waste in a dumpster

Additional Chemicals

The City may be requested to aid in the clean up of a chemical spill by an outside agency or industry. Aid will be provided at the direction of the Public Works Director, a Division Manager or as requested by Department of Emergency Services. In such emergencies follow the safety requirements listed in the MSDS for the chemical.

Accident Prevention Plan Confined Spaces Entry Procedures

December 23, 1998

I. Definition

A “confined space” is defined as a space that:

1. Is large enough and so configured that an employee can bodily enter and perform assigned work; and
2. Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry); and
3. Is not designed for continuous employee occupancy.

The City of Anacortes Wastewater Department has two confined space classifications:

Class “A” Space – Confined space is not exposed, nor has the potential of being exposed to raw wastewater. [Non IDLH, (Immediately Dangerous to Life or Health)]

Class “B” Space – Confined space is exposed, or has the potential of being exposed to raw wastewater.[IDLH,(Immediately Dangerous to Life or Health)]

The procedures outlined here are based on WAC 296-809 Confined Spaces

II. Class “A” Entry Procedures

Whenever it is necessary to enter a confined space, the following procedure shall be strictly adhered to. Any willful violation of these procedures can be considered cause for immediate dismissal from the employment of the City of Anacortes.

1. A confined spaces entry permit shall be used to review the required precautions and conditions prior to entry. The permit shall be fully completed and understood by each employee involved with the job task. Each permit authorizes a single entry into the specified confined space. Should the space be vacated and ventilation is halted, a new permit shall be required upon re-entry into the confined space. Confined spaces entry permits are valid only when signed by the attendant.
2. All traffic control measures shall be taken.
3. The hazardous energy policy shall be followed where applicable.
4. An initial test of the atmosphere shall be performed to assure that the oxygen content, carbon monoxide, hydrogen sulfide and any explosive vapors are at an acceptable level. Whenever possible, this test shall be performed prior to actually opening the space; for example, manholes should be tested before removing the cover by probing the atmosphere through the cover pick-hole. Important steps include:

- a) Ensuring that instrumentation has been calibrated according to manufacturer's instructions prior to use.
 - b) Understanding and following operating instructions for the instrument.
 - c) Atmospheric testing devices shall be tested with calibration gas prior to use. The purpose of this test is to ensure that the device will recognize alarm conditions.
 - d) If an alarm condition develops, the area shall be immediately evacuated and the lead worker contacted.
 - e) Ventilation is not a substitute for atmospheric testing.
 - f) Ventilation shall be performed for five minutes or five air-exchanges whichever is greater. Care shall be taken to prevent pockets of unventilated gases in the confined space. Also, the fresh air supply must be from an uncontaminated source, for example, avoid engine exhaust.
 - g) Ventilation shall be continued as long as the confined space is occupied. If the ventilation hose must be removed to move men or materials through the entryway, the hose shall be replaced and ventilation continued as soon as it is possible to do so. All work shall stop and the area shall be evacuated if ventilation fails.
 - h) The confined space shall be evacuated if any indications of ill effects such as dizziness, irritation or excessive odors are noted.
5. All persons entering confined spaces shall read and understand this policy and be trained annually as to the nature of the hazards involved, the necessary precautions, and the use of protective and emergency equipment required.
 6. All persons **entering** a confined space shall wear an approved rescue harness.
 7. No routine tasks shall be performed in any atmosphere that causes an alarm condition. Should it become necessary to enter a space to rescue a worker, the following procedure shall be followed:
 - a) Summon help
 - b) If the worker is attached to a lifeline, attempt to remove the worker to fresh air. If he cannot be removed, continue ventilation..
 - c) The space may not be entered by anyone until there is a trained attendant at the entryway. If you are alone, the odds are that you will die if you enter the space to save another worker.
 - d) Prepare to enter the space to perform the necessary rescue. The rescuer will be wearing a safety harness with lifeline attached, a ten-minute escape pack, or a SCBA. Other equipment may be required depending on the circumstances.
 8. No smoking shall be permitted inside, or within ten feet of a confined space.

9. One person shall be designated as the attendant. The attendant's responsibilities are as follows:
 - a) The attendant shall be responsible for safe entry on site.
 - b) The attendant shall be responsible for the condition of testing and safety equipment in use.
 - c) The attendant shall remain at the entryway at all times when workers are in the confined space.
 - d) The attendant shall keep watch on, maintain communication with the workers and SHALL NOT leave the entryway to satisfy routine needs of the workers, such as fetching tools, etc.
 - e) The attendant shall monitor the atmospheric testing device and inform the workers should an alarm condition develop.
10. Atmospheric testing shall be continuous while the confined space is occupied.
11. All persons shall immediately vacate the confined space should an alarm condition develop. Alarm set points shall be:
 - a) Oxygen 19.5% minimum and 23% maximum.
 - b) Hydrogen Sulfide 10 ppm maximum.
 - c) Lower explosive limit (lel) 10% maximum.
 - d) Carbon Monoxide 35 ppm maximum
12. All workers in confined spaces shall wear a hard hat.
13. If any piece of equipment required for safe entry of confined spaces is defective or missing, work shall be halted until the equipment is repaired or replaced.
14. All portable electric tools shall be connected to a ground fault interrupter.
15. Hot work shall not be permitted if the atmosphere contains explosive gases greater than 10% of the lower explosive limit.
16. Any hazardous condition encountered shall be noted on the confined space entry permit.

III. Class "B" Entry Procedures

1. All Class "A" space entry procedures shall be followed.
2. All persons entering a Class "B" space shall be on an approved lifeline.
3. All persons entering a Class "B" space shall carry a ten minute escape pack. The use of a self-contained breathing apparatus (SCBA) shall preclude this requirement. An air line respirator is not a SCBA.
4. A Class "B" space may be downgraded to a Class "A" space if presence or potential of raw wastewater exposure is eliminated.

IV. Hot Work

Hot work is defined as any procedure that by its nature could cause combustion of explosive gases. This would include, but is not limited to,

burning, welding, brazing, soldering, cutting, heating, grinding, drilling, sanding and chipping. Hot work shall require a hot work permit.

1. Any hot work involving sources of ignition and including welding and burning shall require positive assurance that fire hazards and flammable atmospheres have been controlled. Combustible material shall be protected.
2. A combustible gas indicator shall test the atmosphere continuously.
3. Where hot work involves the generation of toxic gases, vapors, or fumes, local exhaust and/or respiratory protection shall be required.
4. Compressed gas cylinders should not generally be allowed in confined spaces. Compressed gas lines shall be protected from rupture or damage.
5. Compressed gas cylinders or electric generators should be attended at all times. Sources of compressed gases or arc welding power shall be turned off immediately when an emergency arises, or when work is interrupted or completed.

V. Use of Toxic and/or Flammable Materials in Confined Spaces

Work in confined spaces frequently requires the use of toxic or flammable materials. These include, but are not confined to, coatings, linings, paints, cements and solvents.

1. Quantities of toxic or flammable materials brought into or used in confined spaces shall be limited to the smallest amount consistent with efficient use.
2. Containers shall be designed to minimize evaporation and spillage. Safety cans or small squeeze bottles are preferable when applicable.
3. Continuous ventilation shall be provided in sufficient quantity and design to control fire and health hazards.
4. Atmospheres shall be tested continuously to provide positive assurance that hazards do not exist. In no instance shall flammable vapor concentrations exceed 10% of the lower explosive limit.
5. Spraying of toxic or flammable substances such as paint is not recommended.
6. Respiratory protective equipment shall be used as required.
7. Sources of ignition shall be eliminated when flammable liquids are used.
8. Materials, equipment and training shall be provided to clean up spills.
9. All applicable instructions or recommendations from the manufacturer shall be enforced.

VI. Permit Required Confined Spaces for the WWTP

A. Admin Building

1. Oil – Water Separator Sump

B. Headworks

1. Influent Sampling Manhole
2. Influent Wet Well
3. Lower Level Sump Pump Wet Well
4. Septage Tanks
5. Screw Pump Inlet Sumps
6. Influent Channel
7. Barscreen Channels
8. Parshall Flume Chambers

C. Primary Clarifiers

1. Primary Influent Channel
2. Primary Tanks #1 and #2
3. Primary Effluent Channel
4. Secondary Bypass Channel
5. Gravity Thickeners #1 and #2

D. Aeration Basins

1. AB Influent Channel
2. AB #1 and #2 (These spaces are open air tanks and can not be effectively ventilated. Personnel entering these tanks should carry a confined space meter.)
3. AB Effluent Channel
4. AB Scum Pit

E. OCI and Bisulfite Rooms

1. OCI Day Tank #1
2. OCI Day Tank # 2
3. OCL Main Storage Tank
4. Bisulfite Storage Tank

F. Utilidor

1. Utilidor North
2. Utilidor South

G. Effluent Area

1. Splitter Box (any chamber)
2. Chlorine Contact Chambers
3. Secondary Clarifiers #1 and # 2 (These spaces are open air tanks and can not be effectively ventilated. Personnel entering these tanks should carry a confined space meter.)
4. Under Drain Pump Station
5. Scum Box

6. Secondary Process Building Sump Pump Well
7. Bisulfite Mixing Chamber
8. Effluent Channel
9. Effluent Pumps Wet Well
10. Effluent Pumps Valve Vault

H. Odor Control Facility

1. Hydrogen Peroxide Storage Tank
2. Caustic Tank
3. Abandoned Cl₂ Scrubber Caustic Tank
4. Abandoned Cl₂ Scrubber
5. Auxiliary OCl Storage Tank
6. Scrubbing Tower Vessels #1,#2 and #3
7. Scrubber Ducting
8. Scrubber Fan Housing

I. Incinerator Building

1. Odor Control Pump Station Sump Pump Wet Well
2. Effluent Meter Well
3. Incinerator Building Sump Pump Wet Well
4. Belt Filter Press Filtrate Pump Wet Well
5. Ash Thickener Storage Tank
6. Polymer Storage Tank
7. W-2 Water Tank
8. Incinerator Vessel
9. Incinerator Off Gas Discharge Line
10. Incinerator Wind Box
11. Incinerator Heat Exchanger, Lower Level
12. Incinerator Venturi Scrubber
13. Incinerator Tray Scrubber

J. Areas Outside of the Main Plant

1. All Pump Station Wet Wells
2. All Pump Station Valve Vaults
3. All Collection System Manholes
4. All CSO Meter Vaults

VII. Non-Permit Required Confined Spaces

A. Attic Spaces in the Admin Building

B. Screw Pump Room Stairwell Area

C. Polymer Tank Containment Area

Accident Prevention Plan Hazardous Communication Plan

September 1996

I. Plant Hazard Communication

To ensure that information about the dangers of all hazardous chemicals used by the Anacortes Wastewater Treatment Plant is known by all affected employees, the following hazardous information program has been established.

All operators will participate in the Hazardous Communication Program. This program will always be available on the bookshelf above the control room desk for review by any interested operator.

II. Container Labeling

All operators will verify that all containers received for use will be clearly labeled as to the contents, note the appropriate hazard warning, and list the name and address of the manufacturer. When transferring contents to a secondary container the operator will label the container with either an extra copy of the original manufacturer's label or with labels that have the identity and the appropriate hazard warning. For help with labeling see the Lab or Operations Supervisor. The plant maintenance program will generate a work order every six months assigning an operator to review and update the MSDS file and to check the plant for new chemicals that require an MSDS. The operator assigned to the MSDS work order will review secondary container labeling and update as needed.

III. Material Safety Data Sheets

The Plant Manager is responsible for establishing and monitoring the plant's MSDS program, and will make sure procedures are developed to obtain the necessary MSDS and will review incoming MSDS's for new or significant health and safety information. The Operations Supervisor will see that any new information is passed on to affected employees.

Copies of MSDS's for all hazardous chemicals in use will be kept in the same location as this written policy; MSDS's will be available to all operators during each work shift. If an MSDS is not available, immediately contact the current Safety Representative, the Plant Manager and/or the designated supervisor.

IV. Employee Training Information

The Operations Supervisor is responsible for the plant's employee training program. The Operations Supervisor will ensure that all program elements specified below are carried out, and will also clear all program elements with the Plant Manager.

Upon starting work, each new employee of the Wastewater Treatment Plant will receive a health and safety orientation included in normal Wastewater Treatment Plant training that includes the following:

1. An overview of the requirements contained in the Hazard Communication Standard.
2. Hazardous chemicals present at the Wastewater Treatment Plant.
3. Physical risks such as gas build up in piping and health risks of the hazardous chemicals including the symptoms of overexposure.
4. How to determine the presence of hazardous chemicals in the Wastewater Treatment Plant.
5. How to reduce or prevent exposure to hazardous chemicals through use of control procedures, work practices and personnel protective equipment.
6. Steps the City has taken to reduce or prevent exposure to hazardous chemicals.
7. Procedures from the MSDS's to follow if employees are overexposed to hazardous chemicals.
8. How to read labels and review MSDS's to obtain information.
9. Location of the MSDS file and written hazard communication program.
10. Prior to introducing a new chemical hazard into the Wastewater Treatment Plant, each operator will be given information and training as outlined above for the new chemical hazard.

V. Hazardous Non-Routine Tasks

Periodically, all operators are required to perform hazardous non-routine tasks. Some examples of non-routine tasks are confined space entry, painting, etc. Prior to starting work on such projects, each affected operator will be given information by the Plant Manager and/or the Operations Supervisor about the hazardous chemicals the operator may encounter during such activity. This information will include specific chemical hazards, protective and safety measures the operator can use, and steps the City is using to reduce the hazards, including ventilation, respirators, presence of another operator and emergency procedures.

VI. Informing Contractors

It is the responsibility of the City to provide contractors with information about hazardous chemicals their employees may be exposed to on the job site and suggested precautions for the contractor's employees. Contractors will be contacted before work is started, to gather and distribute information concerning any chemical hazard that they may bring to the Wastewater Treatment Plant.

VII. List of Hazardous Chemicals

All hazardous chemicals used are listed in the MSDS books located on the bookshelf above the control room desk. The books are broken into four categories.

- Volume 1 - Oil and Paints.
- Volume 2 -Hardware and Cleaners
- Volume 3 -Odor Control Chemicals, Incinerator Refractory and Plant Chemicals
- Volume 4 -Lab Chemicals

Operators unfamiliar with the hazards of any chemical will look up the MSDS for that chemical prior to using the chemical.

VIII. Hazard Communication Training Program

A. Objective

The City of Anacortes Wastewater Treatment Plant has established a Hazard Communication program. The purpose of the training program is to provide the knowledge and information the operator or part-time employee will need and has the right to know pertaining to the safe handling of any hazardous chemical used within or around the Wastewater Treatment Plant. Binders have been assembled which will contain the following:

1. The Hazard Communication Standard WAC 296-800-170 through WAC 296-800-18020 can be found on line at <http://apps.leg.wa.gov/wac/> Title 296 Chapter 296-800 WAC Sections 296-800-170 to 18020
2. The Laboratory Chemical Hygiene Plan.
3. The Hazard Communication Program Policy.
4. The Hazard Communication Training Policy.
 - a) Current inventory listing all materials containing hazardous chemicals.
 - b) Material Safety Data Sheet for all materials and products listed on the inventory. Request Letters Blank Forms.

These binders will be available at all times to plant employees for review and will be stored in the book shelf area above the control room desk.

IX. Training on the use of the program

A. Hazard Communication Standard

As part of the training program, it is required that all Wastewater Treatment Plant employees read and become familiar with the requirements of the Hazard Communication Standard.

Upon starting work at the Wastewater Treatment Plant, each new employee will receive as part of their training, instructions on the use of the Hazard Communication and a review of the Hazardous Chemicals used in the operation of the Plant.

B. Hazardous Chemicals Inventory

A current and updated inventory will be kept listing all materials and products containing hazardous chemicals that are marked with a warning or caution label. As new materials containing hazardous warnings enter the Plant, they will be added to the inventory and a MSDS will be obtained from the Supplier or Manufacturer and added to the binder.

C. Labeling

Chemical Manufacturers and Distributors are required to label, tag, or mark each container of hazardous material they ship or sell. These must specify the identity of the hazardous chemical(s), the appropriate hazard warnings, and the name and address of the Chemical Manufacturer or responsible party. Containers, into which hazardous chemicals are transferred, once they arrive at the Plant, must also be labeled with the identity of the hazardous chemical(s) and appropriate hazard warnings. If such identification is missing on a container, it must be reported immediately to the Plant Manager and/or Operations Supervisor. It should never be considered that a product is safe without first reading the label. If in doubt or if more information is needed related to the product, check the Hazard Communication inventory and read the MSDS on the product before using.

D. MSDS

The Material Safety Data Sheet (MSDS) is an important document, which provides the user with the chemical hazard information needed to handle the product safely. Described are the primary routes of entry into the body such as inhalation, ingestion, or skin absorption; and precautions to take such as proper work practices, personal protective clothing and equipment. All employees are required to take advantage of this information to avoid unnecessary injury.

X. Chemicals Used in the Treatment of Wastewater

A. Bulk Chemicals

Hazardous chemicals commonly used at the Plant and Pump Stations for the treatment of wastewater include Sodium Hydroxide, Sodium Hypochlorite, Polymer, Sodium Bisulfite, Granulated Carbon and Bioxide.

B. Lab Chemicals

Lab chemicals are addressed in the Chemical Hygiene Plan. (Pending)

C. Chemicals used in maintenance

Chemicals contacted during maintenance procedures include #2 diesel, solvent, acetylene, oxygen, carbon monoxide, oils and greases. Refer to individual MSDS's for hazard information and first aid measures for any maintenance product that is unfamiliar to the user.

XI. Hazard Information and First Aid Measures

A. Sodium Hydroxide

The Sodium Hydroxide storage tank is a 3000-gallon tank and is located in the odor control facility of the treatment plant. Spillage could occur during tank filling where the truck hooks up to the fill station. Contact can also occur from leakage around pumps and piping in the odor control pump station.

1. Eyes
 - As it is a basic material, Sodium Hydroxide may strongly irritate or burn the eyes. Flush immediately with plenty of water at the eye wash station continually for 15 minutes. Get medical attention immediately.
2. Skin
 - Sodium Hydroxide will cause irritation to the skin. Flush with plenty of water and remove contaminated clothing if needed. Get medical attention immediately.
3. Inhalation
 - Remove to fresh air; get medical attention immediately.
4. Ingestion
 - Do not induce vomiting. Give large quantities of water. Get medical attention immediately.
5. Spillage
 - If spillage does occur, contain spill and assess situation.
6. Personal Protective Equipment
 - To protect the body from contact, wear impervious gloves, goggles, face shield and chemical spill raingear (green suit).

B. Sodium Hypochlorite

Sodium hypochlorite is used to disinfect the plant effluent and for odor control. The OCL is stored in a 3600gallon main tank and two 460gallon day tanks located in the secondary process building's chlorine storage room and in a 3000 gallon auxiliary storage tank located in the odor control facility. The tanks stand within a chemical containment areas but spillage can occur during the filling operation.

1. Eyes
 - Severe irritation and/or burns can occur following exposure. Immediately flush with large amounts of water for at least 15 minutes. Get medical treatment at once.

2. Skin
 - Causes burns characterized by redness, swelling and scab formation. Flush with copious amounts of water.
3. Inhalation
 - Causes nausea, headache or dizziness, move to fresh air until symptoms disappear.
4. Ingestion
 - Causes irritation and/or burns to entire gastrointestinal tract. Immediately drink large quantities of water. Do not induce vomiting. Call a physician immediately
5. Spillage
 - Contain spill. Chemical is soluble in water. Vapors can be suppressed by water fogging. For a land spill, can be hosed down depending on location or absorbed with sand, clay or commercial absorbents.
6. Personal Protective Equipment
 - Goggles face shield, chemical spill rain gear, gloves, and rubber boots.

C. Polymer

Percol 7981A is a water-based liquid polymer used to de-water incinerator sludge, which is stored in a 6000 gallon tank inside the solids handling building. Spillage could occur during filling and when pumping product to the belt filter press.

1. Eyes
 - May cause irritation. Flush with large amounts of water.
2. Skin
 - May cause irritation. Thoroughly wash exposed area with soap and water.
3. Inhalation
 - Vapor and mist can cause irritation of nasal and respiratory passages; remove to fresh air.
4. Ingestion
 - May cause gastrointestinal irritation and large amounts can cause serious harm. Get medical attention immediately.
5. Spillage
 - Contain spill and absorb with absorbent material or hose down if conditions permit, to reduce slipping hazard.
6. Personal Protective Equipment
 - Gloves, goggles, and protective clothing to limit body contact.

D. Polymer

Magnifloc 1598C polymer is used in rare instances to aid in secondary clarifier settling. It is an oil and water emulsion polymer. This polymer is purchased in 55gallon drums on a per use basis and is kept in the Chlorine

Storage room only as long as it takes to pump into the system. None of this polymer is kept on site. Spills can occur during hook-up of a new barrel to the RAS line.

1. Eyes
 - Mild eye irritation; irrigate eyes with plenty of water for 15 minutes.
2. Skin
 - Moderate skin irritation - remove contaminated clothing and flush skin thoroughly with water.
3. Inhalation
 - Where exposures are below permissible exposure limit, no respiratory protection is required.
4. Ingestion
 - May cause chemical pneumonitis, get medical attention immediately.
5. Spillage
 - Contain spill and absorb as much as possible and, if possible, hose down with copious amounts of water. Chlorine will help break down polymer faster to a non-slippery state.
6. Personal Protective Equipment
 - Gloves, goggles, protective clothing.

E. Sodium Bisulfite

Sodium Bisulfite is used to dechlorinate the plant effluent. The bisulfite is stored in a 175gallon tank located in the secondary process building's bisulfite storage room and in a 300 gallon auxiliary storage tote located just outside of the bisulfite storage room. The tank stands in a containment basin but spillage can occur during the filling operation.

1. Eyes
 - Solution contact will irritate eyes. Long untreated exposures may cause burns. Immediately flush with plenty of water, continuing for at least 15 minutes. Get medical attention.
2. Skin
 - Repeated or prolonged contact with the product may cause irritation. Promptly flush with plenty of soap and water.
3. Inhalation
 - Odors from this chemical make most people very uncomfortable. Keep the room well ventilated while filling the tank. Inhalation of mist may irritate respiratory tract. Promptly remove to fresh air.
4. Ingestion
 - May irritate gastrointestinal tract. Very large doses cause violent colic, diarrhea, depression and death. May cause severe allergic reactions to some asthmatics. If conscious, give plenty of water or milk. Induce vomiting by touching finger to the back of throat. Get medical attention.

5. Spillage
 - Dilute small spills cautiously with water. Neutralize residue with alkali such as soda ash, lime or limestone. Sulfur dioxide and carbon dioxide may be released during neutralization.
6. Personal Protective Equipment
 - Neoprene, rubber or nitrile gloves, rubber or PVC suit or rain gear and goggles or safety glasses with full-face shield must be worn.

F. Granulated Carbon

Granulated Carbon is used at pump station #15 as an added odor absorbent between the odor scrubber discharge and the atmosphere. When wet carbon can deplete the oxygen in the surrounding area. Store in a dry well ventilated area.

1. Eyes
 - The physical nature of this product may produce eye irritation. In case of eye contact flush with water for at least 15 minutes.
2. Skin
 - Activated carbon is not a primary skin irritant. No sensation effects are known.
3. Inhalation
 - The physical nature of this product may irritate the respiratory system.
4. Ingestion
 - This product is non-toxic through ingestion.
5. Personal Protective Equipment
 - Goggles or safety glasses and gloves are recommended. When transferring the carbon to and from the PS #15 containers a half mask respirator with NIOSH P100 cartridges is required for the workers.

G. Bioxide

Bioxide is used for odor control at pump stations 13, 14, 18 and 20. The bioxide is stored in a 2500gallon tank at pump station 13 and in a 550 gallon tank at pump station 14. Pump station 18 has two 1000 gallon tanks and pump station 20 has two 500 gallon storage tanks. Spillage can occur during the filling or transfer operations.

1. Eyes
 - Immediately flush with plenty of water, continuing for at least 15 minutes. Get medical attention.
2. Skin
 - Promptly flush with plenty of soap and water.
3. Inhalation
 - Promptly remove to fresh air. Get medical attention.

4. Ingestion
 - Very large doses cause violent gastroenteritis. If conscious induce vomiting. Get medical attention.
5. Spillage
 - Flush small spills into wet well. For Larger spills, contain the spill and recover as much bioxide as possible and pump it into the bioxide tank. Discharge the remaining liquid directly into the wet well. Rinse the area and discharge the wash water into the wet well.
 - Dispose of solid waste in a dumpster.
6. Personal Protective Equipment
 - Neoprene, rubber or nitrile gloves and goggles or safety glasses

MEMORANDUM

DATE: 1/20/99
TO:
FROM: City of Anacortes
Wastewater Treatment Plant
P.O. Box 547
Anacortes, WA 98221
RE: Material Safety Data Sheet(s)

Please send us a Material Safety Data Sheet (MSDS) for the product(s) listed below.

-
-
-

The MSDS is for our hazard communication program required by the Worker and Community Right to Know Act. Please make sure each MSDS meets the requirements of WAC 296-62-054, Hazard Communication Standard (equivalent to 29 CFR 1910, 1200, OSHA Hazard Communication Standard). Washington recognizes a complete and accurate OSHA Form MSDS 174 MSDS as complying with state requirements.

Accident Prevention Plan Hazardous Energy Control Safety Lockout / Tag-out

I. Purpose

In order to ensure maximum safety for employees and associated personnel, the Wastewater Treatment Plant of the City of Anacortes has established the following plan regarding the de-energizing of hazardous energy sources on equipment down for maintenance or service. These energy sources can include electrical, hydraulic, pneumatic and gravity.

II. Procedure

1. Before any type of power equipment is to have maintenance or service performed, it shall be isolated from all power and stored energy sources. If possible, the stored energy of the equipment being serviced or maintained shall be released. The purpose of this procedure is to ensure that no re-energization will occur until the lockout system is removed. All employees of the wastewater treatment plant are required to use these procedures.
2. Proper notification to all affected employees or associated personnel must be established prior to locking out equipment. A supervisor, all operators and any contractors or sub-contractors working around equipment to be locked out shall be notified. All employees who are in the same work area are to be notified. All employees whose work area can be affected by the lockout shall be notified.
3. Equipment to be locked out shall be shut down by normal means before locking out. All stored electrical energy, hydraulic energy, mechanical energy, pneumatic energy, gravitational energy, or other stored energy shall be released or neutralized. Any stored energy, which cannot be released, is to be blocked and/or locked to prevent its release.
4. Lockouts require personal locks to be effective. Tags for identification purposes shall accompany locks and/or lockout devices. If more than one person is working on a locked out unit, lockout clips that will accommodate more than one lock shall be used. Each employee shall have a lock on the lockout clip.
5. Electrical power lockouts are to be placed at the energy source. Motor disconnects, branch power switches, and branch power breakers are energy sources. Circuit breaker boxes are not good lockout points as they prevent access to other circuits in the breaker box. On/off switches are not acceptable lockout points.
6. When a chain is used as a locking device, a gang lock clip shall be used to join chain ends to accommodate multiple locks.

III. LOCK-OUT STATION LOCATIONS

1. Lockout stations are located in the MCC rooms for the head works building, secondary process building, and the solids handling building.
2. The incinerator control room has it's own lockout station.
3. The admin building electrical room also has a lockout station.
4. Small red tool boxes with lockout tags and locks are located in the MCC rooms at PS #13, 14 & 15 and in truck 150 for use at the pump stations.

IV. TAG-OUT PROCEDURES

1. All equipment taken out of service shall be tagged out in accordance with Equipment Specific Tag-out Procedures utilizing an "out of service" tag attached to a gang lock clip with a nylon self-locking wire tie.
2. All equipment being put back into service shall be done in accordance with Equipment Specific Startup Procedures. Start up shall be authorized by a supervisor or plant manager, unless startup is being performed by individual who took equipment out of service in accordance to Equipment Specific Tag-out Procedures.
3. Authorization for startup shall be recorded on the tagout/startup sheet. Adherence to procedures shall be recorded on tag-out/startup sheet.
4. Tags are not to be used to provide a safe working environment for any individual. Tags are to be used only to keep a piece of equipment out of service.
5. **Procedures**, logs, tags, ties, and locks are located at each lockout/tag-out station.

V. LOCK OUT PROCEDURES

Any person subject to injury working on or around tagged out equipment shall install a personal lock on the gang lock clip used for tag-out. A signed and dated Danger--"Do Not Operate" tag shall accompany all personal locks. The key to the lock will be on the person who installed the lock at all times. These locks will be removed by the end of each shift, or working day, and re-installed when and if work is to be resumed by that person. These locks and tags are located at each lockout/tag-out station.

1. All equipment being worked on shall be locked out in accordance with Equipment Specific Lock-out Procedures utilizing an "Do Not Operate" tag attached to a gang lock clip with a lock for each person working on or around the equipment..
2. All equipment being put back into service shall be done in accordance with Equipment Specific Startup Procedures. Start up shall be authorized by a supervisor or plant manager, unless startup is being performed by individual who took equipment out of service in accordance to Equipment Specific Lock-out Procedures.

3. Authorization for startup shall be recorded on the Lockout/startup sheet. Adherence to procedures shall be recorded on the Lockout/startup sheet.
4. **Procedures**, logs, tags, ties, and locks are located at each lockout/tag-out station.

A. LOCKOUT/TAG-OUT DEVICES

1. Lockout/tag-out devices shall be capable of withstanding the environment to which they are exposed for the maximum time that exposure is expected.
2. Lockout/tag-out devices shall be substantial enough to prevent removal without use of excessive force or unusual techniques; such as with the use of bolt cutters or other metal cutting tools.
3. Lockout/tag-out devices shall be standardized in color (red). Print and format in tags shall be standardized.

B. PERIODIC INSPECTION

An annual inspection shall be performed and documented by safety foreman. The purpose of this inspection is to ensure the procedures and requirements of this policy are being followed. Any deviations or inadequacies identified shall be corrected.

C. TRAINING

1. Training shall be provided on an annual basis to ensure that employees understand the purpose and function of the lockout-tag-out program, and that the employees acquire the knowledge and skills required for the safe application, usage, and removal of lockout/tag-out devices.
2. When a tag-out system is used, as is the case at this plant, employees shall be trained in the limitations of tags. Tags are essentially warning devices and do not provide physical restraint that is provided by a lock. When an out-of-service tag is attached to an energy-isolating device, it is not to be removed without authorization from a foreman or plant manager, unless person removing tag is same person who tagged out equipment removed from service. This policy is never to be bypassed, ignored, or otherwise defeated.
3. Retraining shall be provided to affected employees whenever there is a change in machines, equipment or processes that present a new hazard, or when there is a change in the energy control procedures.

VI.COMPLIANCE

Any employee who does not comply with this plan is subject to disciplinary actions and possible termination of employment.

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City of Anacortes Wastewater Treatment Plant

March 3, 2000

Revised December 17, 2007

Chemical Hygiene Plan

I. Purpose

The purpose of the Chemical Hygiene Plan is to protect employees from **health hazards** while working with **hazardous chemicals** by establishing safe work practices and procedures. The Chemical Hygiene Plan complies with the requirements outlined in WAC 296-62-400.

Hazardous chemicals –

Chemicals for which there is significant evidence based on at least one legitimate study that *acute* or *chronic health effects* may occur in exposed employees.

Health hazard –

A chemical that is a health hazard will likely cause a measurable change in the body. The term “health hazard” includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins (chemicals which produce liver damage), nephrotoxins (chemicals which produce kidney damage), neurotoxins (chemicals whose primary toxic effect is on the nervous system), agents which act on the hematopoietic (blood) systems, and agents which damage the lungs, skin, eyes, or mucous membranes.

Acute health effects are immediate or slightly delayed (burns, inflammation, allergic responses, damage to eyes, lungs, nervous system); chronic health effects are delayed or cumulative after repetitive exposure (some are reversible after elimination of exposure to chemical, some are irreversible (cancer).

In addition to the chemical hazards there are physical hazards to consider. Physical hazards include fire, explosion, electrical shock, and hazards from the means of containment (gas cylinders, glass apparatus, furnaces, etc).

II. Plan Management

A. Availability of the Chemical Hygiene Plan

A copy of the Chemical Hygiene Plan is kept in the lab with a copy of the NPDES Permit, SOPs, the QA/QC Manual, and other related documents. The Chemical Hygiene Plan is readily available to employees, employee representatives and, upon request, to the director of the department of Labor and Industries.

B. Responsibility

1. The Plant Manager (John Franz) is ultimately responsible for ensuring the Chemical Hygiene Plan is implemented and enforced.

2. The Lab Supervisor is also designated as the Chemical Hygiene Officer. The Chemical Hygiene Officer has the following responsibilities:
 - Work with administrators and other employees to establish chemical hygiene policies and practices
 - Monitor purchase, use, and disposal of chemicals used in the lab
 - Know the current legal requirements concerning regulated substances
 - Seek ways to improve the Chemical Hygiene Plan
3. The Lab Supervisor's responsibilities are:
 - Ensure workers know and follow the chemical hygiene rules
 - Ensure protective equipment is available and in working order
 - Ensure appropriate training has been provided
 - Provide regular, formal chemical hygiene and housekeeping inspections
 - Ensure routine inspections of emergency equipment are done
 - Know the current legal requirements concerning regulated substances
 - Determine the required levels of protective apparel and equipment
 - Ensure employees are trained and the facilities are adequate for any material being ordered
4. The lab worker is responsible for:
 - Following the practices described in the Chemical Hygiene Plan for each operation
 - Developing good personal chemical hygiene habits

C. Information and Training

All Wastewater Treatment Plant employees are trained in first aid.

Chemical hygiene training occurs each time an operator rotates into the lab. Training covers the following issues:

- The risks associated with working in the lab
- What to do if there is an accident
- The location and proper use of protective apparel and equipment
- Review of the Chemical Hygiene plan

D. Review and Update of the Plan

The Chemical Hygiene Plan is reviewed and updated by the Chemical Hygiene Officer as follows:

- Annually
- Whenever new procedures are implemented which involve the use of hazardous chemicals
- To reflect changes in the law

III. Procedures for Working with Chemicals

A. Emergencies

In case of an emergency **CALL 911** (When using a **Nextel**, select **Emergency** on the Radio contact list or dial **336-3131**) for fire, ambulance, and police.

B. General Rules

Minimize all chemical exposures by planning ahead and performing work in a manner which reduces the duration and extent of exposure to all chemicals.

- Avoid skin contact with all chemicals (Few chemicals are without hazards)
- Use special precautions for chemicals with special hazards
- Assume any mixture is more toxic than its most toxic component
- Assume all substances of unknown toxicity are toxic

C. Engineering Controls

1. Air Changes
 - Adequate air changes (approximately 22 air changes/hour)
 - The air intake for the lab is located on the northeast wall of the Administration Building, free from contamination
 - The air is exhausted outside
2. Hoods
 - One fume hood
 - Two canopy hoods
3. Sinks
 - Two sinks
 - Seven cup sinks (one cup sink is located in the fume hood)

D. Safety Equipment

1. Emergency Shower
 - One drench type emergency shower
2. Eyewashes
 - Two eyewashes (one at each sink)
3. Fire Extinguishers
 - Two ABC fire extinguishers
4. Fire Blanket
 - One fire blanket
5. Fire alarm pull stations
 - Located in the lab next to the East Exit
 - Located on the East wall in the reception area
 - Located next to the West Administration Building Exit
6. Telephones
 - Located in the lab above the desk
 - Located at each desk in the Administration Building (Plant Manager, Secretary, Maintenance Foreman, and Operations Foreman)
 - Located in the lunchroom by the South Exit
7. Waste Disposal Equipment
 - Glass disposal box
 - Biohazard bag for fecal coliform waste

The plant computer maintenance program tracks the due date for all the preventative maintenance of the lab safety equipment.

E. Personal Protective Apparel and Equipment

1. Gloves
 - Nitrile and Latex gloves are kept in the lab on the countertop
2. Eyewear
 - Safety glasses
 - Goggles
 - Face shields
3. Clothing
 - Lab coats (lab supervisor)
 - Uniforms or coveralls (operators)
4. Shoes
 - Only closed-toe leather shoes are allowed (The City provides operators with steel-toe leather boots)
5. Respirators
 - Respirators are available for all employees to use; currently the only chemical used in the lab requiring the use of a respirator is Sodium Acetate Trihydrate

F. Basic Rules and Procedures for Working with Chemicals

1. General Lab Safety Rules
 - (1) Avoid “routine” exposure to chemicals by following these rules for personal protection:
 - Safety glasses must be worn at all times when working in the lab, except when working at the desk
 - Avoid wearing contact lenses in the lab
 - Any person entering the lab must wear safety glasses
 - Wear a face shield when cleaning up spills
 - Always wear a lab coat or other apparel that is removed after the workshift is over
 - Remove lab coats or change clothing immediately on significant contamination
 - Disposable protective gloves are recommended when working with chemicals in the lab
 - Always wear gloves when working with concentrated acids and bases
 - Inspect gloves before each use
 - Change gloves frequently
 - Wash hands after removing gloves
 - Always wear leather, closed-toe shoes
 - Work in a fume hood when using concentrated acids, bases (caustic), or solvents
 - Wear a respirator when toxic fumes are present or when working with concentrated acids outside a fume hood; inspect the respirator before use

- Always add acid and bases (caustic) to water to prevent violent reaction and spattering. Use pyrex glassware designed to withstand the heat produced from the chemical reaction.
- (2) Do not smell or taste chemicals.
 - (3) Perform work which may discharge toxic fumes in the fume hood.
 - (4) Use only chemicals for which there is adequate ventilation.
 - (5) Do not eat, drink, smoke, or apply cosmetics in areas where laboratory chemicals are present. Wash hands before conducting these activities.
 - (6) Do not store, handle, or consume food or beverages in storage areas, refrigerators, glassware, or with utensils which are used for laboratory operations.
 - (7) Glassware
 - Handle and store all glassware with care to avoid damage
 - Do not use damaged glassware
 - (8) Wash areas of exposed skin well before leaving the lab (even if gloves were worn).
 - (9) Avoid practical jokes or other behavior which might confuse, startle, or distract another worker.
 - (10) Do not use mouth suction to pipet or start a siphon.
 - (11) Confine long hair and loose clothing.
 - (12) Housekeeping
 - Keep the work area clean and uncluttered
 - Keep chemicals properly labeled and stored
 - Clean up the work area when finished with a procedure or at the end of the day
 - (13) Before beginning a new procedure check the MSDS of all chemicals used, review information about the hazards, plan appropriate protective procedures, and plan the positioning of equipment.
 - (14) Unattended operations:
 - Leave the lights on
 - Place an appropriate sign on the door or equipment in use
 - (15) Fume hood:
 - Use a hood when working with concentrated acids, bases, or volatile substances
 - Keep the hood closed at all times except when adjustments are being made in the hood
 - (16) Do not store materials or chemicals in the hood.
 - (17) Do not block the air flow vents.
 - (18) Always leave the hood on.
 - (19) Be alert to unsafe conditions and see they are corrected when detected.
 - (20) Do not discharge substances which might interfere with the biological process of the treatment plant or which may create a fire or explosion hazard, cause structural damage, or obstruct flow. Check the MSDS before disposing of any chemicals.

- Chemicals used in lab procedures are neutralized by the test performed or used in sufficiently small quantities that they do not present disposal hazards at the conclusion of the test.
- (21) Do not work alone if the procedure is hazardous. (Currently there are no procedures that cannot be performed alone.) Avoid working alone in the lab when no one else is present at the treatment plant.

G. Chemical Handling

1. Receiving Chemicals:
 - (1) An MSDS must be on file for all chemicals received. If there isn't one on file, contact the supplier and request one.
 - (2) Do not accept any container without a proper identifying label.
 - (3) Order chemicals in quantities that will be used in a reasonable period of time.
2. Chemical Storage:
 - (1) Store chemicals with regard to their compatibility with other chemicals.
 - (2) Return chemicals to their proper place after use.
 - (3) Do not store chemicals on lab bench tops.
 - (4) Examine the containers of stored chemicals annually for replacement, deterioration, expiration, and container integrity.

H. Signs and Labels

1. In case of an emergency **CALL 911** (When using a **Nextel**, select **Emergency** on the Radio contact list or dial **336-3131**) for fire, ambulance, and police. Employees' home telephone numbers are posted next to all the phones in the Admin building.
2. There are no areas or equipment with special hazards, however if in the future new equipment with special hazards are used, warning signs will be posted.
3. Location signs are posted for the safety shower, eyewashes, fire extinguishers, fire alarm pull stations, and the building exits.
4. Containers (including waste receptacles other than trash) are labeled with the contents and hazards.

I. Accidents and Spills

Take a copy of the MSDS to the emergency room if medical attention is required.

1. Eye Contact – promptly flush eyes with water for 15 minutes and seek medical attention.
2. Skin Contact – promptly flush the affected area with water and remove any contaminated clothing. If symptoms persist after washing seek medical attention.
3. Ingestion – Refer to MSDS to determine if you should encourage the victim to drink large quantities of water or milk, or if you should help induce vomiting. Different chemicals require different action to be taken.

4. Cleanup –Wear proper personal protective equipment (gloves, safety glasses, overgarment). Follow the cleanup procedures for the specific chemical. Use the spill kit to cleanup spills from acids and bases. Dispose of material properly. Dispose of any leather products that are contaminated with acids.

IV. Housekeeping, Maintenance, and Inspections

A. Housekeeping

Safety in the lab is directly related to housekeeping standards. The lab is kept orderly, clean, and all chemicals and equipment are labeled properly and stored.

1. Benchtops are cleaned weekly and continually kept free from obstructions and clutter. Routine cleanup is done when an analysis is completed and when the daily work is done; it is an ongoing effort by all lab workers.
2. Waste is disposed of properly.
 - (1) Chemical waste disposal – see below.
 - (2) Biohazard waste – fecal coliform cultures are collected in red biohazard bags. Once a week the waste is autoclaved. The bag is then handled as regular trash. The bag has a color change strip to indicate proper sterilization occurred.
 - (3) Broken glass – all broken glass is placed in the broken glass box. When the box is full it is sealed and placed in the dumpster behind the Administration Building.
3. Spilled chemicals are cleaned up immediately and disposed of properly.
4. Unlabeled containers and chemical waste are disposed of promptly using appropriate procedures.
5. Floors are swept daily and mopped once a week.
6. Walkways (hallways, etc.) are not used as storage areas.
7. Access to exits, emergency equipment, controls, etc. is kept clear at all times.

B. Inspections

1. Formal housekeeping and chemical hygiene inspections are held quarterly. Inspections involve reviewing the Chemical Hygiene Plan to ensure all aspects of the plan are being followed.
2. Informal inspections are conducted continuously.

C. Maintenance

1. Eyewash fountains are tested weekly by the rounds operator.
2. The safety shower is tested weekly by the rounds operator.
3. Fire extinguishers are inspected monthly and serviced annually.
4. Respirators are inspected before use.

V. Material Safety Data Sheets (MSDS)

All MSDSs are kept in three ring binders in the PMP room above the Operations Supervisor's desk. A separate binder is dedicated to MSDSs for lab chemicals. Lab workers review MSDSs at the beginning of each rotation into the lab of all chemicals used on a routine basis.

VI. Safety Recommendations

A. Corrosive Agents

The major classes of corrosive chemicals are strong acids and bases, dehydrating agents, and oxidizing agents. Some chemicals, e.g. sulfuric acid, belong to more than one class. Inhalation of vapors or mists of these substances can cause severe bronchial irritation. These chemicals erode the skin and respiratory epithelium and are particularly damaging to the eyes.

1. Strong Acids: All concentrated strong acids can damage the skin and eyes. Exposed areas should be flushed promptly with water.
2. Strong Bases: The common strong bases are potassium hydroxide, sodium hydroxide, and ammonia. Ammonia is a severe bronchial irritant and should always be used in a well ventilated area. If exposure occurs to the eyes, the affected areas should be washed at once with copious quantities of water and an ophthalmologist should evaluate the need for further treatment.
3. Dehydrating Agents: The strong dehydrating agents include concentrated sulfuric acid and sodium hydroxide. Because much heat is evolved on mixing these substances with water, mixing should always be done by adding the agent to water to avoid violent reaction and spattering. Because of their affinity to water, these substances cause severe burns on contact with the skin. Affected areas should be washed promptly with large volumes of water.
4. Oxidizing Agents: In addition to their corrosive properties, powerful oxidizing agents such as perchloric and chromic acids, present fire and explosion hazards on contact with organic compounds and other oxidizing substances. Strong oxidizing agents should be stored and used in glass or other inert containers and corks and rubber stoppers should not be used. (Currently there are no powerful oxidizing agents on hand.)

B. Electrically Powered Laboratory Apparatus

When a person has received a serious electrical shock, first throw the switch or circuit breaker to turn off the current. Do not touch the victim until he or she is separated from the current source. Begin mouth-to-mouth resuscitation if breathing has ceased.

1. General principles:
 - All 110-V outlet receptacles in the lab are standard design outlets that accept a three-prong plug and provide a ground connection. Never attempt to bypass the ground.

- Only use extension cords with a standard three-conductor plug that provides an independent ground connection.
- Receptacles providing electric power for work inside hoods are located outside of the hood. This prevents the production of electrical sparks inside the hood and also allows a laboratory worker to disconnect electrical devices from outside the hood.
- All frayed or damaged line cords must be replaced before further use of the equipment is permitted.
- Electrical cords are inspected at least annually.
- All equipment that is plugged into an electrical receptacle should be fitted with a fuse or other overload protection device that will disconnect the electrical circuit in the event the apparatus fails or is overloaded. Especially apparatus likely to be left on and unattended for long periods of time, such as a drying oven.
- Nonsparking induction motors should be used on motor driven electrical equipment when used in a laboratory where volatile flammable materials may be present rather than a series wound motor using carbon brushes. This applies to the motors used in vacuum pumps, mechanical shakers, and stirring motors. A variable autotransformer should not be used to control the speed of an induction motor operating under a load since this will cause the motor to overheat and possibly start a fire. There is no way to modify an apparatus that has a series wound motor so that it will be spark free, therefore many normal household appliances should not be used in laboratories where flammable materials may be present. Additionally, when other equipment, especially vacuum cleaners and portable electric drills, having series wound motors are brought into the laboratory special precautions should be taken to ensure that no flammable vapors are present before using such equipment.
- Locate electrical equipment where the risk of spilling water or chemicals on the equipment is minimized. If a spill occurs, unplug the equipment immediately and do not use it again until it has been cleaned and inspected by a qualified technician.
- With the exception of certain instrument adjustments, unplug power cords of electrical equipment before any adjustments, modifications, or repairs are undertaken.
- Lab workers hands should be dry before handling electrical equipment that is plugged in.

VII. Emergency Response for Chemical Spills and Accidents

A. Emergencies Encountered in a Laboratory Workplace

1. Thermal and chemical burns.
2. Cuts and puncture wounds from glass or metal, including possible chemical contamination.
3. Skin irritations by chemicals.
4. Poisoning by ingestion, inhalation, or skin absorption.

5. Asphyxiation (chemical or electrical).
6. Injuries to the eyes from splashed chemicals.

B. Emergency Procedures

The following emergency procedures are recommended in the event of fire, explosion, or other laboratory accident. These procedures are intended to limit injuries and minimize damage if an accident occurs.

1. Render assistance to persons involved and remove them to prevent further injury if necessary.
2. Warn personnel in adjacent areas of any potential hazards to their safety.
3. Render immediate first aid; appropriate measures include washing under a safety shower, removing contaminated clothing, CPR if breathing has stopped, and any special first aid measures necessary.

Note: All Wastewater Treatment Plant employees are trained in first aid and CPR. Rendering first and/or CPR assistance in an emergency situation is not a job requirement for Wastewater Treatment Plant employees. Trained employees may choose to render assistance under the provisions of the “Good Samaritan” Act until medical help is obtained. (Refer to the City of Anacortes Accident Prevention Manual.)

4. Extinguish small fires using a portable extinguisher. Turn off nearby apparatus and remove combustible materials from the area. In case of larger fires, contact the Fire Department immediately.

C. Evacuation Procedures

1. If the fire alarm sounds, all personnel are required to evacuate the treatment plant buildings by following the posted escape routes to exit the buildings. All personnel will meet on the lawn area between the south gate and the secondary clarifier. Evacuation procedures documented in the Escape Route Standard Operating Procedure contained in the Plant Safety Policy binder in the control room.
2. The fire alarm sound is distinct from all other alarms making it easy to identify. There are no other hazards present requiring a separate evacuation alarm.
3. Personnel may return to their workstation after emergency workers have determined the area is safe. Depending on the emergency, precautions may need to be taken before resuming regular operations.

D. Medical Emergencies

In the event of a medical emergency, laboratory personnel should remain calm and do only what is necessary to protect life.

1. Summon medical help immediately. **CALL 911** (When using a **Nextel**, select **Emergency** on the Radio contact list or dial **336-3131**) the Anacortes Fire Department will respond immediately.
2. Do not move an injured person unless he or she is in danger of further harm.

3. Keep an injured person warm. If feasible, designate one person to remain with the injured person. Have that person stay within sight, sound, or physical contact of the injured person at all times.
4. If clothing is on fire, knock the person to the floor and roll him or her around to smother the flames or, if a safety shower is immediately available, douse the person with water.
5. For chemical spills covering small areas of skin:
 - Immediately flush with flowing water for no less than 15 minutes.
 - If there is no visible burn, wash with warm water and soap, removing any jewelry to facilitate clearing of any residual materials.
 - Check the Material Safety Data Sheet (MSDS) to see if any delayed effects should be expected.
 - Seek medical attention for even minor chemical burns.
 - Do not use creams, lotions, or salves.
6. For chemical spills on clothes:
 - Do not attempt to wipe the clothes.
 - Quickly remove all contaminated clothing, shoes, and jewelry while using the safety shower.
 - Seconds count, do not waste time with modesty.
 - Take care not to spread the chemical on the skin or, especially, in the eyes.
 - Use caution when removing pullover shirts or sweaters to prevent contamination of the eyes; it may be better to cut the garments off.
 - Immediately flood the affected body area with warm water for at least 15 minutes. Resume if pain returns.
 - Get medical attention as soon as possible.
 - Discard contaminated clothes or have them laundered separately from other clothing.
7. For chemical splashes into the eye:
 - Immediately flush with tepid potable water from a gently flowing source for at least 15 minutes.
 - Forcibly hold the individual's eyelids away from the eyeball, and instruct him or her to move the eye up and down and sideways to wash thoroughly behind the eyelids.
 - Use an eyewash. If one is not available, place the injured person on his or her back and pour water gently into the eyes for at least 15 minutes.
 - Follow first aid by prompt treatment by a member of a medical staff or an ophthalmologist who is acquainted with chemical injuries.

E. Medical Facilities

Employees requiring medical treatment are transported to Island Hospital emergency room for evaluation and treatment. An MSDS is taken or faxed to the hospital to assist in treatment for chemical exposures.

F. Accident and Emergency Reporting

The employee completes the Employee's Incident/Near Miss Report and the supervisor completes the Supervisor's Incident/Near Miss Report to document all accidents, emergencies, and near misses. Further information for reporting accidents is available in the City's Accident Prevention Manual.

VIII. Medical Program

1. Currently no employee works with hazardous chemicals which require the employee to undergo medical examinations. If at anytime employees begin working with hazardous chemicals they will be given the opportunity to receive medical attention as defined in 29 CFR Part 1910.
2. All Wastewater Treatment Plant employees are trained in first aid.

IX. Records

1. The Human Resources Department retains accident records for 6 years.
2. The Human Resources Department retains medical records for at least the duration of employment plus 30 years as required by state and federal regulations.

X. Spill Control Procedures

Caring for injured personnel generally takes priority over implementing spill control measures.

The chemical spill treatment kit located in the lab contains products to clean up acid, caustic, and solvent spills. Sodium carbonate or sodium bicarbonate are commonly used to neutralize inorganic acids (such as sulfuric and nitric acid). Sodium bisulfate is commonly used to neutralize bases (caustic) (such as sodium and potassium hydroxide). Vermiculite and sand are commonly used as absorbents. Do not use paper towels as an absorbent to cleanup an oxidizer as they may later ignite. When a flammable solvent is absorbed in vermiculite or sand, the resultant solid is highly flammable and gives off flammable vapors. It must be properly contained or removed to a safe place.

A. Spill Response

1. Attend to any persons who may be contaminated.
2. Notify persons in the immediate area about the spill.
3. Evacuate all nonessential personnel from the spill area.
4. If the spilled material is flammable, turn off ignition and heat sources.
5. Avoid breathing vapors of the spilled material; if necessary, use a respirator.
6. Leave on or establish exhaust ventilation if it is safe to do so.
7. Secure supplies to effect cleanup (refer to MSDS for special precautions). Use the spill treatment kit if appropriate for the type of spill.
8. During cleanup, wear appropriate personal protective equipment (ppe). At a minimum wear appropriate gloves for the chemical present and safety goggles. Wear rubber (not leather) boots if there is a chance of

stepping into the spill. Wear an apron or a protective suit if there is a chance of body contact with the spill.

B. Handling of Spilled Liquids

1. Isolate the spill to keep it from spreading.
2. Notify a Supervisor.
3. Wear proper ppe.
4. Identify the spill (acid, caustic, solvent, other?).
5. Select the proper spill treatment agent.
6. Treat the spill by first encircling the spill with the spill agent then continuing to apply agent evenly onto the spill.
7. Carefully mix the agent into the spill.

Note: If the spill is corrosive, the neutralization reaction will subside after a few minutes leaving a paste-like residue. If the spill is a solvent, add spill agent until all the solvent is adsorbed.
8. Test the pH of the spill residue from corrosive spills as follows:
 - Place about 10 cc (10mLs) of residue into a 150 mL beaker.
 - Slowly add distilled water until the volume reaches about 100 mLs.
 - Stir for about 3 minutes. (Severe foaming and high heat generation is a sign of incomplete neutralization.)
 - Check the pH of the solution using the pH meter. The pH must be between 2.0 and 12.5 to fall outside the EPA criteria for corrosive material.
 - If the pH is not between 2.0 and 12.5 add more spill agent, mix, and retest the residue.
 - Record the pH onto the Chemical Spill Waste disposal bag.
9. Record spill type, treatment (“neutralized acid/base pH = __”, “adsorbed solvent:_____”), and recommended disposal method onto the label of the bag.
10. After residue is room temperature, use scraper and pan to pick up the residue and place it into the labeled bag.
11. Rinse and decontaminate the area and utensils. Carefully pick up and clean items that have been splashed or immersed.
12. Dispose of residues properly as hazardous or nonhazardous waste.

C. Handling of Spilled Solids

Generally, sweep spilled solids of low toxicity into a dustpan and place them in a solid waste container for disposal. Additional precautions may be necessary when cleaning up spills of more highly toxic solids. Refer to the material safety data sheet of the spilled material for further information.

D. Handling Mercury Spills

Use the mercury spill kit located under the lab sink in cabinet C-10.

1. Isolate the spill area.
2. Wear protective gloves.

3. Consolidate the mercury droplets using a scraper or piece of cardboard.
4. Pick up the pooled mercury using the Hg Absorb powder and sponge from the spill kit.
5. Place all mercury residue in a thick-wall high-density polyethylene bottle.
6. Dispose of as hazardous waste.

XI. Chemical Waste Disposal Practices

A. Aim

To assure that minimal harm to people, other organisms, and the environment will result from the disposal of waste laboratory chemicals.

B. Waste Generator Status

The City of Anacortes Wastewater Treatment Plant is classified as a Small Quantity Generator (SQG) since it generates less than 220 pounds of dangerous waste and less than 2.2 pounds of extremely hazardous waste per month or batch.

C. Waste Designation

A material is considered a hazardous waste if it meets one or more of the following characteristics (See WAC 173-303):

1. Is the waste listed on Washington's Discarded Chemicals Products list? (WAC 173-303-081)
2. Is the waste listed on Washington's Dangerous Waste Sources list? (WAC 173-303-082)
3. Does the waste exhibit any dangerous waste characteristics? (WAC 173-303-090)
 - Is the waste ignitable?
 - Is the waste corrosive?
 - Is the waste reactive?
 - Is the waste toxic under the Toxicity Characteristic Leaching Procedure (TCLP)?
4. Does the waste meet any dangerous waste criteria as either a toxic dangerous waste or a persistent dangerous waste? (WAC 173-303-100)

D. Waste Disposal Practices

1. Biohazard waste generated from the fecal coliform membrane filter method is collected in an autoclavable biohazard bag; once a week the bag is closed with an autoclavable twist tie and sterilized; after sterilization, the bag is placed in the regular waste receptacle.
2. Glass, broken or unbroken is collected in a waste receptacle labeled "Broken Glass"; when full, the receptacle is taped closed and discarded as regular waste.
3. Reagents are made in quantities that are used up before the reagent expires. In addition, chemicals are ordered in the smallest quantities practical. These measures help avoid expiring of chemicals in stock and

the associated expense of disposal of these expired chemicals, as well as, avoiding storage problems.

4. Expired chemicals and chemicals no longer in use are promptly disposed of through Skagit County Small Quantity Generator Program:
Skagit County Recycling and Transfer Station
14104 Ovenell Road
Mount Vernon
Phone Number: (360) 424-9532
Hours for SQG Waste: the 3rd Wednesday of each month from 0830 to 1530
Requirements: bring waste in a safe, labeled (or bring MSDS and description of contents), leak proof container
Cost: depends on the type of chemical, PO is accepted
5. Waste is disposed of as soon as feasible when it is generated or whenever a chemical is deemed no longer useful.
6. Indiscriminate disposal by pouring waste chemicals down the drain or adding them to mixed refuse for landfill burial is unacceptable.
7. Hoods are not used as a means of disposal for volatile chemicals.

Appendix A

AWWTP Laboratory Quality Assurance Checklist

<u>GENERAL</u>	<u>YES</u>	<u>NO</u>	<u>COMMENTS</u>
1. Is the Chemical Hygiene Plan up-to-date and available to all lab personnel?	_____	_____	_____
2. Are employees trained on and following the practices described in the Chemical Hygiene Plan?	_____	_____	_____
3. Are employees home telephone numbers posted next to all the phones in the Administration building?	_____	_____	_____

HOUSEKEEPING

1. Are benchtops clean and free from obstructions and clutter?	_____	_____	_____
2. Is chipped and broken glassware placed in the glass disposal container?	_____	_____	_____
3. Is chemical, biological, and all other waste disposed of properly and promptly?	_____	_____	_____
4. Are spill cleanup procedures being followed?	_____	_____	_____
5. Are floors swept and mopped on a regular basis?	_____	_____	_____
6. Are walkway and hallways clear and free from obstructions?	_____	_____	_____
7. Is access to exits, emergency equipment, controls, etc. clear?	_____	_____	_____

SAFETY EQUIPMENT

1. Is pm performed on safety equipment according to schedule?	_____	_____	_____
2. Is protective equipment available, in working order, and used by all employees?	_____	_____	_____
3. Is the fume hood always left on, not used as a storage area, and the air flow vents kept unobstructed?	_____	_____	_____

CHEMICAL HANDLING

1. Is an MSDS on file for each chemical available in the lab?	_____	_____	_____
2. Do all containers have proper labels?	_____	_____	_____
3. Are chemicals stored according to their compatibility with other chemicals?	_____	_____	_____
4. Are chemicals put away after use?	_____	_____	_____
5. Are chemicals and their containers inspected for deterioration, expiration, and container integrity and disposed of as required?	_____	_____	_____

Plant Safety Plan Ladder Plan

April 1997

I. Purpose

The following is important safety information that should guide all Wastewater Treatment Plant personnel in the proper use of ladders. Reference: Washington Administrative Code 296-876 Ladders

A. Inspection

The purpose of ladder inspection is to routinely inspect and identify unsafe ladders and remove them from service so that they can be repaired or replaced.

General Inspection

The following is important safety information that should guide all plant employees in the proper inspection of ladders.

1. Wooden and fiberglass stepladders that are in good repair are to be kept at the ladder storage rack/area located in the Poly room. With the exception of the following wooden ladders: A 16' ladder stored in the generator room, A 12' ladder in the belt press room, a 10' ladder in the head works lower level and an 8' ladder in the secondary process lower level.
2. Aluminum extension ladders that are in good repair are to be kept on the rack at the aeration basin inlet channel.
3. Aluminum straight ladders that are in good repair are to be kept on racks on the railing at the south end of the diesel tank containment sump.
4. Ladders shall be inspected by a competent person every six (6) months and after any occurrence that could affect their safe use.
5. Ladders that have been inspected and need repairs should be placed away from the ladder storage area and properly labeled as an unusable ladder and a corrective maintenance work order written for repair. Structural defects such as, but not limited to, broken or missing rungs or steps, broken or split rails, corroded components or other faulty or defective components, shall be immediately tagged and marked in a manner that readily identifies it as defective (RED DO NOT USE TAG). This tag must be placed in a conspicuous manner on a leg of the ladder, easily visible to all potential users.

Step Ladder Inspection

The user is to insure that:

1. The steps are in good condition.
2. All support braces are attached and in good condition.

3. Top cap is in good condition with no breaks or cracks.
4. The locking side brackets function properly.
5. Channel shoes (if appropriate) are in place and in good condition.
6. Legs have no splits, cracks or damaged rivet connections.

Note:

The immediate user of any ladder is responsible for the safe use, inspection before and after each use and the proper storage of the ladder. The user must immediately report any defects etc. to a Plant Supervisor or the Plant Manager.

B. Step Ladders

The following rules are to always be practiced:

1. Never climb past the second rung from the top.
2. Make sure that the spreaders are functional and locked in place before climbing ladder.
3. If the ladder is positioned by a door or walkway, make sure that the door is locked or the walkway is barricaded to prevent collision.
4. Do not over reach while working on a stepladder, position the ladder to avoid leaning over base support.
5. No work shall be done from a ladder that requires the exertion of more than ordinary force. (i.e. the use of a cheater bar)
6. The load limit on the treatment plant's wooden stepladders is 250lbs and the load limit on fiberglass ladders is 375lbs.

C. Extension Ladders

The following rules are to always be practiced:

1. Always use the four - to - one rule: Position the ladder base one (1) foot away from the wall or support for every four (4) feet of ladder height (up to the support point).
2. An extension ladder should extend at least three (3) feet past its support point.
3. Never climb past the third rung from the top on an extension ladder.
4. Extension ladders must not be used when taken apart, as they are designed with safety shoes to prevent slipping.
5. Straight ladders must have positive stops (rung locks), which insure proper overlaps.
6. Their maximum length should be no greater than thirty-six (36) feet.
7. Tie down your ladder as close to the support point as possible. The ladder should extend three (3) feet above the anchor point.

8. Employees shall not ascend or descend ladders while carrying tools or materials that might interfere with the free use of both hands.
9. When working from a ladder, the ladder shall be secured at the top. The bottom of the ladder shall be secured if possible.
10. No work shall be done from a ladder that requires the exertion of more than ordinary force. (i.e. the use of a cheater bar)
11. No type of work shall be performed from a ladder over twenty (20) feet above the ground or floor that requires the use of both hands.
12. The area around the top and bottom of a ladder shall be kept clear.

D. Straight Ladders

1. Always use the four - to - one rule: Position the ladder base one (1) foot away from the wall or support for every four (4) feet of ladder height (up to the support point).
2. A straight ladder should extend at least three (3) feet past its support point.
3. Never climb past the third rung from the top on a straight ladder.
4. Straight ladders must have safety shoes to prevent slipping.
5. Employees shall not ascend or descend ladders while carrying tools or materials that might interfere with the free use of both hands.
6. No work shall be done from a ladder that requires the exertion of more than ordinary force. (i.e. the use of a cheater bar)
7. When working from a ladder, the ladder shall be secured at the top. The bottom of the ladder shall be secured if possible.
8. The area around the top and bottom of a ladder shall be kept clear.

II. Training

A. WAC 296-876-15005

- Train employees to recognize ladder hazards and the procedures to minimize these hazards.

Have a competent person train employees that use ladders in at least the following topics:

-The proper construction, use, placement, and care in handling ladders.

-The maximum intended load capacities of ladders that are used.

-The requirements of this chapter.

Retrain employees as necessary to make sure they know and understand the content of the original

Standard Operating Procedures

Power Outages

August 6, 1999

I. Description

When there is an interruption of power to the plant, the emergency generator in the Solids Handling Building will come on. This will initiate the transfer to emergency power alarm.

II. Procedure

A. Arrival at the Plant

1. Acknowledge the alarms at PMP.
2. Change PMP alarms to “Day Dialer”.
3. Put phone system in “All Phones” service.
4. Carry the cell phone with you.

B. What to Check

1. Solids Handling MCC Room
 - a) If generator is running, check the voltmeter on the south panel. At switch positions 1-2, 2-3 and 3-1, the meter should read 480 volts. At switch positions 1, 2 and 3, the meter should read 277 volts. If the voltage is not at these levels, the plant should be on generator power. Do not attempt to go back to city power if all three phases of power are not present. It can damage three-phase equipment.
 - b) If the plant should be on generator power, check the switch gear breakers located in the Emergency Power Transfer switch enclosure. The lever should be down. (Emergency breaker on – Normal power breaker off.)
2. To Go Back to City Power (when all three phases are available)
 - a) Check the contact position on the Service Disconnect (just below the voltmeter). Under normal conditions, when all three phases of power are present, it is closed.
 - b) If the contact position is open, check the “closing springs” indicator.
 - (1) If yellow “charge” is indicated, push the “push to close” button. If white “discharged” is indicated, you will need to pull out the black handle and pump up the closing springs to the charged position then push the “push to close” button. This should restore city power.

C. When Power is Restored (or if we'll be running on generator power)

1. Check Alarms at PMP.

- a) Note what equipment failed during the power outage.
- b) Restart and reset the down equipment in order of importance.
 - (1) Flow – Check influent pumps.
 - If both pumps have failed, close the influent gates to prevent a bypass event on start up. Reset breakers at MCC #1 as needed.
 - Check grease pump breakers. The influent pump will not start unless the grease pump is running.
 - To reset the alarm at CP1 (panel view), the switches on the local control panel at the top of the pumps must be in the off position. After you have reset the alarm, the lead pump will fail before you can get back upstairs to put it in auto. Try to get up in time to get the back up pump in auto. When the back up pump starts, select it as the lead (on panel at top of pumps).
 - Leave the failed pump in off position. Go back downstairs and reset the “fail” alarm. Go back upstairs and put the hand-off-auto switch back into auto.
 - (2) If the lead pump was the only one to fail:
 - Select the running pump as the lead pump.
 - Put the failed pump in off position.
 - Check the MCC breakers for the failed pump and its corresponding grease pump; reset as needed.
 - Reset at CP1, go upstairs and put the hand-off-auto switch back into the auto position.
 - Check the influent manhole (in grass area by influent pumps). If <5 steps are visible above the water line, you need to pinch down on the influent gate valves. Close them down far enough to maintain a 4MGD flow.

Note: Close the influent gates completely before starting.
Then open to maintain flow without causing a bypass.

2. OCL/Bisulfite feed – Check all the pumps for ON indication. Check PMP for mode of operation on both OCL and Bisulfite feed pumps. The OCL is normally in “flow pace with dosage and set point adjustment.” The Bisulfite mode is listed in the rounds sheet daily.
3. Air – Reset blowers. They need to be in the OFF position downstairs to reset on panel view. Blower #3 is not on the emergency power panel. It will not reset while the generator is running. If more than one blower attempts to run at the same time, turn only one blower to the on position and leave the others off. The problem is likely with the pressure sensor and can be dealt with later.

4. Check each MCC Room. Look for tripped breakers and over temps. Note the ones you reset.
5. Check the sludge sweeps. Make certain on line basins are running (primary clarifiers, gravity thickeners, secondary clarifiers and ash thickener).
6. Check the odor control equipment. Make sure scrubbers and chemical feed pumps are on line/running.
7. Check pump stations on PMP. Check for communication, power, levels and alarms. Reset as needed. Compare the pump station set points to the set point sheet in the control room operations handbook. Make changes as needed. If power has been lost at multiple stations or if power is on the generator at the main plant and a pump station is out, call a foreman. More operators will be needed.
8. Reset environmental control panels. Walk through plant. Check incinerator instrument air, W-2 and W-3 water pumps, RAS pumps (flow-% speed) and WAS. (Had it completed the days pumping? Restart the RAS / W-3 OCL pump if needed.
9. Check incinerator instrument air compressor. Reset as needed.
10. Check the CEM system for proper operation. It is on an uninterruptible power source and should be running.
11. On extended power outages, the computer hub by the secretary's desk will need to be plugged into the emergency power system.
12. If a bypass event occurred during the power outage or restart, follow the directions on form O025 Bypass Events.

Accident Prevention Plan Pump Station Pump Removal Standard Operating Plan

April 19, 1995

I. Background

Various methods for the removal of submersible pumps have been used in the past. The purpose of this policy is to establish standard operating procedures for the removal of these pumps. The grinder unit at PS#15 will be treated as a pump in regards to the steps taken as it is pulled from its wet well.

II. Discussion

All submersible pumps installed in wetwells are equipped with a lifting chain. These pumps are to be removed with the crane on truck 101 using the following procedures:

1. Pull as close as possible to the lift station wetwell. This will allow for a better angle on the hoist for pulling and lowering the pump.
2. Wear appropriate safety equipment such as hard hats and gloves.
3. Chock the truck wheels use outriggers every time the boom is used.
4. All hooks used for lifting MUST be equipped with safety latches.
5. Raise the boom and align for lift. Make any necessary adjustments (including moving of truck) before hooking up of pump. Pump down wet well. Follow lockout procedure for pump.
6. One should be able to pull the pump rotate it and set it down without lowering the boom under load. At pump stations 13 & 15, maintain max extension and max vertical position during the lift.
7. When pulling the solids filtrate pumps, the boom on 101 needs to be rotated to the rear of the truck before 101 is backed through the door.
8. Before starting insure that all power cables are clear of the boom's path (10' clearance needed). Use extreme caution at PS#11 power or phone lines are very close.

III. Pulling a Pump in a Wet Well

1. Attach the "snag line" chain to the double "D" shackle at the end of the boom. The snag line is not to be attached to the single "D" ring on the lower section of the boom arm.
2. Attach winch line hook to a shackle at the top of the lifting chain.
3. Lift the pump as far as practical in a single lift. If a single lift is not enough to get the pump out of the wetwell, the use of the snag line chain shall be employed.

4. After the initial lift with the hoist, attach the snag line hook to a shackle on the lifting chain. The snag line hook is not to be attached to the same shackle as the winch line hook.
5. If a shackle for this purpose is not present, install one before proceeding to remove the pump. If the work crew does not have a shackle for this purpose, lower the pump back into the wetwell. Return to the WWTP and get the shackles that are required.
6. Carefully lower the winch line until the pump is suspended on the snag line. Continue to lower the winch line hook until another shackle on the pump lifting chain can be grabbed. Again, the work cannot proceed unless this shackle is present. Do not attach the winch hook to the same shackle as the snag hook.
7. Repeat the procedure until the pump has been removed from the wetwell.
8. After the pump has been successfully removed from the wet well, place it on a level surface to perform the maintenance on the pump.
9. Make comments on the maintenance work order.

Minimum personnel required to pull pumps:

Although it is standard to assign two operators to pump pulling work orders, one operator may pull pumps at the following pump stations:

- P.S. #1
- P.S. #4
- P.S. #6
- P.S. #7
- P.S. #8
- P.S. #11
- P.S. #12
- P.S. #19
- P.S. #21
- Under Drain P.S.

Two operators are required to pull pumps at the following pump stations:

- P.S. #2
- P.S. #3
- P.S. #5
- P.S. #9
- P.S. #10
- P.S. #13
- P.S. #14
- P.S. #15 pumps and grinder unit
- P.S. #16
- P.S. #18
- P.S. #20
- Solids Filtrate P.S.

These pump stations may not need snag line, dependant on truck position:

- P.S. #1
- P.S. #5
- P.S. #7
- P.S. #8
- P.S. #14
- P.S. #16

These pump stations are not accessible by truck. Use the portable tripod to pull the pumps. If the operators are comfortable pulling these pumps by hand, it is an acceptable practice under this policy. When pulling by hand both operators should share the load.

- P.S. #9
- P.S. #10

A confined space entry will be required to pull pumps #3 and #4 on the dry well side of pump station #5.

IV. Replacing a Pump in a Wet Well

A. Procedure

1. Inspect shackle pin tightness and check the integrity of any chains, lifting hardware and cables before attempting to lower the pump into the wet well.
2. Carefully lift the pump and rotate it into position over the guide rails. The boom should be in the same position as it was when the pump was pulled. If not, readjust the boom before picking up the pump.
3. Check the power cord. If the pump had twisted when removed, the cord could be in the way.
4. Watch carefully as the pump travels down the guide rails or guide wires. If the pump hangs up on the guide rails, it could cause slack in the boom cable that might be dangerous if the pump were to break free. The pumps have a tendency to come loose from the guide cables. This can cause the pump to swing away from the flange before seating in place.
5. If the snag line was used when the pump was pulled, it will need to be employed when the pump is lowered.
6. The snag line should be attached at its last shackle point. Carefully lower the winch until the pump is suspended on the snag line. Disconnect the winch hook and reattach it to the next shackle up on the chain. Raise the winch until the weight of the pump is on the winch line. Disconnect the snag line hook and continue lowering the pump into place.
7. In some cases a second snag hook step may be needed to safely lower the pump into place.

8. Leave the hoist attached to the lifting chain until the pump has been test ran to check for flange blow-by.
9. Watch the boom cable to be certain that it spools on and off the drum properly.
10. When the job is completed; return the boom and outriggers to the store position. Stow the chocks and the hoist controller.

Failure to follow this procedure will result in disciplinary action.

Accident Prevention Plan Scaffolding Plan

April 1997

I. Purpose

The following is important safety information that should guide all Wastewater Treatment Plant personnel in the proper use of plant scaffolding. *Reference:* Washington Administrative Code 296 -874.

A. General Procedures:

The following steps establish the safety requirements for the construction, operation, maintenance and use of the scaffold.

1. All scaffolding must be erected to comply with Federal and State standards by competent person(s).
2. Guardrails and toeboards shall be installed on ALL open sides and ends of platforms greater than six (6) feet above the floor or ground.
3. Any scaffolding damaged or weakened shall be immediately tagged "**DO NOT USE**" with a RED tag, until repairs can be made or the bad section(s) can be replaced.
4. All planking shall be overlapped a minimum of twelve (12) inches, or secured from movement.
5. Scaffolding planks shall extend over their end supports no less than six (6) inches (wood planks) and not more than eighteen (18) inches.
6. An access ladder or an equivalent safe access shall be provided.

The immediate user of any scaffolding is responsible for the safe use, inspection before and after each use and proper storage of the scaffolding. The user must immediately report any defects etc. to a Plant Foreman or the Plant Manager.

B. Scaffolding Tagging Procedure:

To insure that ALL plant personnel are aware of scaffold condition, the following scaffolding tagging procedures will be followed for all scaffolds. This procedure will consist of three (3) tags. The tags will have all information needed to let the employee(s) know the condition of the scaffolding. The plant Operations Foreman or other competent person shall sign off on the tag at the proper line:

1. **RED tag (DO NOT USE):** placed on scaffold during erection, take down or if damaged in some fashion during use. This tag will let all personnel know scaffold is not safe to use and they should remain off.
2. **YELLOW tag (CAUTION):** placed on scaffold that can not be in 100% compliance with Federal and State specifications. The hazard will be communicated on the tag, i.e.; fall protection required, no toeboards, no guardrails etc. All or any precautions will be communicated as well.

3. **GREEN** tag (**SAFE**): placed on scaffolding that meets all Federal and State regulations. This tag lets personnel know that it is safe scaffolding and that no fall protection gear is required. Green tagged scaffolds will not be modified by anyone other than the Plant Foremen, Plant Manager or a designated competent person.
4. **NO** tag: if no tag appears anywhere on the scaffolding, follow **RED** tag procedure and **DO NOT USE**.

C. General Rules:

The following rules are always to be practiced:

1. All plant personnel will follow all Federal, State and plant policies and regulations related to scaffolding
2. Inspect all equipment before using. Never use any equipment that is damaged or deteriorated in any way.
3. Keep all equipment in good repair. Do not use rusty equipment, its strength is not known.
4. Inspect erected scaffolding regularly to be sure it has been maintained in a safe condition and that scaffolding connections have not loosened.

D. Scaffold Safety Rules:

1. Make sure surface on which the scaffold is to be placed is adequate to safely support the intended load.
2. Provide adequate sills for posts and use adjustable bases to level. Use adjustable swivel bases where surface or sill is sloping.
3. Plumb level and square at base level, then proceed with erecting, maintaining scaffold plumb and square with each stage as it is erected.
4. Fasten all wedges and other connections securely
5. Tying off scaffolding to structure is very important to stability and safety of scaffold. Make sure structure that the scaffold is being anchored to is capable of safely supporting all loads imposed by the scaffold.
6. Freestanding scaffolding should be tied and butted or otherwise stabilized as appropriate to pertaining conditions, recognizing that stability is essential to safety.
7. If tie or butt is removed for any reason, an alternate (substitute) tie, butt or some other method must be used to assure continued stability of the scaffold.
8. At all tie Install diagonal bracing as shown in Manufacturer's O&M instructions in both longitudinal and transverse directions of scaffold, and all open faces of free standing scaffold levels, install continuous horizontal, diagonal bracing for the full length of scaffold.
9. Install guardrails, midrails and toeboards at all openings, open sides and ends of every working platform. Make sure that guardrails, midrails and toeboards are in place whenever scaffold levels are planked. Guardrail posts must be secured to brackets or posts by pins or bolts.

10. All scaffolds must be equipped with suitable climbing ladders or step units to provide safe and proper access to working levels. Use caution when placing ladders to prevent scaffold tipping when climbed. If possible place ladder on inside of freestanding scaffold. **DO NOT CLIMB SUPPORTS.**
11. Do not use ladders or other devices to increase scaffold height.
12. Use extreme caution if erected around power lines.

II. Training

A. WAC 296-874-20072 and WAC 296-874-20074

Train employees who work on a scaffold.

You must:

Have a qualified person train each employee who works on a scaffold to:

Recognize the hazards associated with the type of scaffold they are using;

AND

Understand the procedures to control or minimize the hazards.

Include the following subjects in your training:

Hazards in the work area and how to deal with them, including:

Electrical hazards;

Fall hazards;

Falling object hazards;

How to erect, maintain, and disassemble the fall protection and falling object protection systems being used;

How to:

Use the scaffold;

Handle materials on the scaffold;

The load-carrying capacity and maximum intended load of the scaffold;

Any other requirements of this chapter that apply.

Train employees who erect, dismantle, operate or maintain scaffolds.

You must:

Have a competent person train each employee who erects, disassembles, moves, operates, repairs, maintains, or inspects scaffolds to recognize any hazards associated with the work.

Make sure the training includes at least the following subjects:

Hazards in the work area and how to deal with them;

The correct procedures for erecting, disassembling, moving, operating, repairing, inspecting, and maintaining the type of scaffold being used;

The design criteria, maximum intended load-carrying capacity and intended use of the scaffold;

Any other requirements of this chapter that apply.