STORMWATER POLLUTION PREVENTION PLAN
LISTER CHAIN & FORGE, INC.

prepared for:

Lister Chain & Forge, Inc.
3810 Loomis Trail Road
Blaine, Washington 98230

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Stormwater Pollution Prevention Plan (SWPPP)

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Site Log Book

Lister Chain & Forge
3810 Loomis Trail Road
Blaine, WA 98230

Permit# WAR008687

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LISTER CHAIN & FORGE INC.

Prepared for:

Lister Chain & Forge, Inc.
3810 Loomis Trail Road
Blaine, WA 98230

Prepared by:

Whatcom Environmental Services, Inc.
228 East Champion Street, Suite 101
Bellingham, WA 98225

January 20, 2020

Dan Heimbigner
Whatcom Environmental Services
Project Manager

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Whatcom Environmental Services
QA/QC Reviewer

AMENDMENTS AND REVISIONS LOG

REVISION DATE	DESCRIPTION	EDITOR
3/3/2015	In response to revisions to the Industrial Stormwater General Permit which became effective January 2, 2015: - References to the expired Permit in the SWPPP were updated. - The modified SWPPP Certification Form provided in the new Permit was inserted in Appendix I. - The DMR due dates were updated and all DMRs must now be submitted electronically (Section 9). - Changed non-compliance reporting requirement from 30 days to 5 days. Inserted regular business hours. Updated monitoring plan details (Section 8). Updated consistent attainment details (Section 9.6). Updated Site Map (ASTs were moved to the north side of production building).	Whatcom Environmental Services
10/6/16	Updated text section 2 and Figure 2 to include newly installed covered storage area (Quonset hut). New roof gutters are plumbed into the facility stormwater detention pond.	Whatcom Environmental Services
1/20/20	In response to revisions to the Industrial Stormwater General Permit which became effective January 1, 2020: - References to Permit section numbers were updated. - First fall sampling requirements were updated. - Updated language for BMPs: Good Housekeeping and Spill Prevention and Emergency Clean Up. - Updated laboratory quantitation level for Petroleum Hydrocarbons (Diesel Fraction)Updated Pollution	Whatcom Environmental Services

	Prevention Team (Section 4.1) - Updated Sampling plan details (Section 8). - Updated consistent attainment details (Section 9.6). - Updated lead benchmark.	

STORMWATER POLLUTION PREVENTION PLAN

Facility Name:	Lister Chain & Forge
Facility Location:	3810 Loomis Trail Road Blaine, Washington 98230
Regular Business Hours:	Mon – Fri 7:30 am – 4:00 pm
Facility Type:	Chain Manufacturing
Date of Initial Operation:	1989
Owner Name and Address:	Washington Chain Inc. 2901 Utah Avenue South Seattle, Washington 98124-3645
Plant Manager:	Travis Pederson
Pollution Prevention Team:	Plant Engineer Day shift, Lead Hand Maintenance Helper Swing Shift, Lead Hand Swing Shift, Senior Team Leader

Oil Spill History: This facility has not experienced a reportable oil spill event since first occupancy in 1989.

Management Approval: Full approval for the execution of the Stormwater Pollution Prevention Plan (SWPPP) is extended by Lister Chain & Forge, including authority to commit the necessary resources toward spill prevention, training, and release countermeasures at this facility.

SWPPP certification: The Industrial Stormwater General Permit (ISGP) Condition S3.A.6 requires all SWPPPs to be certified using the form found in the ISGP Appendix 3. This includes revisions triggered by a Level 1, 2, or 3 corrective action. Certification forms can be found in Appendix I of this SWPPP.

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1.0 INTRODUCTION

Whatcom Environmental Services has prepared this Stormwater Pollution Prevention Plan (SWPPP) for the Lister Chain & Forge facility in Blaine, Washington. This SWPPP has been prepared to fulfill the requirements set forth in the Washington Department of Ecology (Ecology) Industrial Stormwater General Permit (ISGP). A copy of the ISGP is included in Appendix A. The SWPPP has been prepared to meet the following objectives:

1) Implement and maintain stormwater best management practices (BMPs)
2) Prevent violations of surface water quality, groundwater quality, and sediment management standards
3) Prevent adverse impacts to receiving waters
4) Eliminate unpermitted stormwater discharges

The basic requirements of this SWPPP are as follows: (see Appendix B for a detailed Overall Schedule of regular tasks).

1) Conduct quarterly sampling at Discharge Point #003. Submit Discharge Monitoring Reports and Annual Reports to Ecology. Take Level One, Two, or Three corrective actions when required (see Section 8.0 Monitoring Plan).
2) Conduct monthly visual inspections of the facility and BMPs to ensure that they are in place and functioning properly (see Appendix F for Site Inspection Checklist)
3) Implement BMPs necessary to improve the water quality that is being discharged from site
4) Provide initial and annual training to all personnel according to their particular responsibilities in relation to the SWPPP (see Section 4.7 Training)

The SWPPP must be updated when there are any changes in materials handled, process flow, industrial activities, BMPs, etc.

1.1 GENERAL SITE DESCRIPTION

The Lister Chain & Forge facility is located at 3810 Loomis Trail Road, Blaine, Washington. The facility is located west of Interstate 5 and approximately 3 miles southeast of Blaine. Land use in and around the facility ranges from undeveloped to light industrial. The facility is accessed by Loomis Trail Road on the south and Portal Way on the southwest. Surface topography at the site slopes from the north and east to the south and west. Slopes are relatively flat, ranging from 0.3 percent to 1.0 percent, and elevations vary from 38 to 44 feet. Site soil composition consists of Edmonds-Woodlyn and Tromp loams (USDA, 1992).

Runoff from the site flows into a detention pond located in the southwestern corner of the site. Stormwater from this pond discharges to a roadside ditch located on the western boundary of the site along Portal Way. The ditch conveys stormwater to unnamed tributaries and then into California Creek. The creek discharges into Drayton Harbor, approximately two miles west-northwest of the site, which, in turn, discharges into Semiahmoo Bay (Figure 1 Location Map).

1.2 SPILL HISTORY

No reportable spills have occurred at the Lister Chain & Forge facility since it began operating at the subject site in 1989. However, site soils were impacted by hydraulic oils from the chain test pit. The soil was removed from the site in 2003 and 2004. The site was cleaned up to Model Toxics Control Act (MTCA) standards.

2.0 FACILITY LAYOUT AND DESCRIPTION

2.1 GENERAL SITE

The Lister Chain & Forge facility consists of a two-story structure (the Production Building that also houses offices), paved and unpaved storage, roadways and parking, a fire flow storage pond, a stormwater detention pond, and landscaped and naturally vegetated areas. The site totals 3.38 acres with 1.78 acres classified as impervious (paved, roofed, and compacted gravel), 1.07 acres as pervious (undeveloped), 0.18 acres as the stormwater detention pond (discharges to an existing ditch on Portal Way), and 0.35 acres as the fire flow pond (no discharge). A site map is provided as Figure 2.

2.2 PRODUCTION AND OFFICE BUILDING

The Production Building is an approximately 15,000-square-foot structure located on the east side of the property. The Production Building contains offices, a steel bar cutting area, three chain manufacturing lines, a heat treatment process line, and various material storage areas. The concrete floor is at the approximate elevation of the surrounding ground to accommodate movement of materials and product in and out of the building, which is primarily done by forklifts. The floor slab in the building is essentially continuous except for long trench-like sumps that carry power and cooling water to the chain manufacturing equipment. These sumps catch any water or hydraulic oil that might escape from the equipment, and the sumps are not connected to any sanitary or storm drains.

The chain manufacturing and cutting equipment are electrically powered and use a combination of electrical heating, welding, and hydraulic systems to prepare, form, and finish the chain. The heat treatment process line is powered by natural gas. The two cooling systems associated with the chain manufacturing and heat treatment lines are closed-loop.

The office area is served by a septic tank system located in the central western portion of the site between two storage areas. No connections exist between the

manufacturing area and the septic system. A fire flow protection pond is located in the northeast corner of the site.

2.3 PAVED TRAFFIC, STORAGE, TESTING AND LOADING/UNLOADING AREAS

The Production Building is surrounded on the west, north, and east sides by paved areas used for temporary storage of steel bar and chain. A chain test pit used for certifying the chain strength is located in the paved area east of the building. Two dip tanks with secondary containment and drip pans for applying coatings to the chain are located under cover in the paved area west of the building. An above-ground storage tank (AST) with secondary containment for water contaminated with hydraulic oil is located adjacent to the outside west wall of the building. Heat exchangers used for cooling the manufacturing and heat treatment lines are located on the north side of the building.

The chain test pit is a long, below-grade structure used to test the strength of the chain. It has concrete walls and bottom and is not connected to the storm drainage system. The testing is done by a hydraulically-powered system. In the summer of 2009 a roof was constructed over the test pit to prevent stormwater from accumulating in the pit. A minimal amount of stormwater occasionally accumulates in the test pit. If the stormwater is reasonably clean it is pumped out to the east with a temporary sump pump and allowed to infiltrate into unpaved and natural areas along the eastern property line.

The paved area immediately west of the building is underlain by shallow ground water collection trenches and piping. The groundwater collection piping is connected to the underground storm drainage system. This shallow groundwater drain system lowers the seasonally high groundwater table to maintain adequate strength of the overlying pavement and soils from the high wheel loads that are experienced when moving the steel bar and manufactured chain. The underground storm drainage system then drains to the detention pond.

A Quonset hut used for covered storage is located on the west side of the site. The roof is made of galvanized metal. Roof gutters and drains feed into the facility stormwater detention pond.

2.4 PAVED PARKING AND DRIVEWAYS

Paved parking is located approximately 150 feet to the west of the Production Building. Paved driveways allow entrance to the site at three locations: two from Loomis Trail Road and one from Portal Way.

2.5 UNPAVED STORAGE AREAS

An unpaved (gravel and dirt) storage area for chain and steel bar is located in the central portion of the site approximately 200 feet northwest of the Production Building.

2.6 FIRE FLOW POND

The Fire Flow Pond is located at the northeast corner of the property. It is used for emergency fire flow protection and the water stored in the pond comes from a combination of precipitation falling directly on the pond and inner banks in addition to the groundwater table.

2.7 STORMWATER DETENTION POND

The Stormwater Detention Pond is located in the southwest corner of the property. The pond serves as a structural source control accepting all stormwater from the site. This pond is constructed of two detention cells that function as a treatment BMP that filters out impurities using vegetation (Appendix C).

2.8 STORMWATER SYSTEM

The site stormwater system consists of rain drains, catch basins, sheet flow areas, underground conveyance piping, a detention pond, and drainage ditches. Two unlined drainage ditches are located to the south and southwest of the facility. These ditches are part of the stormwater system of Whatcom County. Only the ditch to the southwest receives stormwater runoff from the Lister Chain & Forge facility by way of the stormwater detention pond outfall. As indicated earlier, this ditch carries runoff west from the site through culverts that cross under Portal Way.

Catch basins used to collect on-site stormwater are shown in Figure 2. The catch basins capture runoff from the northern two-thirds of the building roof, the northern half of the paved area to the east of the building and test pit, all of the paved roadway and loading/storage area to the north of the building and all of the paved area to the immediate west of the building. These catch basins and drain lines discharge to the stormwater detention pond for treatment prior to being released offsite by way of the stormwater detention pond outfall.

Stormwater runoff also exits the site at the two southeastern driveways. Stormwater from the roof drains at the southern corners of the Production Building (galvanized roof) is directed to the grassy area on the south end of the building for infiltration. Roof drains from the chain pull-test area direct water east to the vegetated area for infiltration. One catch basin near the southeast corner of the Production building directs water east to the gravel area for infiltration.

In the event of stormwater precipitation or a large liquid spill, the most probable pathway for stormwater runoff to reach state waters would be through the storm drain discharges from the stormwater detention pond.

3.0 INDUSTRIAL ACTIVITIES AND MATERIALS INVENTORY

Current chain manufacturing operations at the Lister Chain & Forge facility include steel bar cutting, three chain manufacturing lines, a heat treatment process line, a chain testing pit, and chain coating application.

The steel bar cutting is done with a recycled water-soluble cutting fluid and all waste steel is recycled. The cutting fluids are drained from the steel cutting in a closed loop recycling system. The steel cuttings are stored in a covered container and then removed by a subcontractor for off-site recycling. A maximum of 60 gallons of cutting fluid are present and used at the facility on an annual basis. A copy of the cutting fluid MSDS is included in Appendix D.

The three chain manufacturing lines use hydraulic systems to bend steel bar. The Test Pit area (east of the building) uses a hydraulic system to test chain strength. These four hydraulic systems contain a total of 1,657 gallons of hydraulic oil. In addition, a maximum of four drums (220 gallons) of hydraulic oil are stored for use in the building. The forklifts have hydraulic systems containing a total of 75 gallons. A continuous (covered) steel oil/water separator above-ground storage tank (AST) located on the outside of the west wall of the building may contain a maximum of up to 400 gallons of used hydraulic oil. Therefore, a maximum of 2,352 gallons of hydraulic oil may be present at the site. The 195-gallon hydraulic oil tank in the test pit is located in a room. The outdoor tank is a continuous steel tank and is contained within a sufficiently large secondary containment structure.

The 400 gallon oil/water AST has a concrete wall secondary containment volume of 1,300 gallons. When the used hydraulic oil tank is full, an outside contractor pumps out the tank and arranges for off-site recycling, treatment, and/or disposal. Non-impacted precipitation that accumulates in the test pit sump is pumped out to the surface and vegetated areas to the east of the test pit. If water in the test pit shows sheen or any other sign of impact, then the water is transferred to the used oil storage tank (described below).

A 2,800-gallon continuous (covered) steel used oil storage tank is located outside the west wall of the building and inside its own secondary containment structure. The

used oil storage tank secondary containment has a 2,400-gallon capacity. The used oil storage tank is used to store wash water, oily water, and wastewater. The building does not contain any sanitary sewer connections, so the oil/water AST is used to stage wastewater before an outside contractor pumps out the tank and arranges for off-site recycling, treatment, and/or disposal.

The cooling systems and heat treatment process lines are closed-loop (non-contact) systems that have make-up and storage tanks that are not connected to the stormwater or sanitary system.

The facility coats the anchors and chain products with Asphalt Varnish (MSDS in Appendix D). The facility averages 350 gallons of Asphalt Varnish per year. The facility annually purchases 55-110 gallons of Toluol and 40 gallons of Xylol.

4.0 OPERATIONAL BMPs

4.1 POLLUTION PREVENTION TEAM

The Pollution Prevention Team is composed of individuals within the organization whose responsibilities include: SWPPP development, implementation, maintenance, and modification.

Leader: **Travis Pederson** Plant Manager 360-332-4323

Responsibilities: Develop, maintain, update, and modify the Stormwater Pollution Prevention Plan (SWPPP) as needed. Coordinate development of the SWPPP inspection schedules and coordinate with employees on implementation of best management practices (BMPs) for the Facility. Coordinate training requirements. Suggest or recommend revisions of this SWPPP as required. Compile and maintain inspection and sampling records. Coordinate employee education program for employees to inform personnel at all levels of responsibility about the components and goals of the SWPPP. Evaluate progress and effectiveness of SWPPP implementation, and update or correct this SWPPP as appropriate. Implement BMPs for the Facility. Maintain stormwater drainage facilities and treatment basins on a regular basis. Coordinate inspection of vehicles and equipment as required. Conduct monthly operation inspections. Assist in compiling and maintaining inspection and sampling records. Evaluate progress and effectiveness of SWPPP implementation.

Team Members

All team members responsibilities are to assist the Pollution Prevention Team Leader in conducting pollution prevention activities. The team member roster includes:

- Plant Engineer
- Day shift, Lead Hand
- Maintenance Helper
- Swing Shift, Lead Hand
- Swing Shift, Senior Team Leader

4.2 GOOD HOUSEKEEPING

Standard operating procedures consist of good housekeeping practices designed to maintain a clean and orderly site, which helps to reduce the potential for stormwater contamination. These BMPs include:

- Conduct safety, environmental, and housekeeping site walks by designated personnel to identify and resolve potential problems on a regular basis
- Store materials in designated areas in a neat and orderly fashion
- Vacuum paved surfaces with a vacuum sweeper at least once per quarter
- Maintain graveled areas with fresh gravel as needed
- Promptly clean up spills and leaks. Wipe up spills with rags and other absorbent materials immediately. Do not hose down the area to a storm drain or receiving water or conveyance ditch to receiving water.
- Do not flush paved areas with water that will drain to catch basins. Use dry methods for cleaning and maintenance activities when practicable.
- Use drip pans in coating areas. Empty the drip pans frequently so as not to create a situation of potential stormwater pollution.
- Properly dispose of all waste and prevent all uncontrolled release to the air, ground, or water
- Store toxic materials under cover (tarp, etc.) during precipitation events and when not in use to prevent contact with stormwater
- Do not conduct coating operations during windy conditions which render containment ineffective
- Train employees in the careful application of coatings to prevent stormwater pollution
- Keep all dumpsters under cover or fit with a storm proof lid that must remain closed when not in use
- Identify and control all on-site sources of dust to minimize stormwater contamination from the deposition of dust on areas exposed to precipitation
- Inspect and maintain cartridge filter dust collection system monthly to prevent the escape of dust from the system. Immediately remove any accumulated dust exterior of the system.
- Affix “Dump No Waste” tags to stormwater catch basins and drains

4.3 PREVENTATIVE MAINTENANCE OF SYSTEMS

A preventive maintenance program is a means of preventing potential release situations before they occur. The preventive maintenance program involves timely equipment repair and replacement of worn parts before a system fails. The preventive maintenance program as a part of the BMP program emphasizes the components of the facility most likely to experience a release. These BMPs include:

- Label all containers and tanks clearly to prevent the mixing of wastes. Mixed wastes are considered dangerous wastes. Containers of new materials should also be labeled clearly.
- Periodic inspections of tanks, fittings, surfaces, and stormwater system equipment
- Periodic testing of equipment
- Appropriate adjustment, repair, or replacement of parts
- Conduct cleaning, steam cleaning, or pressure washing of equipment, oily parts, or containers inside a building and/or on an impervious contained area
- Do not pave over contaminated soil unless it has been determined that ground water has not been and will not be contaminated by the soil.
- Use drip pans to collect leaks from any leaky equipment stored outside. Empty drip pans immediately and promptly remedy outdoor leaks
- Drain oil from fuel filters before disposal. Discard empty oil and fuel filters and other oily solid waste into appropriately closed and properly labeled containers and in compliance with the Uniform Fire Code. Oily rags are sent out for laundering.
- For the storage of liquids, use containers that are compatible with the stored fluid that are durable and rain/water tight
- Where exposed to stormwater, use containers, covers, piping, tubing, pumps, fittings, and valves that are appropriate for their intended use and for the contained material
- Promptly repair any deterioration threatening the structural integrity of the facilities. These include replacement of clean-out gates, catch basin lids, and rock in emergency spillways.
- Regularly remove debris and sludge from BMPs used for peak-rate control, treatment, etc. and dispose of properly

- Clean catch basins when the depth of debris reaches 60% of the sump depth. Keep the debris surface at least 6 inches below the outlet pipe. Use filter fabric where appropriate, to catch sediment.
- Inspect all equipment and vehicles for leaking fluids such as oil, antifreeze, etc. Take leaking equipment and vehicles out of service or prevent leaks from spilling on the ground until repaired.
- Immediately clean up spills and leaks (e.g., using absorbents, vacuuming, etc.) to prevent the discharge of pollutants

4.4 SPILL PREVENTION, REPORTING, AND EMERGENCY CLEANUP

Facility locations where spills may occur include the area around oil/water and water/oil ASTs, the test pit, the loading areas near the building, and the coating area. A site oil Spill Prevention Control and Countermeasure (SPCC) Plan has been prepared specifically to address oil spills, storage, and handling practices at the site. The separate SPCC Plan shall be used as a primary guide for spill prevention, reporting, and cleanup. Since spills and leaks are the largest potential source of stormwater pollutants at the facility, BMPs have been established to reduce these accidental releases. These BMPs include:

- Maintain effective housekeeping practices
- Perform regular visual inspections to identify potential spill situations
- Store all hazardous substances, petroleum/oil liquids, and other chemical solid or liquid materials that have the potential to contaminate stormwater on an impervious surface that is surrounded with a containment berm or dike that is capable of containing 10% of the total enclosed tank volume or 110% of the volume contained in largest tank, whichever is greater, or use UL Approved double-walled tanks.
- Prevent precipitation from accumulating in containment areas. For instances where containment areas do collect stormwater Emerald Services is called upon to vacuum out the water.
- Perform required plant preventive maintenance operations
- Use proper filling procedures for tanks and other equipment
- Block, plug, or cover storm drains that receive runoff from fueling areas, during fueling

- Do not lock shut-off fueling nozzles in the open position. Do not "top-off" tanks being refueled.
- Use drip pans or equivalent containment measures during all petroleum transfer operations
- Use drip pans and absorbents under or around leaky vehicles and equipment or store indoors where feasible. Drain fluids from equipment and vehicles prior to on-site storage or disposal.
- Use proper material transfer procedures including secondary containment when practical
- Locate materials, equipment, and activities so that leaks are contained in existing containment and diversion systems (confine the storage of leaky or leak-prone vehicles and equipment awaiting maintenance to protected areas)
- Provide training for proper spill prevention and response techniques
- Stop, contain, and clean up all spills immediately upon discovery. Do not flush absorbent materials or other spill cleanup materials to a storm drain or to surface water. Collect the contaminated absorbent material as a solid waste and place in appropriate disposal containers that are labeled as such.
- Maintain a Spill Log that includes the following information for chemical and petroleum spills: date, time, amount, location, and reason for spill; date/time clean-up completed; notifications made and staff involved

If any spill has reached or may reach a sanitary or storm sewer, groundwater, or surface water, provide notification to Ecology and the local sewer authority immediately (no later than one hour from discovery). Take reasonable steps to minimize any adverse impacts to water of the state and to correct the problem. Follow up with written documentation covering the event within 5 days unless otherwise directed by Ecology.

Ecology's Northwest Regional Office: (425) 649-7000

A spill kit, is located at the west side of building. Oil absorbent materials are located in the northeast interior of building. Spill kits must be within 25 feet of all stationary fueling stations, fuel transfer stations, and mobile fueling units.

- All Spill Kits must include:
    - Oil absorbents capable of absorbing 15 gallons of fuel. Facilities with a SPCC plan must have enough oil absorbents capable of absorbing the

minimum anticipated spill amount or potential discharge volume identified in that plan if more than 15 gallons.

- A storm drain plug or cover kit
- A non-water containment boom, a minimum of 10 feet in length with a 12-gallon absorbent capacity
- A non-metallic shovel
- Two five-gallon buckets with lids

4.5 REPORTING AND RECORDKEEPING

Record keeping and reporting activities will be implemented to address spills, monitoring, and BMP inspections. Incidents such as spills or other discharges, along with information describing the quality and quantity of stormwater discharges, will be included in the records. Inspections will be documented and recorded. Records will be kept on site for a minimum of five years. Further detailed reporting and record keeping procedures are described in Section 8.0.

Management shall track and document activities pertinent to the SWPPP. This documentation is kept on-site in the office of the Plant Engineer. Examples of this documentation include, but are not limited to: Permit coverage letters; field notes; laboratory reports; proposed amendments or revisions to the SWPPP; Level One, Two and Three corrective action documents (additional BMPs); DMRs; Annual Reports; design or operational changes within the facility; training logs; Site Inspection Reports; and documentation of any and all significant spills, should they occur.

This SWPPP must be amended whenever there is a change in facility design, construction, operation, or maintenance that materially affects the potential of the facility for the discharge of oil to the environment. The SWPPP also must be re-signed and re-certified in accordance with Condition S3.A.5 of the Permit by using the SWPPP Certification Form found in Appendix I. Level 1, 2, and 3 responses also require a re-certification of the SWPPP using the SWPPP Certification Form.

4.6 MONTHLY INSPECTIONS

Visual inspections will be performed **monthly** to identify conditions that may give rise to contamination of stormwater runoff with pollutants from the facility.

Inspections will be completed by a member of the Pollution Prevention Team. All visual inspections must be signed by the responsible company official, including a certification of compliance using the language of S7.C.1.c. The following areas should be inspected monthly:

- Storage area for vehicles and equipment awaiting maintenance
- Vehicle and equipment maintenance areas (both indoors and outdoors)
- Outside storage areas
- Vehicle and equipment cleaning areas, loading and unloading areas
- Containment devices
- Catch basins
- Stormwater detention pond

Site Inspection Checklists can be found in Appendix F. Completed inspection forms must be signed by the Responsible Official and kept with stormwater documentation files in the Plant Engineer's Office.

Each inspection shall include:

1. Observations made at stormwater sampling locations and areas where stormwater associated with industrial activity is discharged off-site; or discharged to waters of the state, or to a storm sewer system that drains to waters of the state
2. Observations for the presence of floating materials, visible oil sheen, discoloration, turbidity, odor, etc. in the stormwater discharge
3. Observations for the presence of illicit discharges such as domestic wastewater, noncontact cooling water, or process wastewater (including leachate)
    a. If an illicit discharge is discovered, Lister Chain and Forge shall notify Ecology within seven days.
    b. Lister Chain and Forge shall eliminate the illicit discharge within 30 days.
4. A verification that the descriptions of potential pollutant sources required under this permit are accurate
5. A verification that the site map in the SWPPP reflects current conditions

6. An assessment of all BMPs that have been implemented, noting all of the following:
    a. Effectiveness of the BMPs inspected
    b. Locations of BMPs that need maintenance
    c. Reason maintenance is needed and a schedule for maintenance
    d. Locations where additional or different BMPs are needed and the rationale for the additional or different BMPs

The documentation must include all the items listed in Condition S7.C of the Permit.

Follow-up procedures shall be used to ensure that appropriate actions are taken in response to the inspections. Records of inspections shall be maintained.

Oil spills of any size shall be reported to the plant manager as soon as they are observed and an analysis of each such spill shall be made to ascertain any corrective action that should be implemented and to make plans to prevent reoccurrence of each type of spill that may occur.

4.7 EMPLOYEE TRAINING

Employees who have duties in areas of industrial activities subject to the Permit will be trained at least annually and during his or her initial orientation. The content of the training will include:

- An overview of what is contained in the SWPPP
- How employees make a difference in complying with the SWPPP and preventing contamination of stormwater
- Spill response procedures, good housekeeping, maintenance requirements, and material management practices

The training will be conducted by qualified personnel. Employee spill training is also detailed in the site SPCC plan. All training records are kept in the Plant Engineer's office with other stormwater documentation. A Training Sign-In sheet can be found in Appendix G.

4.8 ILLICIT DISCHARGES

Illicit discharges include, but are not limited to, the discharge of process wastewater, domestic wastewater, and non-contact cooling water to stormwater sewers, surface waters and ground waters of the state. If non-stormwater discharge is discovered, Ecology must be notified. Any illicit discharges will be eliminated within 30 days. Observation for illicit discharges should a part of the monthly visual inspection (Appendix F). The inspection form must be signed by the Responsible Official and placed with other stormwater documentation in the Plant Engineer's office.

Water from washing vehicles or equipment, steam cleaning, and/or pressure washing is considered process wastewater. Lister Chain & Forge must not allow this process waste water to comingle with stormwater or enter storm drains and must collect in a tank of or off-site disposal. If Lister Chain & Forge wishes to discharge it to a sanitary sewer, written approval from the local sewage authority must be obtained prior to discharging to the sanitary sewer.

5.0 STRUCTURAL SOURCE CONTROL BMPs

Lister Chain & Forge will minimize the exposure of manufacturing, processing and material storage areas (including loading and unloading, storage, disposal, cleaning, maintenance, and fueling operations) to rain, snow, snowmelt, and runoff by either locating these industrial materials and activities inside or protecting them with storm resistant coverings.

- Use grading, berming, or curbing to prevent runoff of contaminated flows and divert run-on away from these areas
- Perform all cleaning operations indoors, under cover, or in bermed areas that prevent stormwater runoff and run-on and that capture any overspray
- Ensure that all washwater drains to a collection system that directs the washwater to further treatment or storage and not to the stormwater drainage system

5.1 NON-STORMWATER CONNECTIONS TO STORM DRAINS

The facility shall ensure that it does not generate and discharge any non-stormwater into surface waters unless authorized by a NPDES permit or identified in an application or request for authorization submitted as part of a NPDES permit.

5.2 SOIL EROSION/SEDIMENT CONTROL

Sediment and erosion controls limit the volume of sediment being transported off-site. The Lister Chain & Forge site is predominately occupied by structures or pavement. Minor amounts of vegetated areas also exist on-site. Off-site movement of any sediment is therefore controlled. Any observed off-site sediment transport will be noted during periodic inspections and remedied promptly. See Section 4.2 for Operational BMPs related to Erosion and Sediment Control.

5.3 SPILLS OF OIL AND HAZARDOUS SUBSTANCES

Structural source control BMPs designed to contain spills of oils and hazardous substances include secondary containment structures around the outside ASTs.

5.4 COATING OF ANCHOR CHAINS/OUTSIDE MANUFACTURING ACTIVITIES

A roof was constructed over the chain coating operations in 2009, which greatly reduced the potential for stormwater exposure. Drop cloths will be used when needed.

The paint tanks have secondary containment.

5.5 LIQUID STORAGE IN ASTS

The two liquid storage ASTs, located north of the Production Building, have adequate secondary containment. The tanks are also completely enclosed to prevent stormwater exposure. One enclosed steel hydraulic oil tank is located in the test pit, and the test pit provides more than enough volume for complete secondary containment.

5.6 OUTSIDE STORAGE AND TRANSFER OF MATERIALS AND PRODUCTS

Steel bar and chain are stored outside in the gravel areas near the parking areas. Liquids stored outside are only stored in continuous (covered) tanks with secondary containment. The materials are not expected to contribute to stormwater exposures exceeding applicable benchmarks, but if benchmarks are exceeded, additional BMPs would be implemented to address storage of outdoor materials.

5.7 STORMWATER DETENTION POND

To address the stormwater requirements imposed by Whatcom County and to handle increased stormwater discharges from future increases in impermeable areas at the facility, a Stormwater Detention Pond was installed in 2006. This pond serves as a Structural Source Control BMP by combining both outfalls and also functions as a Treatment BMP.

Maintenance of the Stormwater Detention Pond will be conducted according to the maintenance standards listed in the Stormwater Management Manual of Western Washington (Appendix H).

5.8 VEHICLE AND EQUIPMENT MAINTENANCE

All vehicle service is done by an outside contractor that comes on-site to perform maintenance.

The following BMPs should be followed by all personnel performing maintenance:

- Use drip pans or containers under parts or vehicles that drip or that are likely to drip liquids, such as during dismantling of liquid containing parts or removal or transfer of liquids
- Empty oil and fuel filters before disposal. Provide for proper disposal of waste oil and fuel.
- Do not pour/convey washwater, liquid waste, or other pollutant into storm drains or to surface water
- All maintenance should be performed indoors. If maintenance must be performed outdoors use all appropriate spill protection measures and equipment.

6.0 TREATMENT BMPs

Additional treatment BMPs may need to be implemented if sampling results indicate elevated benchmark values. Currently, the Stormwater Detention Pond and oil/water separator serve as Treatment BMPs at the facility.

7.0 STORMWATER PEAK RUNOFF RATE AND VOLUME CONTROL BMPs

Flow-control BMPs are required for new development and redevelopment. The existing stormwater system with catch basins, rain drains, conveyance piping, stormwater detention pond, and vegetated drainage ditches provide satisfactory levels of stormwater runoff control.

8.0 SAMPLING PLAN

The following sampling plan has been specifically designed for the Lister Chain & Forage facility located at 3810 Loomis Trail Rd, Blaine, Washington.

8.1 DISCHARGE LOCATIONS

The discharge location was selected because it conveys stormwater from areas of the site that include parking lots, service and storage yards, loading areas, driveways, and building roof drains. Samples collected at this sample point represent the runoff from the site just prior to mixing with off-site stormwater.

8.2 SAMPLE LOCATIONS

The following table includes all sampling locations at the facility. Sampling locations are also shown on Figure 2.

Discharge ID	Common description	Latitude (optional)	Longitude (optional)	Discharge Type	Comments
Outfall 003	Detention Pond discharge	48.950139°	-122.689581°	Surface Water	Flows towards Portal Way ditch

8.3 PERSONNEL RESPONSIBLE FOR SAMPLING

Stormwater samples will be collected by the Plant Manager (currently Travis Pederson) or his delegated personnel.

8.4 PARAMETERS FOR ANALYSIS

Stormwater shall be sampled for the following parameters (additional details are provided in Table 2):

- turbidity
- total zinc
- total copper
- total lead
- Diesel-range hydrocarbons
- Visible oil sheen

8.5 SAMPLING REGULATIONS

The Permittee is not required to sample outside of regular business hours or during unsafe conditions. If unable to sample during a particular monitoring quarter, a Discharge Monitoring Report (DMR) will be submitted to Ecology with an explanation.

8.6 PROCEDURES FOR SAMPLE COLLECTION AND HANDLING

a. Sampling Schedule

- One sample must be collected from *each sample location* during *each quarter.*
- Samples shall be collected within a 12 hour window starting when stormwater begins to discharge from the facility due to a storm event. Any storm event during the quarter which causes discharge is acceptable (see 4th quarter exception below). If sample is not collected within the 12 hour window, a note shall be included in the field notebook to describe why.
- A stormwater sample must be collected from the first storm event on or after September 1st that results in stormwater discharge from the facility. Additional samples may be collected during the 3rd quarter. All other quarterly samples (1st, 2nd, and 4th) may be collected from any storm event during the quarter.

b. Sample Bottles

- All samples will be collected in sample bottles provided by the laboratory. Required sample bottles for each location include:

i. One 1-liter plastic bottle (for copper, zinc, and turbidity analyses)

ii. One 1-liter amber glass bottle preserved with hydrochloric acid (for total petroleum hydrocarbons)

iii. One 100 mL plastic bottle (for fecal coliform analyses)

c. Sample Bottle Labels

- All bottles will be labeled with: Discharge ID, site name, sampler's name, and collection time/date. Write this information in the field notebook as well.

d. Sample Handling

- All samples will be immediately stored in a cooler with ice and transported to the analytical laboratory (Edge Analytical, 805 W Orchard Dr #4, Bellingham, WA) within applicable hold times. The lab is open Monday-Friday 8:30-5:30.

e. Measuring pH

- The pH will be measured at each discharge point using pH paper or meter and recorded in the field notebook whenever a sample is collected.

f. Visual Oil Sheen Check

- The presence of a sheen on discharging water shall be evaluated based upon visual observation and recorded in the field notebook whenever a sample is collected.

8.7 PROCEDURES FOR SENDING SAMPLES TO THE LABORATORY

1) Ensure that labels on containers have been filled out with the relevant information
2) Fill out chain of custody provided by the Laboratory
3) Make a copy of Chain of Custody and place in Laboratory file folder
4) Place sample containers in a cooler with ice or a refrigerator
5) Deliver them to Edge Analytical, 805 W Orchard Dr #4, Bellingham, WA. Ensure that the Chain of Custody accompanies the samples to the Laboratory
6) Laboratory reports shall be retained onsite for Ecology review.

9.0 REPORTING AND RECORDKEEPING

This section describes the reporting requirements for information to be submitted to Ecology. In addition see Permit Condition S9.D for a list of relevant documents required to be kept onsite for a minimum of 5 years.

9.1 PROCEDURE FOR SUBMITTING DMRs TO ECOLOGY

The Permittee shall submit sampling data obtained during each reporting period on a Discharge Monitoring Report (DMR) form provided, or otherwise approved, by Ecology within 45 days of the end of each reporting period as outlined below.

Stormwater Sample Reporting Dates

Reporting Period	Months	DMR Due Date
1st	January-March	May 15
2nd	April-June	August 15
3rd	July-Sept	November 15
4th	October-December	February 15

DMRs shall be submitted using Ecology's *Water Quality Permitting Portal – DMR* application. The application is accessed through your Secure Access Washington online account. A DMR must be submitted each reporting period, whether or not the facility has discharged stormwater from the site.

If discharge(s) occurred during normal working hours, and during safe conditions; but no sample was collected during the entire quarter, the Permittee shall submit a DMR form indicating "no sample obtained". If no discharge(s) occurred during the entire quarter or the discharges during the quarter occurred outside normal working hours or during unsafe conditions, the Permittee shall submit a DMR indicating "no discharge".

If a Permittee has suspended sampling for a parameter due to consistent attainment, the Permittee shall continue submitting DMRs and indicate that it has achieved Consistent Attainment for that parameter(s).

Make a copy of the DMR and file with stormwater documentation in the Plant Engineer's office.

9.2 LEVEL ONE RESPONSE – OPERATIONAL SOURCE CONTROL BMPs

If any benchmark value in Table 2 is exceeded, Lister Chain & Forge must complete a Level 1 Corrective Action for each parameter in accordance with S8.B of the ISGP. The steps described in Condition S8.B of the Permit must be completed within 14 days of receipt of sampling results that indicate a benchmark exceedance, or, for parameters other than pH and visible oil sheen, the end of the quarter, whichever is later.

A SWPPP Certification Form (Appendix I) must be signed and certified by Lister Chain & Forge and attached to the SWPPP in accordance with Permit Condition S3.A.5.

Level 1 Deadline: the Permittee shall sign/certify and fully implement the revised SWPPP as soon as possible, but no later than the DMR due date for the quarter the benchmark was exceeded.

9.3 LEVEL TWO RESPONSE – STRUCTURAL SOURCE CONTROL BMPs

If any benchmark value is exceeded (for a single parameter) for any two quarters during a calendar year, Lister Chain & Forge must complete a Level 1 Corrective Action *and* a Level 2 Corrective Action in accordance with Condition S8.C.

A SWPPP Certification Form (Appendix I) must be signed and certified by Lister Chain & Forge and attached to the SWPPP in accordance with Permit Condition S3.A.5. For the year following the calendar year the Permittee triggered a Level 2 corrective action, benchmark exceedances (for the same parameter) do not count towards additional Level 2 or 3 Corrective Actions.

Level 2 Deadline: the Permittee shall sign/certify and fully implement the revised SWPPP as soon as possible but no later than August 31 of the following year. Time extensions/waivers may be requested from Ecology by May 15 prior to the Level 2 deadline.

9.4 LEVEL THREE RESPONSE – TREATMENT BMPs

If any benchmark value is exceeded (for a single parameter) for any three quarters during a calendar year, Lister Chain & Forge must complete a Level 1 Corrective Action *and* a Level 3 Corrective Action in accordance with Condition S8.D. A Level 2 Corrective Action is not required.

A "Qualified Industrial Stormwater Professional" shall review the revised SWPPP, sign the SWPPP Certification Form, and certify that it is reasonably expected to meet the relevant benchmarks upon implementation. If site-specific design or sizing is required, the Permittee shall submit an engineering report to Ecology for review.

A SWPPP Certification Form (Appendix I) must be signed and certified by Lister Chain & Forge and attached to the SWPPP in accordance with Permit Condition S3.A.5.

Level 3 Deadline: the Permittee shall sign/certify and fully implement the revised SWPPP as soon as possible but no later than September 30 of the following year. The engineering report shall be submitted to Ecology by May 15 prior to the Level 3 deadline. Time extensions/waivers may be requested from Ecology by May 15 prior to the Level 3 deadline.

9.5 ANNUAL REPORTS TO ECOLOGY

Annual Reports must be submitted to the Department of Ecology using the *Water Quality Permitting Portal – Permit Submittals* application no later than May 15 of each year using a form provided by or otherwise approved by Ecology

The annual report shall include corrective action documentation as required in S8.B-D. If any corrective action is not yet completed at the time of submission of this annual report, Lister Chain & Forge must describe the status of any outstanding corrective action(s).

Lister Chain & Forge must include the following information with each annual report:

a. Identify the condition triggering the need for corrective action review
b. Describe the problem(s) and identify the dates they were discovered

c. Summarize any Level 1, 2, or 3 corrective actions completed during the previous calendar year and include dates that the corrective actions were completed (Condition S8 of the Permit describes Corrective Actions)
d. Describe the status of any Level 2 or 3 corrective actions triggered during the previous calendar year, and identify dates of expected completion of corrective actions

Lister Chain & Forge must retain a copy of all annual reports onsite for Ecology review.

9.6 CONSISTENT ATTAINMENT

Lister Chain & Forge may reduce sampling to once a year for a period of three years (12 quarters) based on consistent attainment of benchmark values. Consistent attainment requires that eight consecutive quarterly samples be equal to or less than the benchmark value; or for pH, within the range of 5.0 – 9.0. The Permittee cannot suspend quarterly monitoring for visual oil sheen.

During consistent attainment a sample must be collected annually during the 4th quarter. The facility may average the annual sample over the 4th quarter. The annual sample does not need to be a first fall storm event. Sampling must be resumed after the three years of reduced sampling. More information regarding consistent attainment may be found in Permit Condition S4.B.

10.0 LIMITATIONS

This report was prepared exclusively for Lister Chain & Forge, Inc. by Whatcom Environmental Services (WES). The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in WES' services and based on: 1) information available at the time of preparation, 2) data supplied by outside sources, and 3) the assumptions, conditions, and qualifications set forth in this report. This Stormwater Pollution Prevention Plan is intended to be used by Lister Chain & Forge, Inc. for the 3810 Loomis Trail Road, Blaine, Washington facility only, subject to the terms and conditions of the contract with WES. Any other use of, or reliance on, this report by any third party is at the party's sole risk. In the event that changes in the nature, usage, or layout of the property or nearby properties are made, the conclusions and recommendations contained in this report may not be valid. If additional information becomes available, it should be provided to WES so the original conclusions and recommendations can be modified as necessary.

11.0 REFERENCES

U.S. Department of Agriculture (USDA). 1992. Soil Survey of Whatcom County Area, Washington. Soil Conservation Service. 481 pp.

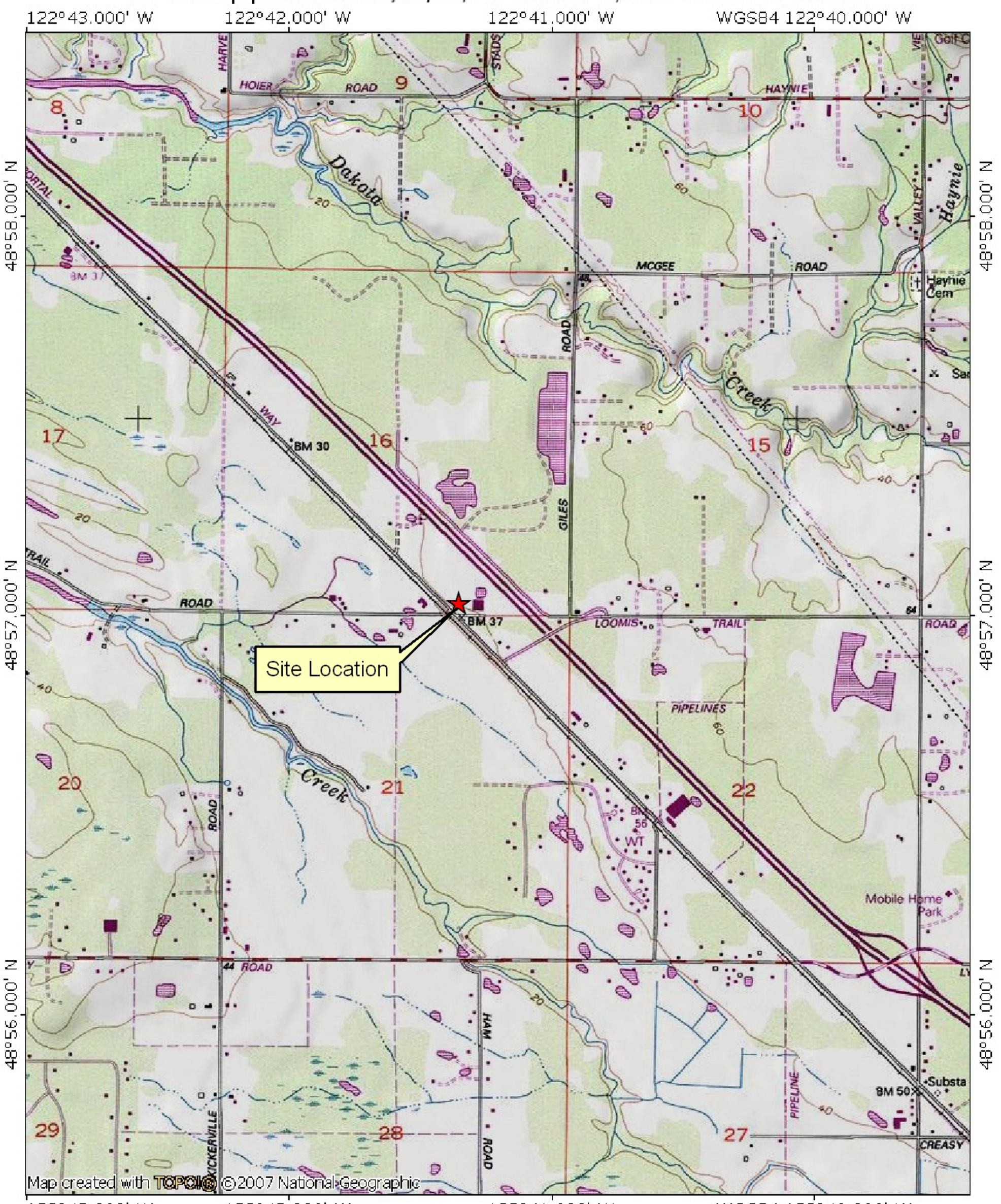
Washington Department of Ecology. December 2019. Industrial Stormwater General Permit. Issuance date November 2019. Effective date January 2020. Expiration date December 2024.

Washington Department of Ecology. April 2004. Guidance Manual for Preparing/ Updating the SWPPP for Industrial Facilities. Publication # 04-10-030.

Washington State Department of Ecology. July 2019. Stormwater Management Manual for Western Washington. Publication # 19-10-021. Available at: http://www.ecy.wa.gov/programs/wq/stormwater/municipal/StrmwtrMan.html

Washington Department of Ecology. Revised February 2005. How to Do Stormwater Sampling: A Guide for Industrial Facilities. Publication # 02-10-071.

TOPO! map printed on 10/28/08, 48°57.003' N, 122°41.205' W WGS84



NATIONAL GEOGRAPHIC

0.0 0.5 1.0 miles
0.0 0.5 1.0 1.5 km

TN MN
17½°
10/28/08

Prepared for:	Prepared by:	Location Map
LISTER	whatcom ENVIRONMENTAL	Lister SWPPP 10/28/08
		Figure 1

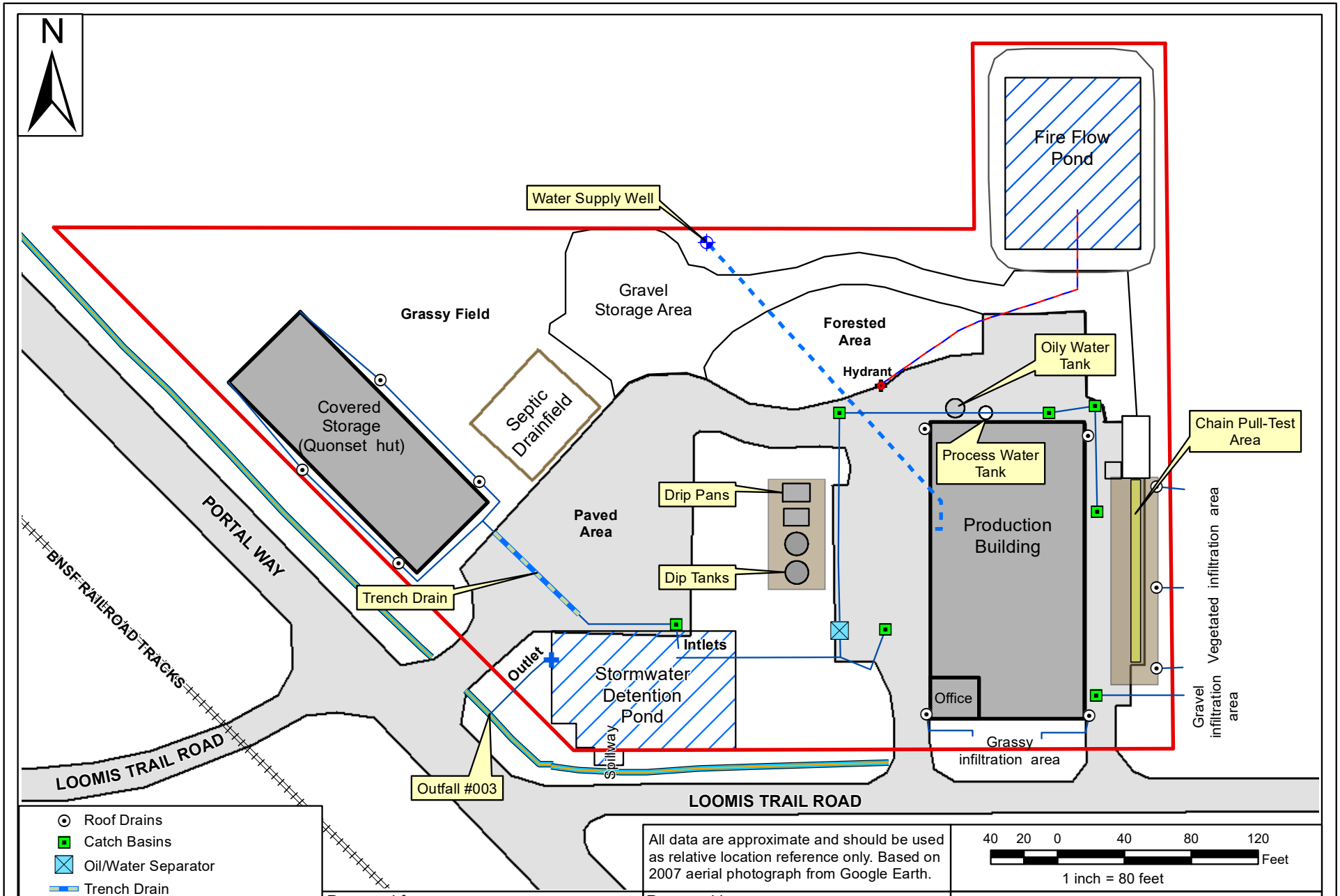

N
Fire Flow Pond
Water Supply Well
Gravel Storage Area
Grassy Field
Forested Area
Oily Water Tank
Hydrant
Covered Storage (Quonset hut)
Septic Drainfield
Chain Pull-Test Area
Process Water Tank
Drip Pans
Paved Area
Production Building
Dip Tanks
PORTAL WAY
BNSF RAILROAD TRACKS
Trench Drain
Intlets
Outlet
Stormwater Detention Pond
Vegetated infiltration area
Gravel infiltration area
Office
Grassy infiltration area
Spillway
Outfall #003
LOOMIS TRAIL ROAD
LOOMIS TRAIL ROAD
Roof Drains
Catch Basins
Oil/Water Separator
Trench Drain
Storm Lines
Storm Ditches
Fire Main
Water Supply Line
Covered Areas
All data are approximate and should be used as relative location reference only. Based on 2007 aerial photograph from Google Earth.
40 20 0 40 80 120
Feet
1 inch = 80 feet
Prepared for:
LISTER
Prepared by:
whatcom ENVIRONMENTAL
Site Map
Lister SWPPP
10/06/16
Figure 2

Table 1. Potential Sources of Stormwater Pollution

Area/Equipment	Activities Exposed to Stormwater	Potential Pollutants	Discharge	Risk
Anchor chain, cutting, manufacturing and heat treating within the building	None	Hydraulic oil, cutting fluid	None	Low
Loading/unloading and storage areas	Outdoor paved and unpaved areas	Hydraulic oil, particulate matter	Spills or leaks may drain to stormwater catch basins and the stormwater detention pond	Low
Water/oil and oil/water ASTs	Secondary containment	Hydraulic oil	None	Low
Anchor chain coating dip tank and drip pans	Drip pans and tank now covered; only possible stormwater interaction with strong wind.	Coal tar solids, PAHs	Drips during windy conditions	Low
Parking areas and driveways	Car and truck traffic	Oil and grease, particulate matter	Stormwater catch basins and the stormwater detention pond	Low
Galvanized roofs	Galvanized roof	Zinc	Roof drains to stormwater catch basins and the stormwater detention pond	Low
Manufacturing building	None	Particulate matter	Roof drains to stormwater catch basins and the stormwater detention pond	Low

Table 2. Benchmark Parameter Values

Parameter	Benchmark Value	Units	Analytical Method	Laboratory Quantitation Level	Minimum Sampling Frequency	Hold Time and (preservative)
Turbidity	25	NTU	EPA 180.1, or meter	0.5	Quarterly	48 hours (ice)
pH	5.0-9.0	Standard Units	Meter/paper*	+/- 0.5	Quarterly	15 minutes (ice)
Total Zinc	117	µg/L	EPA 200.8	2.5	Quarterly	28 days (ice)
Visible Oil Sheen	visual	Yes/No	visual	n/a	Quarterly	n/a
Total Copper	14	µg/L	EPA 200.8	2.0	Quarterly	28 days (ice)
Total Lead	64.6	µg/L	EPA 200.8	0.5	Quarterly	28 days (ice)
Petroleum Hydrocarbons (Diesel Fraction)	10	mg/L	NWTPH-Dx	0.25	Quarterly	14 days (HCL)

* Permittees shall use either a calibrated pH meter or narrow-range pH indicator paper with a resolution not greater than ± 0.5 SU.

APPENDIX A

General Permit

The Industrial Stormwater General Permit is kept on-site in a Stormwater binder.

APPENDIX B

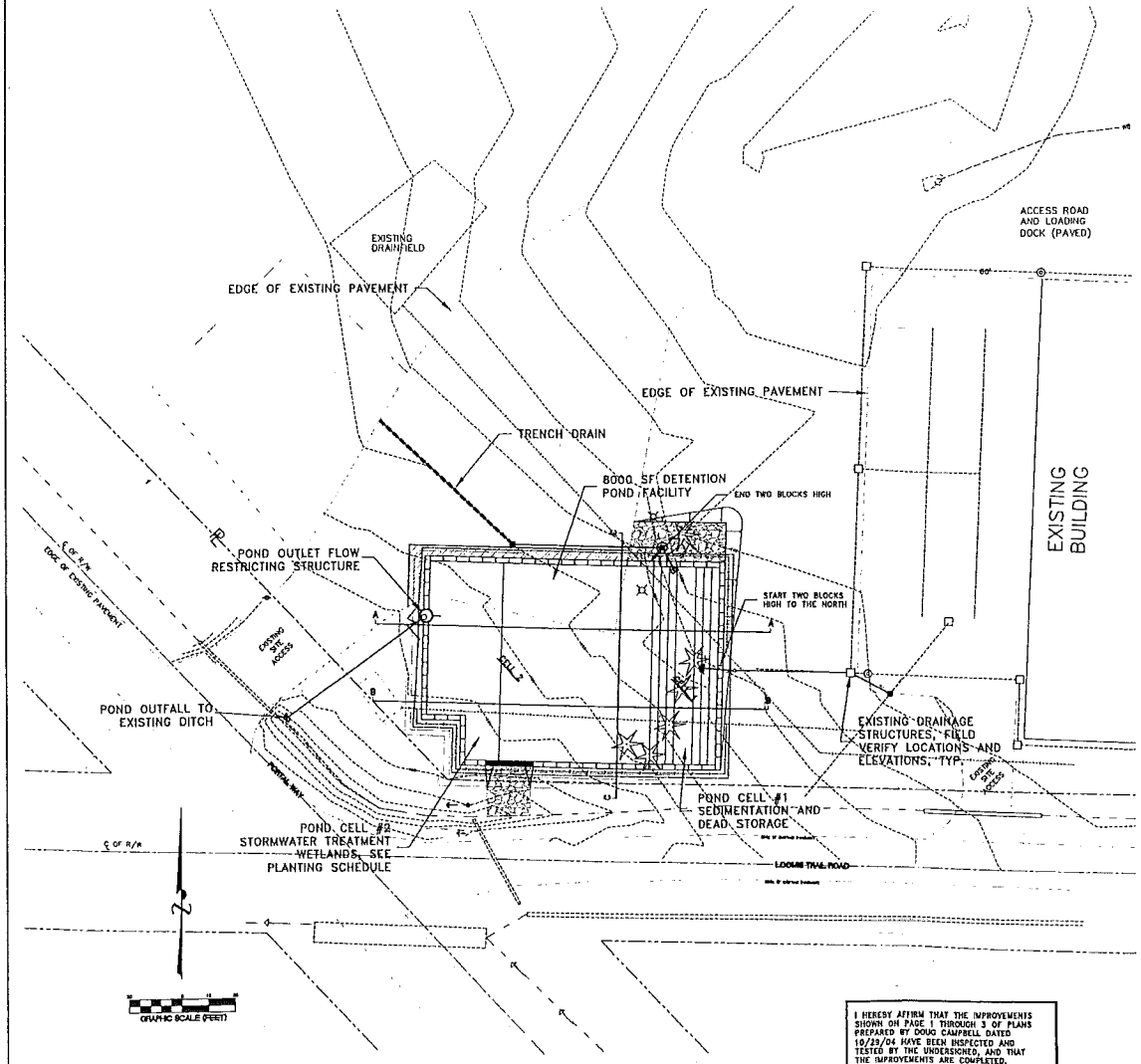
Overall Schedule

Overall Schedule of Tasks

	Frequency
Visual Inspections and BMP maintenance (Section 4.6, Appendix F)	monthly
Visual Insp at Sampling point (same form)	monthly
Vacuum Sweep paved areas	quarterly
Obtain stormwater sample at Outfall 003	quarterly
Send samples to Lab (follow procedure in Section 8.7)	quarterly
Submit DMRs to Ecology (follow procedure in Section 9.1)	quarterly
Audit of spill prevention kits at each location (Section 4.4)	quarterly
Annual Report -- create and submit to Ecology	annually
General Stormwater Training	annually

APPENDIX C

Stormwater Detention Pond Specifications



SITE DRAINAGE PLAN

GENERAL NOTES:

1. PRIOR TO STARTING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE TO MAKE SURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS APPROVED BY ALL OF THE PERMITTING AUTHORITIES.

2. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THESE PLANS, CURRENT WSDOT/APWA STANDARD SPECIFICATIONS, WHATCOM COUNTY DEVELOPMENT STANDARDS, AND SHALL BE SUBJECT TO APPROVAL BY WHATCOM COUNTY PUBLIC WORKS DEPARTMENT, DIVISION OF ENGINEERS.

3. CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION CONFERENCE WITH THE WHATCOM COUNTY DIVISION OF ENGINEERS A MINIMUM OF 3 WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION.

4. CONTRACTOR SHALL OBTAIN A REVOCABLE ENCROACHMENT PERMIT PRIOR TO COMMENCING WORK IN THE RIGHT OF WAY.

5. CONTRACTOR SHALL CONTACT UTILITY LOCATION SERVICE 48 HOURS PRIOR TO STARTING CONSTRUCTION AT 1 800 424 5555.

6. CONTRACTOR MUST PROVIDE THE FOLLOWING TESTS.
   A. PARKING AREA SUBGRADE COMPACTION
   B. PARKING LOT GRAVEL COMPACTION
   C. FINISHED STORAGE VOLUME OF DETENTION POND

7. ALL WORK MUST BE INSPECTED BY A REPRESENTATIVE OF THE COUNTY ENGINEERING DIVISION. CONTRACTOR SHALL CALL AT LEAST 24 HOURS IN ADVANCE FOR COUNTY INSPECTION AS FOLLOWS:
   A. PLACEMENT OF TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES.
   B. CONSTRUCTION IN DRAINAGE DITCHES WITHIN ROAD RIGHT OF WAY.
   C. OVERALL INSPECTION FOR FINISHED SHOULDERS, DITCHES, PERMANENT SEEDING.
   D. END OF MAINTENANCE PERIOD.

8. ALL TESTING REQUIRED FOR THE IMPROVEMENTS SHALL BE THE RESPONSIBILITY OF THE OWNER AND SHALL BE IN CONFORMANCE WITH WHATCOM COUNTY DEVELOPMENT STANDARDS.

9. SITE CLEARING SHALL INCLUDE THE LOCATION AND REMOVAL OF ALL ABOVE GROUND AND BURIED DEBRIS AND WASTE THAT MAY BE PRESENT.

10. STORM PIPE SHALL BE OF AN APPROVED MATERIAL AND OF THE SIZE NOTED ON THE PLANS.

11. CONTRACTOR SHALL RIP-RAP ALL CULVERT INLETS AND OUTLETS

12. CONTRACTOR SHALL RESTORE ALL PRIVATE AND PUBLIC PROPERTY DISRUPTED BY THE PROJECT IMMEDIATELY AFTER CONSTRUCTION.

13. ALL CUT AND FILL SLOPES SHALL BE SEEDED AND FERTILIZED FOR EROSION CONTROL. CONTRACTOR SHALL BE RESPONSIBLE FOR SLOPE EROSION UNTIL VEGETATION IS FIRMLY ESTABLISHED.

14. CONTRACTOR SHALL INFORM THE ENGINEER AND OBTAIN APPROVAL FROM WHATCOM COUNTY DIVISION OF ENGINEERS OF ANY PROPOSED CHANGES IN PLAN PRIOR TO CONSTRUCTION OF THAT CHANGE. CONTRACTOR SHALL KEEP RECORD OF DEVIATIONS AND FORWARD TO THE ENGINEER AND WHATCOM COUNTY DIVISION OF ENGINEERS

15. TRAFFIC CONTROL TO BE MAINTAINED IN ACCORDANCE WITH STANDARD SPECIFICATIONS 1-07.23. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SAFEGUARDS, SAFETY DEVICES, PROTECTIVE EQUIPMENT, FLAGGERS, AND ANY OTHER NEEDED ACTIONS TO PROTECT THE LIFE, HEALTH, AND SAFETY OF THE PUBLIC, AND TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF THE WORK COVERED BY THE CONTRACTOR. ANY WORK WITHIN THE TRAVELED RIGHT-OF-WAY THAT MAY INTERRUPT NORMAL TRAFFIC FLOW SHALL REQUIRE AT LEAST ONE FLAGGER FOR EACH LANE OF TRAFFIC AFFECTED. ALL SECTIONS OF THE APWA STANDARD SPECIFICATIONS 1-07.23 - TRAFFIC CONTROL SHALL APPLY.

16. THE LOCATIONS OF UNDERGROUND FACILITIES AND OTHER FEATURES SHOWN ON THESE PLANS ARE NOT BASED ON FIELD SURVEY DATA AND ARE APPROXIMATE IN NATURE. IT SHALL BE THE CONTRACTOR'S FULL RESPONSIBILITY TO CONTACT THE VARIOUS UTILITY COMPANIES TO LOCATE THEIR FACILITIES PRIOR TO STARTING CONSTRUCTION. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR DAMAGE AND REPAIR TO THESE FACILITIES CAUSED BY HIS WORK FORCE. CALL 1-800-424-5555 FOR UTILITY LOCATE 48 HOURS PRIOR TO WORK. CONTRACT TO HOLD. THE CONTRACTOR SHALL NOTIFY THE ENGINEER PROMPTLY OF ANY CONFLICT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF ALL ADJACENT UTILITIES WHICH INCLUDE BUT ARE NOT LIMITED TO: WATER, SEWER, STORM SEWER, POWER, TELEPHONE, CABLE TV, IRRIGATION, AND STREET LIGHTING. CONTRACTOR SHALL RESTORE ALL PRIVATE AND PUBLIC PROPERTY DISTURBED BY THE PROJECT UPON COMPLETION OF THE PROJECT.

17. ALL DIMENSIONS AND GRADES SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION FOR NECESSARY PLAN OR GRADE CHANGES. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR WORK HAVING TO BE REDONE DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS IF SUCH NOTIFICATION WAS NOT BEEN GIVEN.

18. CONTRACTOR SHALL POST A MAINTENANCE SECURITY AS REQUIRED BY THE COUNTY ENGINEER.

20. A COPY OF THESE APPROVED PLANS MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.

21. DRAINAGE
   A. CB FRAME AND GRATE — TYPE 1 (WSDOT 8-1), TYPE 2 (WSDOT 8-14)
   B. DRAINAGE PIPE — PER APWA STD 9-05.12(2)
   C. TRENCH DRAIN SHALL BE PERMA-TRENCH E-861 TRENCH DRAIN, OR EQUAL

22. ALL CONCRETE SHALL BE APWA CLASS 3000 PER APWA 6-02.3(2)a.

23. EROSION CONTROL

ALL DISTURBED AREAS NOT UNDER CONSTRUCTION SHALL BE COVERED WITH MULCH OR WOOD CHIPS. UPON COMPLETION OF CONSTRUCTION ALL DISTURBED AREAS SHALL BE HYDROSEEDED WITH EROSION CONTROL MIXTURE AS FOLLOWS:

75-85 % TALL OR MEADOW FESCUE,
10-15 % SEASIDE/CREEPING BENTGRASS,
5-10 % REDTOP BENTGRASS,
SEED AT 40 LBS./ACRE.

CONTRACTOR SHALL BE RESPONSIBLE FOR VEGETATION UNTIL IT IS FULLY ESTABLISHED.

ANY TEMPORARY DITCHES OR DIVERSIONS OF WATER SHALL BE ROUTED THROUGH STILLING POOLS AND PROVIDED WITH PEA GRAVEL OR STRAW BALE CHECK DAMS AT A MAXIMUM SPACING OF 50' O.C.

PLANTING NOTES:

1) PLANTS ARE TO BE IN HEALTHY CONDITION, FREE OF DAMAGE AND/OR DISEASE AT PLANTING.
2) ALL PLANTINGS AND LANDSCAPE INSTALLATION SHALL CONFORM WITH 2001 DOE STORM WATER MANUAL BMP C120 AND C121.
3) PLANTINGS SHALL BE SPACED AT APPROXIMATELY 4 FT. O.C. IN RANDOMLY DISTRIBUTED CLUMPS OF LIKE SPECIES TO CREATE "LANDSCAPE ISLANDS" THROUGHOUT PLANTING AREAS, EXCEPT AS NOTED BELOW.
4) PLANTING CONTRACTOR SHALL BE RESPONSIBLE FOR PLANTING EXERGENT WETLAND SPECIES IN APPROPRIATE AREAS OF THE STORMWATER WETLAND TO PROVIDE SUITABLE INUNDATION LEVELS FOR THE SPECIES, AS LISTED IN THE STORMWATER TREATMENT WETLAND PLANTING SCHEDULE, PER THE DOE GUIDELINES.
5) PLANTING AREAS SHALL BE OVEREXCAVATED AND FILLED IN WITH TOPSOIL WHERE REQUIRED BY SOIL CONDITIONS FOR ADEQUATE PLANT GROWTH AND SURVIVAL.
6) MINIMUM 3" LAYER OF MULCH SHALL BE APPLIED TO ALL SOIL AREAS DISTURBED FROM PLANTING ACTIVITIES AND UNDER ALL NEWLY INSTALLED PLANT MATERIAL TO THE VEGETATION DRIP-LINE OR A MINIMUM 3 FT. RADIUS FROM THE PLANT CROWN, WHICH EVER DISTANCE IS GREATER. MULCH SHALL BE CLEARED AWAY FROM DIRECT CONTACT WITH THE CROWN OF THE PLANT.
7) ACCEPTABLE MULCH MATERIAL SHALL BE HOG FUEL/GRINDINGS, AS APPROVED BY ENGINEER.
8) A 1-YEAR WARRANTY IS REQUIRED ON ALL POND PLANTING. THE CONTRACTOR SHALL MONITOR THE SITE FOR 1 YEAR FROM THE DATE OF PROJECT APPROVAL BY THE ENGINEER. AT THE END OF THE ONE YEAR MONITORING, SHOULD THERE BE LESS THAN 100% SURVIVAL, THEN REPLANTING AND MONITORING WILL CONTINUE UNTIL ONE SUCH YEAR IS ACHIEVED.
9) PLANTING IS TO OCCUR FROM LATE FALL TO EARLY SPRING.
10) WATERING OF PLANT MATERIAL SHALL BE AS NEEDED TO ASSURE SURVIVAL RATE.
11) PERIODIC REMOVAL OF WEEDS AND PROBLEMATIC INVASIVE SPECIES WILL BE PERFORMED A MINIMUM OF 3 TIMES PER YEAR. HERBICIDE APPLICATION MUST BE APPROVED BY CITY AND CONFORM TO STATE LICENSING AND APPLICATION REQUIREMENTS.
12) MAINTENANCE AND/OR REPLANTING OF DAMAGED AND/OR DYING PLANTS WILL OCCUR IN THE SPRING OR FALL ON AN ANNUAL BASIS OVER THE MONITORING PERIOD.
13) ALL SIDE SLOPE AND DISTURBED AREAS WITHIN AND AROUND THE DETENTION POND FACILITY AREA SHALL BE COVERED WITH 3"-4" HOG FUEL/GRINDINGS, AND SHALL BE HYDROSEEDED WITH THE FOLLOWING "LOW GROW" SEED MIX AT A RATE OF 2.5 LBS. PER 1000 SF:

SEED NAME	% OF MIX
DWARF TALL FESCUE	40%
DWARF PERENNIAL RYE "BARCLAY"	30%
RED FESCUE	25%
COLONIAL BENTGRASS	5%

I HEREBY AFFIRM THAT THE IMPROVEMENTS SHOWN ON PAGE 1 THROUGH 3 OF PLANS PREPARED BY DOUG CAMPBELL DATED 10/29/04 HAVE BEEN INSPECTED AND TESTED BY THE UNDERSIGNED, AND THAT THE IMPROVEMENTS ARE COMPLETED.

ENGINEER'S NAME AND REGISTRATION NUMBER: _____

DATE: _____

RECORD DRAWING

REVISION	DRAWN BY:	DATE:	CHECKED BY:	DATE:
1 ADDED EXST. UTILITY LINES, NOTES FOR PAVING AND GRADING	NGR	10/11/05	DNC	10/11/05
2				
3				
4				

ASSOCIATED PROJECT CONSULTANTS, INC., P.S.
CIVIL ENGINEERS, PROJECT AND LAND USE MANAGEMENT, BUILDING, STRUCTURAL, AND ENVIRONMENTAL SERVICES
1401 ASTOR STREET, BELLINGHAM, WA. 98225
PHONE (360) 671-1146 FAX (360) 671-1169
A·P·C incorporated

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: AS NOTED
DRAWN BY: NGR
DATE: 10/29/04
APPROVED BY:
NORTH ROTATION: @ BASE POINT:

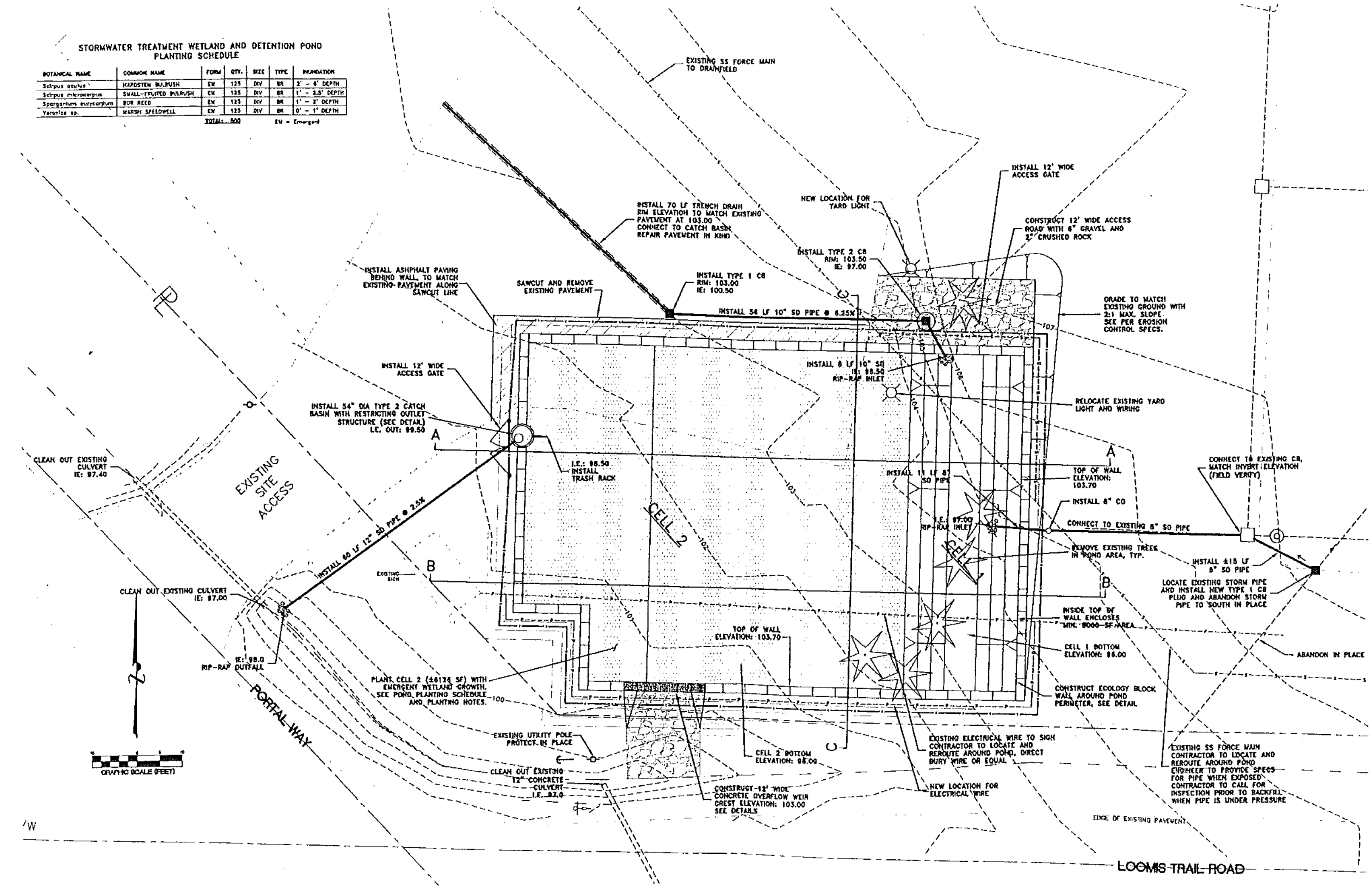
CLIENT: LISTER CHAIN AND FORGE
PROJECT: STORM DRAINAGE IMPROVEMENTS
TITLE: SITE PLAN AND GENERAL NOTES

JOB NO.: 04-134
ACAD FILE: Lister SD plan C3
SHEET: 1
OF: 3

STORMWATER TREATMENT WETLAND AND DETENTION POND
PLANTING SCHEDULE

BOTANICAL NAME	COMMON NAME	FORM	QTY.	SIZE	TYPE	INUNDATION
Scirpus acutus	HARDSTEM BULRUSH	EM	125	DIV	BR	3' - 6' DEPTH
Scirpus microcarpus	SMALL-FRUITED BULRUSH	EM	125	DIV	BR	1' - 3.5' DEPTH
Sparganium eurycarpum	BUR REED	EM	125	DIV	BR	1' - 3' DEPTH
Veronica sp.	MARSH SPEEDWELL	EM	125	DIV	BR	0' - 1' DEPTH

TOTAL: 500 EM = Emergent



EXISTING SS FORCE MAIN TO DRAINFIELD
INSTALL 70 LF TRENCH DRAIN RIM ELEVATION TO MATCH EXISTING PAVEMENT AT 103.00 CONNECT TO CATCH BASIN REPAIR PAVEMENT IN KIND
NEW LOCATION FOR YARD LIGHT
INSTALL 12' WIDE ACCESS GATE
CONSTRUCT 12' WIDE ACCESS ROAD WITH 6" GRAVEL AND 2" CRUSHED ROCK
INSTALL TYPE 2 CB RIM: 103.50 IE: 97.00
INSTALL ASPHALT PAVING BEHIND WALL TO MATCH EXISTING PAVEMENT ALONG SAWCUT LINE
SAWCUT AND REMOVE EXISTING PAVEMENT
INSTALL TYPE 1 CB RIM: 103.00 IE: 100.50
INSTALL 54 LF 10" SD PIPE @ 6.25%
GRADE TO MATCH EXISTING GROUND WITH 2:1 MAX. SLOPE SEE PER EROSION CONTROL SPECS.
INSTALL 8 LF 10" SD IE: 98.50 RIP-RAP INLET
INSTALL 12' WIDE ACCESS GATE
INSTALL 54" DIA TYPE 2 CATCH BASIN WITH RESTRICTING OUTLET STRUCTURE (SEE DETAIL) I.E. OUT: 99.50
RELOCATE EXISTING YARD LIGHT AND WIRING
PL
A
A
I.E.: 98.50 INSTALL TRASH RACK
CLEAN OUT EXISTING CULVERT IE: 97.40
EXISTING SITE ACCESS
CELL 2
INSTALL 11 LF 8" SD PIPE
TOP OF WALL ELEVATION: 103.70
INSTALL 8" CO
CONNECT TO EXISTING CB, MATCH INVERT ELEVATION (FIELD VERIFY)
I.E.: 97.00 RIP-RAP INLET
CONNECT TO EXISTING 8" SD PIPE
CELL 1
REMOVE EXISTING TREES IN POND AREA, TYP.
INSTALL ±15 LF 8" SD PIPE
INSTALL 60 LF 12" SD PIPE @ 2.5%
EXISTING SIGN
B
B
LOCATE EXISTING STORM PIPE AND INSTALL NEW TYPE 1 CB PLUG AND ABANDON STORM PIPE TO SOUTH IN PLACE
CLEAN OUT EXISTING CULVERT IE: 97.00
INSIDE TOP OF WALL ENCLOSES MIN. 6000 SF AREA.
TOP OF WALL ELEVATION: 103.70
CELL 1 BOTTOM ELEVATION: 96.00
ABANDON IN PLACE
N
IE: 98.0 RIP-RAP OUTFALL
PLANT CELL 2 (±6125 SF) WITH EMERGENT WETLAND GROWTH. SEE POND PLANTING SCHEDULE AND PLANTING NOTES.
CONSTRUCT ECOLOGY BLOCK WALL AROUND POND PERIMETER, SEE DETAIL
PORTAL WAY
EXISTING UTILITY POLE PROTECT IN PLACE
EXISTING ELECTRICAL WIRE TO SIGN CONTRACTOR TO LOCATE AND REROUTE AROUND POND, DIRECT BURY WIRE OR EQUAL
EXISTING SS FORCE MAIN CONTRACTOR TO LOCATE AND REROUTE AROUND POND ENGINEER TO PROVIDE SPECS FOR PIPE WHEN EXPOSED CONTRACTOR TO CALL FOR INSPECTION PRIOR TO BACKFILL WHEN PIPE IS UNDER PRESSURE
C
C
CELL 2 BOTTOM ELEVATION: 98.00
GRAPHIC SCALE (FEET)
CLEAN OUT EXISTING 12" CONCRETE CULVERT I.E. 97.0
CONSTRUCT 12' WIDE CONCRETE OVERFLOW WEIR CREST ELEVATION: 103.00 SEE DETAILS
NEW LOCATION FOR ELECTRICAL WIRE
EDGE OF EXISTING PAVEMENT
R/W
LOOMIS TRAIL ROAD

RECORD DRAWING

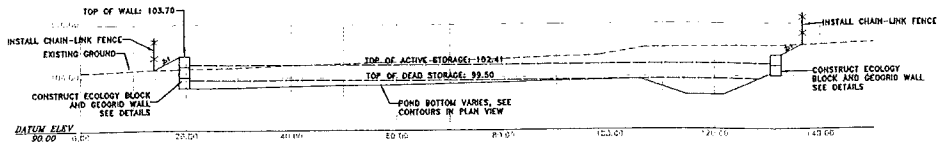
REVISION	DRAWN BY:	DATE:	CHECKED BY:	DATE:
1 ADDED EXST. UTILITY LINES, NOTES FOR PAVING AND GRADING	NGR	10/11/06	DNC	10/11/06
2				
3				
4				

SEAL:
A·P·C INCORPORATED
ASSOCIATED PROJECT CONSULTANTS, INC., P.S.
CIVIL ENGINEERS, PROJECT AND LAND USE MANAGEMENT, BUILDING, STRUCTURAL, AND ENVIRONMENTAL SERVICES
1401 ASTOR STREET, BELLINGHAM, WA. 98225
PHONE (360) 671-1146 FAX (360) 671-1169

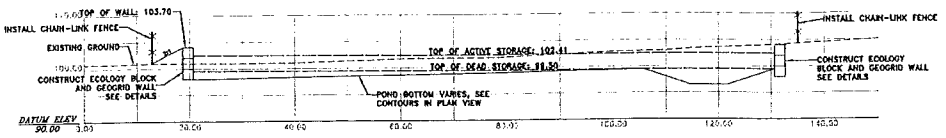
HORIZONTAL SCALE: 1"=10'
VERTICAL SCALE: AS NOTED
DRAWN BY: NGR
DATE: 10/29/04
APPROVED BY:
NORTH ROTATION: A BASE POINT

CLIENT: LISTER CHAIN AND FORGE
PROJECT: STORM DRAINAGE IMPROVEMENTS
TITLE: DETENTION POND PLAN

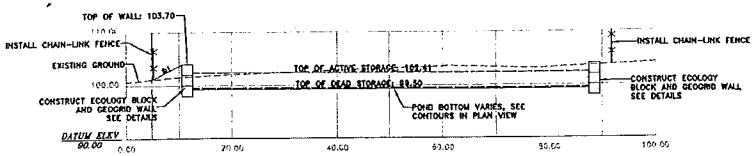
JOB NO: 04-134
ACAD FILE: Lister SD plan E3
SHEET: 2
OF: 3



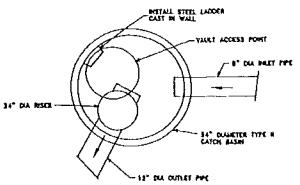
SECTION A–A



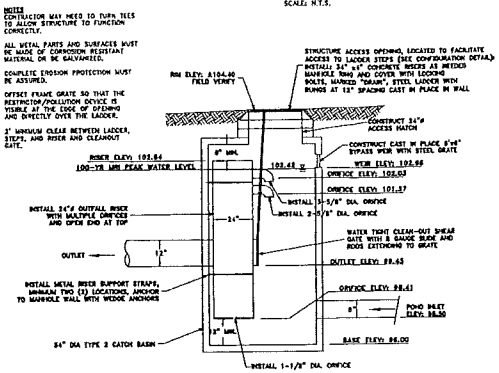
SECTION B–B



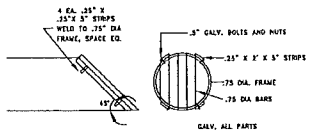
SECTION C–C



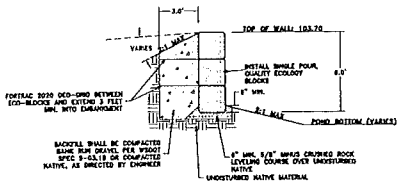
FLOW RESTRICTING STRUCTURE
CONFIGURATION DETAIL
SCALE: N.T.S.



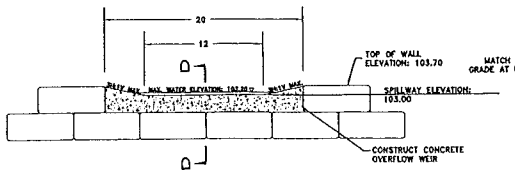
FLOW RESTRICTING STRUCTURE
SCALE: N.T.S.



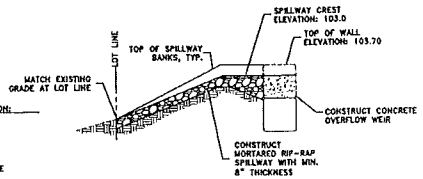
POND OUTLET TRASH RACK DETAIL
SCALE: N.T.S.



ENGINEERED BLOCK RETAINING WALL DETAIL
SCALE: N.T.S.



EMERGENCY OVERFLOW SPILLWAY
SCALE: N.T.S.



SPILLWAY SECTION D–D
SCALE: N.T.S.

REVISION:	DRAWN BY:	DATE:	CHECKED BY:	DATE:
1 ADDED EXST. UTILITY LINES, NOTES FOR PAVING AND GRADING	NGR	10/11/06	DNC	10/11/06
2				
3				
4				

RECORD DRAWING

ASSOCIATED PROJECT CONSULTANTS, INC., P.S.
CIVIL ENGINEERS, PROJECT AND LAND USE MANAGEMENT, BUILDING, STRUCTURAL, AND ENVIRONMENTAL SERVICES
1401 ASTOR STREET, BELLINGHAM, WA. 98225
PHONE (360) 671-1146 FAX (360) 671-1169

HORIZONTAL SCALE: AS NOTED
VERTICAL SCALE: AS NOTED
DRAWN BY: NGR
DATE: 10/29/04
APPROVED BY:
WORK REVISION: # MAJOR WORK:

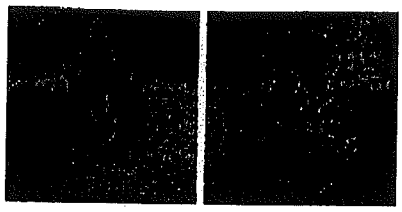
CLIENT: LISTER CHAIN AND FORGE
PROJECT: STORM DRAINAGE IMPROVEMENTS
TITLE: DETENTION POND SECTIONS AND DETAILS

JOB NO.: 04-134
ACAD FILE: Lister SD plan E3
SHEET: 3
OF: 3

APPENDIX D

MSDSs for Material

Safety (MSDS) data for toluene



Click here for data on toluene in student-friendly format, from the HSci project

General

Synonyms: methylbenzene, phenylmethane, toluol, antisal 1A, CP 25, methacide, methylbenzol, NCI-C07272, RCRA waste number U220, tolu-sol
Uses: Solvent
Molecular formula: C_7H_8
CAS No: 108-88-3
EC No: 203-625-9

Physical data

Appearance: Colourless liquid with a benzene-like odour (odour threshold 0.17 ppm)
Melting point: -93 C
Boiling point: 110.6 C
Specific gravity: 0.865
Vapour pressure: 22 mm Hg at 20 C (vapour density 3.2)
Flash point: 4 C
Explosion limits: 1% - 7%
Autoignition temperature: 536 C

Stability

Stable. Substances to be avoided: oxidising agents, oxygen, moisture. **Highly flammable.** Hygroscopic.

Toxicology

Toxic by inhalation, ingestion or by absorption through skin. Serious irritant. **Experimental teratogen.**

Toxicity data

(The meaning of any abbreviations which appear in this section is given here.)
ORL-RAT LD50 636 mg kg^{-1}
IPR-RAT LD50 1332 mg kg^{-1}
ORL-HMN LDLO 50 mg kg^{-1}
IPR-MUS LD50 59 mg kg^{-1}
IHL-MAM LC50 30 g m^{-3}

Irritation data
(The meaning of any abbreviations which appear in this section is given here.)
EYE-HMN 300 ppm.
SKN-RBT 435 mg mild.

Risk phrases
(The meaning of any risk phrases which appear in this section is given here.)
R11 R20

Transport information

(The meaning of any UN hazard codes which appear in this section is given here.)
UN Major hazard class 3.0 Packing group II. UN No 1294. IMDG class 3.

Personal protection

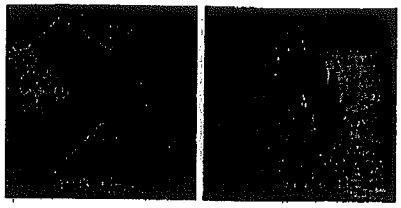
Safety glasses. Good ventilation.

Safety phrases
(The meaning of any safety phrases which appear in this section is given here.)
S16 S25 S29 S33.

[Return to Physical & Theoretical Chemistry Lab. Safety home page.]

This information was last updated on January 21, 2004. Although we have tried to make it as accurate and useful as possible, we can take no responsibility for its use or misuse.

Safety (MSDS) data for xylenes



General

Synonyms: dimethylbenzene, xylol
Molecular formula: $C_6H_4(CH_3)_2$ This is a mixture of the three xylenes, m-xylene (CAS 108-38-3), o-xylene (CAS 95-47-6) and p-xylene (CAS 106-42-3), and often also contains ethyl bezene (CAS 100-41-4).
CAS No: 1330-20-7
EINECS No:

Physical data

Appearance: colourless liquid
Melting point: -48 C
Boiling point: 137 C
Vapour density: 3.7 (air = 1)
Vapour pressure: 5.1 mm Hg at 20 C
Density (g cm^{-3}): 0.87
Flash point: 27 C (closed cup)
Explosion limits: 1.1 - 7%
Autoignition temperature:
Water solubility:

Stability

Stable. Highly flammable - incompatible with strong oxidizing agents.

Toxicology

Harmful if swallowed or inhaled. Eye, skin and respiratory irritant. May act as a narcotic. Typical TLV/TWA 100 ppm.

Toxicity data

(The meaning of any abbreviations which appear in this section is given here.)

ORL-RAT LD50 4300 mg kg^{-1}
SCU-RAT LD50 1700 mg kg^{-1}

Transport information

Personal protection

Safety glasses, good ventilation. Remove sources of ignition from the working area.

[Return to Physical & Theoretical Chemistry Lab. Safety home page.]

This information was last updated on September 4, 2003. We have tried to make it as accurate and useful as possible, but can take no responsibility for its use, misuse, or accuracy. We have not verified this information, and cannot guarantee that it is up-to-date.

Shell Canada Limited

Material Safety Data Sheet

Effective Date: 2006-06-07
Supersedes: 2003-06-05

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT:	**TELLUS* 46**
SYNONYMS:	HYDRAULIC OIL
PRODUCT USE:	Hydraulic Fluid

SUPPLIER	**TELEPHONE NUMBERS**	
Shell Canada Limited (SCL)	**Shell Emergency Number**	1-800-661-7378
P.O. Box 100, Station M	**CANUTEC 24 HOUR EMERGENCY NUMBER**	613-996-6666
400-4th Ave. S.W.	For general information:	1-800-661-1600
Calgary, AB Canada	For MSDS information:	403-691-3982
T2P 2H5	(From 7:30 to 4:30 Mountain Time)	

This MSDS was prepared by the Toxicology and Product Stewardship Section of Shell Canada Limited.

*An asterisk in the product name designates a trade-mark(s) of Shell Canada Limited, used under license by Shell Canada Products.

2. COMPOSITION / INFORMATION ON INGREDIENTS

THIS PRODUCT IS NOT A WHMIS CONTROLLED SUBSTANCE.
See Section 8 for Occupational Exposure Guidelines.

3. HAZARDS IDENTIFICATION

Physical Description: Liquid Lightly Coloured Hydrocarbon Odour

Routes of Exposure: Exposure will most likely occur through skin contact or from inhalation of mechanically or thermally generated oil mists.

Hazards:

This product is not expected to be irritating and has a low level of toxicity under normal use.
Inhalation of oil mist or vapours from hot oil may cause irritation of the upper respiratory tract.

For further information on health effects, see Section 11.

4. FIRST AID

Eyes: Flush eyes with water for at least 15 minutes while holding eyelids open. If irritation occurs and persists, obtain medical attention.

Skin: Wipe excess from skin. Wash contaminated skin with mild soap and water for at least 15 minutes. If irritation occurs and persists, obtain medical attention. If material is injected under the skin, get medical attention promptly to prevent serious damage; do not wait for symptoms to develop.

Ingestion: Not normally required; obtain medical attention if large amounts have been ingested. Do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.

Inhalation: Remove victim from further exposure. Additional first aid treatment is not ordinarily required.

Notes to Physician: In general, lubricating oils have low oral toxicity. High pressure injection under the skin may have serious consequences and may require urgent treatment.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Dry Chemical
Carbon Dioxide
Foam
Water Fog

Firefighting Instructions: Material will not burn unless preheated. Product will float and can be reignited on surface of water. Do not use a direct stream of water as it may spread fire. Use water to cool fire exposed containers. Water may be used to flush spills away from exposure. Do not enter confined fire space without adequate protective clothing and an approved positive pressure self-contained breathing apparatus.

Hazardous Combustion Products: Carbon monoxide, carbon dioxide and dense smoke are produced on combustion.

6. ACCIDENTAL RELEASE MEASURES

Eliminate all ignition sources. Isolate hazard area and restrict access. Wear appropriate breathing apparatus (if applicable) and protective clothing. Stop leak only if safe to do so. Spilled material is slippery. Dike and contain land spills; contain spills to water by booming. For large spills remove by mechanical means and place in containers. Absorb residue or small spills with absorbent material and remove to non-leaking containers for disposal. Flush area with water to remove trace residue. Dispose of recovered material as noted under Disposal Considerations. Notify appropriate environmental agency(ies).

7. HANDLING AND STORAGE

Handling: Avoid excessive heat, formation of oil mist, breathing of vapours and mist of hot oil and prolonged or repeated contact with skin. Wash with soap and water prior to eating, drinking, smoking, applying cosmetics or using toilet facilities. Launder contaminated clothing prior to reuse. Use good personal hygiene.

Storage: Store in a cool, dry, well ventilated area, away from heat and ignition sources.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

The following information, while appropriate for this product, is general in nature. The selection of personal protective equipment will vary depending on the conditions of use.

OCCUPATIONAL EXPOSURE LIMITS (Current ACGIH TLV/TWA unless otherwise noted):
Oil mist (mineral): 5 mg/m3 (STEL: 10 mg/m3)

Mechanical Ventilation: Not normally required. Local ventilation is recommended if oil mist is present or if exposure limit is exceeded. Make up air should always be supplied to balance air exhausted (either generally or locally).

PERSONAL PROTECTIVE EQUIPMENT:

Eye Protection: No special eye protection is routinely necessary. Wear safety glasses as appropriate.

Skin Protection:	Not normally needed. Chemically-resistant gloves should be worn for frequent or prolonged contact with this product. Best protection is provided by: Nitrile Rubber.
Respiratory Protection:	Not normally required under intended conditions of use. If airborne concentration is high (e.g. when product is heated), use a NIOSH-approved chemical cartridge respirator with organic vapour cartridges in combination with a P95 particulate filter.

9. PHYSICAL DATA

Physical State:	Liquid	**Odour:**	Hydrocarbon Odour
Appearance:	Lightly Coloured	**Odour Threshold:**	Not available
Pour Point, ℃ :	Pour Point < -24 ℃	**Boiling Point, ℃ :**	
Vapour Pressure (absolute):		**Vapour Density (air = 1):**	Not available
Density:	approximately 871.1 kg/m3 15 ℃	**@Flash Point, ℃ :**	Cleveland Open Cup > 210 ℃
Specific Gravity (Water = 1):		**Lower Flammable Limit:**	Not available
pH:	Not applicable	**Upper Flammable Limit:**	Not available
Viscosity:	43.7 - 48.3 cSt @ 40 ℃	**Autoignition Temperature, ℃:**	Not available
Evaporation Rate (n-BuAc = 1):	Not available	**Partition Coefficient (log K_{ow}):**	Not available
Water Solubility:	Insoluble	**Molecular Weight:**	
Other Solvents:	Hydrocarbon Solvents	**Formula:**	

10. STABILITY AND REACTIVITY

Chemically Stable:	Yes	**Hazardous Polymerization:**	No
Sensitive to Mechanical Impact:	No	**Sensitive to Static Discharge:**	No
Incompatible Materials:	Avoid strong oxidizing agents.		
Conditions of Reactivity:	Avoid excessive heat, formation of vapours or mists.		

11. TOXICOLOGICAL INFORMATION

Routes of Exposure:	Exposure will most likely occur through skin contact or from inhalation of mechanically or thermally generated oil mists.
Irritancy:	This product is not a primary skin irritant after exposure of short duration, is not a skin sensitizer and is not irritating to the eyes.
Acute Toxicity:	This product is not expected to be irritating and has a low level of toxicity under normal use.
Chronic Effects:	Prolonged or repeated contact may cause various forms of dermatitis including folliculitis and oil acne. Long term intensive exposure to oil mist may cause benign lung fibrosis.

12. ECOLOGICAL INFORMATION

Environmental Effects:	Do not allow product or runoff from fire control to enter storm or sanitary sewers, lakes, rivers, streams, or public waterways. Block off drains and ditches. Provincial regulations require and federal regulations may require that environmental and/or other agencies be notified of a spill incident. Spill area must be cleaned and restored to original condition or to the satisfaction of authorities.
Biodegradability:	Not readily biodegradable.

13. DISPOSAL CONSIDERATIONS

Waste management priorities (depending on volumes and concentration of waste) are: 1. recycle (reprocess), 2. energy recovery 3. incineration, 4. disposal at a licenced waste disposal facility. Do not attempt to combust waste on-site.

14. TRANSPORTATION INFORMATION

Canadian Road and Rail Shipping Classification:
This product is not regulated under the Canadian Transportation of Dangerous Goods Regulations for transport by road and rail.

15. REGULATORY INFORMATION

This product has been classified in accordance with the hazard criteria of the *Controlled Products Regulations* (CPR) and the MSDS contains all the information required by the CPR.

	THIS PRODUCT IS NOT A WHMIS CONTROLLED SUBSTANCE.
DSL/NDSL Status:	This product, or all components, are listed on the Domestic Substances List, as required under the Canadian Environmental Protection Act. This product and/or all components are listed on the U.S. EPA TSCA Inventory.
Other Regulatory Status:	Provincial criteria are likely and should be requested when notifying provincial authorities. No Canadian federal standard; however, for general discharge guidance, federal installations limited to 15 mg/L for total oil and grease.

16. ADDITIONAL INFORMATION

Revisions:	This MSDS has been reviewed and updated. Section 5 Section 8

FARWEST PAINT MANUFACTURING CO.
4522 SOUTH 133RD STREET
TUKWILA, WASHINGTON 98168

MATERIAL SAFETY DATA SHEET
FOR COATINGS AND RELATED MATERIALS
PREP: NOV. 1989 UPDATE: JULY 1997

SECTION I PRODUCT IDENTIFICATION

SPECIFICATION NO: A-A-1632 (TT-V-51)
CAGE CODE: 6F266
NAT'L STOCK NO: 8010-00-299-0214 (1 GL)
8010-00-160-5856 (5 GL)
PRODUCT NAME: #40 VITANIC BLACK ASPHALT VARNISH

PRODUCT CLASS: LINSEED/ASPHALT SOLUTION

HAZARDOUS MATERIAL: YES XX NO ____

24 HOUR EMERGENCY ASSISTANCE

EMERGENCY (CHEMTREC) (800) 424-9300
INFORMATION (FARWEST) (206) 244-8844

HAZARD RATING		THIS PRODUCT	
0	LOWEST	HEALTH	1
1		FLAMMABILITY	1
2		REACTIVITY	1
3		PERSONAL PROTECTION	G
4	EXTREME		

SECTION II HAZARDOUS INGREDIENTS

INGREDIENT	CAS NUMBER	PERCENT (BY WEIGHT)	OCCUPATIONAL EXPOSURE TLV (ACGIH)	PEL (OSHA)
MINERAL SPIRITS	8032-32-4	59%	100ppm	100ppm
TOLUENE	108-88-3	2%	100ppm	100ppm
GLYCOL ETHER EP SOLVENT	2807-30-9	1%	Not Estab.	Not Estab.

"PURSUANT TO TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA) AND 40 CFR PART 372, THIS PRODUCT CONTAINS OR MAY CONTAIN A TOXIC CHEMICAL IN A QUANTITY SUBJECT TO THE REPORTING REQUIREMENTS UNDER SECTION 313"

SECTION III PHYSICAL DATA

BOILING RANGE: 300-410 F. WEIGHT/GALLON: 7.3 lbs. VAPOR PRESSURE: 15mmHg@20C
VAPOR DENSITY: HEAVIER THAN AIR: XX LIGHTER THAN AIR: ____
EVAPORATION RATE: FASTER THAN ETHER: ____ SLOWER THAN ETHER: XX
PERCENT VOLATILE BY VOLUME: 63%
VOC: 525 GRAMS/LITER (LESS WATER)
REACTIVITY IN WATER: NIL
MELTING POINT: N/A pH: N/A
SOLUBILITY IN WATER: NIL
APPEARANCE: JET BLACK THIN LIQUID WITH A MILD PETROLEUM ODOR.
VISCOSITY: 50 SECONDS #4 FORD CUP

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION: OSHA: COMBUSTIBLE LIQUID
CLASS: 3
DOT: COMBUSTIBLE LIQUID
FLASH POINT: 100 F. TCC
LEL: 1.0%
UN NUMBER: 1263

EXTINGUISHING MEDIA: Foam, CO2, Dry Chemical, or Water Fog.
USE THE ABOVE OR ANY CLASS B EXTINGUISHING AGENT. WATER MAY BE UNSUITABLE AS AN EXTINGUISHING MEDIUM, BUT HELPFUL IN KEEPING ADJACENT CONTAINERS COOL.
SPECIAL FIREFIGHTING PROCEDURES: Firefighters and others exposed to vapors or products of combustion should wear self-contained breathing apparatus. Evacuate area of unprotected personnel. Wear protective clothing.
UNUSUAL FIRE AND EXPLOSION HAZARDS: Vapors may form an explosive mixture in air and may be ignited by sparks, pilot lights, etc. Closed containers may rupture when exposed to extreme heat.

SECTION V: HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE:

SKIN: THIS MATERIAL MAY CAUSE IRRITATION, SENSITIZATION, OR DEFATTING OF SKIN UPON PROLONGED OR REPEATED CONTACT.
INHALATION: EXCESSIVE EXPOSURE TO VAPORS OR SPRAY MIST CAN RESULT IN HEADACHE, DIZZINESS, NAUSEA AND LOSS OF CONSCIOUSNESS. SOME REPORTS HAVE ASSOCIATED REPEATED & PROLONGED OCCUPATIONAL OVEREXPOSURE TO SOLVENTS WITH PERMANENT BRAIN & NERVOUS SYSTEM DAMAGE.
EYES: THIS MATERIAL MAY BE AN EYE IRRITANT.

MEDICAL CONDITIONS PRONE TO AGGRAVATION BY EXPOSURE: NONE, WHEN USED IN ACCORDANCE WITH SAFE HANDLING INSTRUCTIONS. (SEE SECTION VIII)

EMERGENCY AND FIRST AID PROCEDURES:

SKIN: PROMPTLY WASH WITH SOAP AND WATER. REMOVE AND WASH ANY CONTAMINATED CLOTHING BEFORE REUSE.
EYES: FLUSH WITH LARGE QUANTITIES OF WATER FOR 15 MINUTES AND SEEK MEDICAL ATTENTION.
SWALLOWING: IF INGESTED DO NOT INDUCE VOMITING; KEEP PERSON WARM AND QUIET AND GET MEDICAL ATTENTION. ASPIRATION OF MATERIAL INTO LUNGS CAN CAUSE CHEMICAL PNEUMONITIS WHICH CAN BE FATAL.
INHALATION: REMOVE VICTIM TO FRESH AIR IMMEDIATELY. IF RESPIRATORY SYMPTOMS DEVELOP, SEEK MEDICAL ATTENTION AT ONCE.

PRIMARY ROUTE(S) OF ENTRY: INHALATION, DERMAL, INGESTION.

CARCINOGENICITY: THIS PRODUCT CONTAINS NO KNOWN CARCINOGENS IN REPORTABLE QUANTITIES AS DEFINED BY ACGIH, OSHA, NTP, IARC.

SECTION VI: REACTIVITY DATA

STABILITY: UNSTABLE:___ STABLE: XX HAZARDOUS POLYMERIZATION: MAY OCCUR:___ WILL NOT OCCUR: XX

HAZARDOUS DECOMPOSITION PRODUCTS: INCOMPLETE COMBUSTION CAN YIELD CARBON MONOXIDE AND TOXIC VAPORS.

CONDITIONS TO AVOID: HEAT, SPARKS & OPEN FLAME. IF PRODUCT CONTAINS ALUMINUM, MOISTURE IN CLOSED CONTAINERS WILL GENERATE HYDROGEN GAS.

INCOMPATIBILITY: AVOID CONTACT WITH STRONG OXIDANTS, ACIDS, BASES AND EPOXY HARDENERS UNDER UNCONTROLLED CONDITIONS.

SECTION VII: SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: REMOVE ALL SOURCES OF IGNITION. VENTILATE AREA. ABSORB SPILL WITH AN ABSORBENT MATERIAL SUCH AS SAWDUST, VERMICULITE OR SAND AND PLACE MATERIAL INTO A CLOSED CONTAINER. IF LARGE SPILL, DIKE AREA TO PREVENT THIS MATERIAL FROM ENTERING WATER SYSTEMS OR SEWERS. WEAR PROTECTIVE EQUIPMENT DURING CLEANUP.

WASTE DISPOSAL METHOD: IF DISCARDED, THIS MATERIAL AND CONTAINERS SHOULD BE TREATED AS HAZARDOUS WASTE BASED ON THE CHARACTERISTICS OF IGNITABILITY AS DEFINED UNDER FEDERAL RCRA REGULATIONS (40 CFR 261). DISPOSAL OF THIS MATERIAL OR ITS CONTAINERS REQUIRES COMPLIANCE WITH APPLICABLE LABELING, PACKAGING AND RECORDKEEPING STANDARDS.

WASTE DISPOSAL: DISPOSE IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL AGENCIES. GROUND HANDLING EQUIPMENT TO PREVENT SPARKS.
FOR FURTHER INFORMATION: CONTACT YOUR STATE OR LOCAL WASTE AGENCY OR THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY'S RCRA HOTLINE (1-800-424-9346 OR 1-202-382-3000).

SECTION VIII: SAFE HANDLING AND USE INFORMATION

KEEP OUT OF THE REACH OF CHILDREN

RESPIRATORY PROTECTION: A CANISTER-TYPE RESPIRATOR MUST BE WORN TO PREVENT THE INHALATION OF VAPORS OR SPRAY MIST WHEN THE TLV OR PEL IS EXCEEDED.

VENTILATION: GENERAL VENTILATION IS REQUIRED DURING NORMAL USE. LOCAL VENTILATION MAY BE REQUIRED DURING CERTAIN OPERATIONS TO KEEP EXPOSURE LEVEL BELOW THE LIMITS LISTED IN SECTION II OF THIS DATA SHEET.

PROTECTIVE GLOVES: CHEMICAL RESISTANT NITRILE, NEOPRENE OR RUBBER GLOVES REQUIRED.

EYE PROTECTION: WEAR FACE SHIELD OR CHEMICAL GOGGLES.

OTHER PROTECTIVE EQUIPMENT: WEAR PROTECTIVE CLOTHING TO PREVENT SKIN CONTACT. EYE WASH STATION AND SAFETY SHOWER SHOULD BE AVAILABLE.

HYGIENIC PRACTICES: WASH HANDS BEFORE EATING OR SMOKING.

SECTION IX: SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: AVOID PROLONGED OR REPEATED INHALATION OF HEATED VAPORS OR SPRAY MIST. KEEP AWAY FROM HEAT OR OPEN FLAME. THIS MATERIAL MAY CAUSE SENSITIZATION. DO NOT GET IN EYES, ON SKIN OR CLOTHING. DO NOT ALLOW CONTAMINATED CLOTHING TO CONTACT SKIN. DO NOT WELD ON FULL OR EMPTY CONTAINERS. KEEP CONTAINERS CLOSED WHEN NOT IN USE, AND PROPERLY LABELED.

SECTION X: SUPPLEMENTAL INFORMATION

THIS MATERIAL HAS BEEN CATEGORIZED AS HAVING THE FOLLOWING HAZARD(S) AS DEFINED BY SARA TITLE III REGULATIONS (40 CFR 370): ACUTE, FIRE

THE INFORMATION IN THIS DATA SHEET IS BELIEVED TO BE ACCURATE AND TRUE AT THE TIME OF PREPARATION OF THIS DOCUMENT. THIS IS NOT A WARRANTY OF PRODUCT OR PRODUCT SPECIFICATION. THE END-USER OF THIS PRODUCT IS ADVISED TO VERIFY IN ADVANCE THAT THE INFORMATION IN THIS SHEET IS CURRENT, APPLICABLE, AND SUITABLE TO THEIR CIRCUMSTANCES.

(solvent)

APPENDIX E

no longer being used

Records and documentation pertinent to the SWPPP are kept on-site in the Plant Engineer's office.

APPENDIX F

Monthly Site Inspection Checklist

INDUSTRIAL STORMWATER MONTHLY INSPECTION REPORT

Inspections must be conducted by a person with the knowledge and skills to assess conditions and activities that could impact stormwater quality at the facility, and evaluate the effectiveness of best management practices required by this permit. Retain a copy of the completed and signed form in accordance with Permit Condition S9.C.

FACILITY NAME:	**INSPECTION TIME:** **DATE:**

WEATHER INFORMATION:

- Description of Weather Conditions (e.g., sunny, cloudy, raining, snowing, etc.):

  _____

  _____

- Was stormwater (e.g., runoff from rain or snowmelt) flowing at outfalls and/or discharge areas shown on the Site Map during the inspection: ☐ **Yes** ☐ **No** ☐ **Comments:**

  _____

  _____

I. POTENTIAL POLLUTANT SOURCE AREA INSPECTION AND BEST MANAGEMENT PRACTICES EVALUATION

	Yes	No	Findings and Remedial Action Documentation: Describe any findings below and the schedule for remedial action completion including the date initiated and date completed or expected to be completed.
SWPPP and Site Map: Have a copy of the SWPPP and site map with you during the inspection so that you can ensure they are current and accurate. Use it as an aide in recording the location of any issues you identify during the inspection. • Is the Site Map current and accurate? • Is the SWPPP inventory of activities, materials and products current? Any new potential pollutant sources must be added to the map and reflected in the *SWPPP Facility Assessment & Tables 2, 2A, 3 and 5.*			

ehicle/Equipment Areas:	Yes	No	NA	Findings and Remedial Action Documentation:
Equipment cleaning: Check NA if not performed on-site. Skip section. Is equipment washed and/or cleaned only in designated areas? • Observe washing: Is all wash water captured and properly disposed of? ***Equipment fueling: Check NA if not performed on-site. Skip section.*** • Are all fueling areas free of contaminant buildup and evidence of chronic leaks/spills? • Are all chemical liquids, fluids, and petroleum products, on an impervious surface that is surrounded with a containment berm or dike that is capable of containing 10% of the total enclosed tank volume or 110% of the volume contained in the largest tank, whichever is greater? • Are structures in place to prevent precipitation from accumulating in containment areas? o If not, is there any water or other fluids accumulated within the containment area? o Note: If containment areas are not covered to prevent water from accumulating, the SWPPP must include a plan describing how accumulated water will be managed and disposed of.				

Equipment maintenance:	Yes	No	NA	Findings and Remedial Action Documentation:
• Are maintenance tools, equipment and materials stored under shelter, elevated and covered?				
• Are all drums and containers of fluids stored with proper cover and containment?				
• Are exteriors of containers kept outside free of deposits?				
• Are any vehicles and/or equipment leaking fluids? Identify leaking equipment.				
• Is there evidence of leaks or spills since last inspection? Identify and address.				
• Are materials, equipment, and activities located so that leaks are contained in existing containment and diversion systems (confine the storage of leaky or leak-prone vehicles and equipment awaiting maintenance to protected areas)?				
Add any additional site-specific BMPs:				
_____				
_____				
_____				
_____				

I. POTENTIAL POLLUTANT SOURCE AREA INSPECTION AND BEST MANAGEMENT PRACTICES EVALUATION				
Good Housekeeping BMPs:	Yes	No	NA	Findings and Remedial Action Documentation:
1. Are paved surfaces free of accumulated dust/sediment and debris?				
• Date of last quarterly vacuum/sweep _____				
• Are there areas of erosion or sediment/dust sources that discharge to storm drains?				
2. Are all waste receptacles located outdoors:				
• In good condition?				
• Not leaking contaminants?				
• Closed when is not being accessed?				
• External surfaces and area free of excessive contaminant buildup?				
3. Are the following areas free of accumulated dust/sediment, debris, contaminants, and/or spills/leaks of fluids?				
• External dock areas				
• Pallet, bin, and drum storage areas				
• Maintenance shop(s)				
• Equipment staging areas (loaders, tractors, trailers, forklifts, etc)				
• Around bag-house(s)				
• Around bone yards				
• Other areas of industrial activity:				
_____				
_____				
_____				
_____				
_____				
_____				
_____				
_____				

Spill Response and Equipment:	Yes	No	NA	Findings and Remedial Action Documentation:
Are spill kits available, in the following locations? • Fueling stations • Transfer and mobile fueling units • Vehicle and equipment maintenance areas Do the spill kits contain all the permit required items? • Oil absorbents capable of absorbing 15 gallons of fuel. • A storm drain plug or cover kit. • A non-water containment boom, a minimum of 10 feet in length with a 12 gallon absorbent capacity. • A non-metallic shovel. • Two five-gallon buckets with lids. Are contaminated absorbent materials properly disposed of?				

I. POTENTIAL POLLUTANT SOURCE AREA INSPECTION AND BEST MANAGEMENT PRACTICES EVALUATION

General Material Storage Areas:	Yes	No	NA	Findings and Remedial Action Documentation:
• Are damaged materials stored inside a building or another type of storm resistance shelter? • Are all uncontained material piles stored in a manner that does not allow discharge of impacted stormwater? • Are scrap metal bins covered? • Are outdoor containers covered?				

Stormwater BMPs and Treatment Structures: Visually inspect all stormwater BMPs and treatment structures devices, discharge areas infiltration and outfalls shown on the Site Map.	Yes	No	NA	Findings and Remedial Action Documentation:
• Are BMPs and treatment structures in good repair and operational? • Are BMPs and treatment structures free from debris buildup that may impair function? • The permit requires Permittees to clean catch basins when the depth of debris reaches 60% of the sump depth. In addition, the Permittee must keep the debris surface at least 6 inches below the outlet pipe. Based on this, do catch basins need to be cleaned? • Are berms, curbing or other methods used to divert and direct discharges adequate and in good condition?				

Observation of Stormwater Discharges:	Yes	No	NA	Findings and Remedial Action Documentation:
• Is the discharge free of floating materials, visible oil sheen, discoloration, turbidity, odor, foam or any other signs of contamination? • Water from washing vehicles or equipment, steam cleaning and/or pressure washing is considered process wastewater and is not allowed to comingle with stormwater or enter storm drains. Is process water comingling with stormwater or entering storm drains? • Illicit discharges include domestic wastewater, noncontact cooling water, or process wastewater (including leachate). Were any illicit discharges observed during the inspection?				

II. CORRECTIVE ACTION AND SWPPP MODIFICATIONS DESCRIPTIONS: Additional space to describe inspection findings and corrective actions if needed. Provide brief explanation of the general location and the rationale for the additional or different BMPs.

III. CERTIFICATION STATEMENTS AND SIGNATURES:

Inspector - Certification: This section must be completed by the person who conducted the site inspection prior to submitting this form to the person with signature authority (see Permit Condition G2) or a duly authorized representative of that person.

☐ The facility is in compliance with the terms and conditions of the SWPPP and the Industrial Stormwater General Permit.

☐ The facility is out of compliance with the terms and conditions of the SWPPP and the Industrial Stormwater General Permit. This report includes the remedial actions that must be taken to meet the requirements of the SWPPP and permit, including a schedule of implementation of the remedial actions.

"I certify that this report is true, accurate, and complete, to the best of my knowledge and belief."

Inspector's Name – Printed	**Inspector's Signature**	**Inspector's Title**	**Date**

Permittee – Certification:

☐ The facility is in compliance with the terms and conditions of the SWPPP and the Industrial Stormwater General Permit.

☐ The facility is out of compliance with the terms and conditions of the SWPPP and the Industrial Stormwater General Permit. This report includes the remedial actions that must be taken to meet the requirements of the SWPPP and permit, including a schedule of implementation of the remedial actions.

"I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

PRINTED NAME of person with **Signature Authority** (permit condition G2.A) or a **Duly Authorized Representative**[1]	SIGNATURE of person with **Signature Authority** (permit condition G2.A) or a **Duly Authorized Representative**[1]	**DATE**

[1]A person is duly authorized representative only if 1) the authorization is made in writing by a person described in Permit Condition G2.A and submitted to Ecology, and 2) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated *facility*, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.

APPENDIX G

Training Forms

ANNUAL STORMWATER TRAINING

INSTRUCTOR: DAN HEIMBIGNER (WHATCOM ENVIRONMENTAL)

DESCRIPTION: Annual stormwater training (Day/Swing) shift

DATE: 8/9/17

EMPLOYEE NAME:	EMPLOYEE #	SIGNATURE:	DATE:
Travis Pederson			8/9/17
Hawsley James	274		9/Aug/17
Jeff Gunderson	255		8-9-17
JOSE ZAMORA	175		8-9-17
Derrik Winters	272		8-9-17
Cliff Ackerson	268		8-9-17
Steve Carter	124		8-9-17
David R Wagner	182		8-9-17
Leif Salmonson	219		8-9-17
Chris Oppawal	257		8-9-17
Tom Galin	113		8-9-17
Fred Brown	250		8-9-17
Ruben Martinez	249		8-9-17
Tim Allen	273		08-09-17

ANNUAL STORMWATER TRAINING

INSTRUCTOR: Dan Heimbigner (WHATCOM ENVIRONMENTAL SVCS) **DATE** Aug 24, 2016

8/24/2016

DESCRIPTION: Annual stormwater training Day/Swing shift

EMPLOYEE NAME	EMP NO	SIGNATURE	DATE SIGNED
Travis Pederson			8/24/16
Derrik Seminoff	272	Derrik Seminoff	8/24/16
David R Wagner	186	David R Wagner	8-24-16
Jeff Anderson	255		
Clifford Robison	252		8-24-16
Cliff Robison	268	Cliff Robison	8-24-16
Steven Carter	124		8-24-16
Leif Salmonson	219		8-24-16
Robert Merrick	269		8-24-16
Ben Hamot	248		8-24-16
Fred Bishop	250	Fred Bishop	
Ruben Martinez	249		8-24-16

Annual Employee Training Record
Lister Chain and Forge

Topic: Annual Stormwater Training **Date:** June 4, 2015

Meeting Leader: Dan Heimbigner (Whatcom Environmental Services)

Items discussed include:

- An overview of the SWPPP's contents
- How employees make a difference in complying with the SWPPP and preventing contamination of stormwater
- Spill response procedures,

Attendee Name	Signature
Steve Carter	
Travis Pederson	
Jeff Gunderson	
José Zamora	
Derrik Seminoff	
Chris Oppenall	
Eric DiMuri	
Cliffton Roberson	
David Wagner	
W. Archer	
Ben Aamot	
Robert Merrick	
Ruben Martinez	
Tom Galvin	

Initial Stormwater Training
Employee Sign-In Sheet

Date	Employee Name	Employee Signature
3.12.2015	Travis Pederson	

TRAINING LED BY DAN HEIMBIGNER
OF WHATCOM ENVIRONMENTAL.
3-12-15

TRAINING LED BY:
DAN HEIMBIGNER (WHATCOM ENV. BIOMENTRIC)

Annual Stormwater Refresher Course June 18/14

Employee Sign-In Sheet

Date	Employee Name	Employee Signature
6/18/14	CHRIS NUÑEZ	
6/18/14	Leif Salmonson	
6/18/14	Dave Wagner	Dave R Wagner
6/18/14		
6-18-14	Jeff Anderson	
6-18-14	Steven Cater	
6-18-14	JOSE CAMPOS	
6-18-14		
6.18.14		RUBEN MARTINEZ
6/18/14	Fred Bishop	Fred Bishop
6-18-14	Ben Hamer	
6-18-14	TOM CALVIN	Tom Calvin
6-18-14	W. PITHER	

ANNUAL STORMWATER TRAINING JULY 10 2013

PRESENTED BY DAVID WESTERLAND

Leif Salmonson

Steve Carter

José Zamora

Clifton Roberson

David R Wagner

Eric D Muir

Christopher A. Oppewall

Wayne Pitter

Ronnie Doyle

Jeff Gunderson

Tom Galvin

Fred Tisdale

JULY 12, 2012

Annual Stormwater Training

Presented by Dave Weisterlund
Whatcom Environmental

NAME

Steve Carter
Cliff Osborne

JUNE 15/2011

ANNUAL STORMWATER REFRESHER COURSE

Attendance Roster

Date: June 15, 2011 **Training Program:**

NAME	SIGNATURE
Christopher A. Oppewall Chris	Oppewall
David Wagner	
Jeff Gunderson	
Leif A. Salmonson	
Jose Zamora	
Steven Carter	
Cliff Coburn	
Eric D Muri	
Ben Aamot	
TOM GALVIN	
Fred Bishop	
W. Pether	

Oct/2010

Annual Stormwater Refresher Course

Employee Sign-In Sheet

Date	Employee Name	Employee Signature
10-20-10	Darcy A Stremler	[illegible]
10-20-10	Christopher A. Oppewall	Chris Oppewall
10-20-10	RONNIE M. BOYLE	[illegible]
10-20-10	David R Wagner	David R Wagner
10-20-10	Leif Salmonson	[illegible]
10-20-10	Jeff Gunderson	[illegible]
10-20-10	Cliffton Robuson	[illegible]
10-20-10	Steve Carter	[illegible]
10-20-10	Cliff Coburn [illegible]	Cliff Coburn
10-20-10	[illegible]	[illegible]
10-20-10	J W. Pither	[illegible]
10-22-10	Ruben Martinez	Ruben Martinez
10-20-10	Ben [illegible]	Ben [illegible]
10-20-10	DEREK [illegible]	[illegible]
10-20-10	Lance Baker	[illegible]
10-20-10	TOM GALVIN	Tom Galvin

APPENDIX H

Stormwater Detention Pond Maintenance

Detention Ponds

Maintenance

General. Maintenance is of primary importance if detention ponds are to continue to function as originally designed. A local government, a designated group such as a homeowners' association, or some individual must accept the responsibility for maintaining the structures and the impoundment area. Formulate a specific maintenance plan outlining the schedule and scope of maintenance operations. Achieve debris removal in detention basins by using trash racks or other screening devices.

Design with maintenance in mind. Good maintenance will be crucial to successful use of the impoundment. Hence, build in provisions to facilitate maintenance operations into the project when it is installed. Maintenance must be a basic consideration in design and in determination of first cost. See Table 4.5.2 in Volume V for specific maintenance requirements.

Handle any standing water and sediments removed during the maintenance operation in a manner consistent with Appendix IV-G in Volume IV.

Vegetation. If a shallow marsh is established, then periodic removal of dead vegetation may be necessary. Since decomposing vegetation can release pollutants captured in the wet pond, especially nutrients, it may be necessary to harvest dead vegetation annually prior to the winter wet season. Otherwise the decaying vegetation can export pollutants out of the pond and also can cause nuisance conditions to occur. If harvesting is to be done in the wetland, have a wetland scientist prepare a written harvesting procedure and submitted it with the drainage design to the local government.

Sediment. Maintenance of sediment forebays and attention to sediment accumulation within the pond is extremely important. Continually monitor sediment deposition in the basin. Owners, operators, and maintenance authorities should be aware that significant concentrations of metals (e.g., lead, zinc, and cadmium) as well as some organics such as pesticides, may be expected to accumulate at the bottom of these treatment facilities. Regularly conduct testing sediment, especially near points of inflow, to determine the leaching potential and level of accumulation of potentially hazardous material before disposal.

4.6 Maintenance Standards for Drainage Facilities

The facility-specific maintenance standards contained in this section are intended to be conditions for determining if maintenance actions are required as identified through inspection. They are not intended to be measures of the facility's required condition at all times between inspections. In other words, exceedence of these conditions at any time between inspections and/or maintenance does not automatically constitute a violation of these standards. However, based upon inspection observations, the inspection and maintenance schedules shall be adjusted to minimize the length of time that a facility is in a condition that requires a maintenance action.

Table 4.5.2 Maintenance Standards

No. 1 – Detention Ponds

Maintenance Component	Defect	Conditions When Maintenance Is Needed	Results Expected When Maintenance Is Performed
General	Trash & Debris	Any trash and debris which exceed 1 cubic feet per 1,000 square feet. In general, there should be no visual evidence of dumping. If less than threshold all trash and debris will be removed as part of next scheduled maintenance.	Trash and debris cleared from site.
	Poisonous Vegetation and noxious weeds	Any poisonous or nuisance vegetation which may constitute a hazard to maintenance personnel or the public. Any evidence of noxious weeds as defined by State or local regulations. (Apply requirements of adopted IPM policies for the use of herbicides).	No danger of poisonous vegetation where maintenance personnel or the public might normally be. (Coordinate with local health department) Complete eradication of noxious weeds may not be possible. Compliance with State or local eradication policies required
	Contaminants and Pollution	Any evidence of oil, gasoline, contaminants or other pollutants (Coordinate removal/cleanup with local water quality response agency).	~~No contaminants or pollutants present.~~
	Rodent Holes	Any evidence of rodent holes if facility is acting as a dam or berm, or any evidence of water piping through dam or berm via rodent holes.	Rodents destroyed and dam or berm repaired. (Coordinate with local health department; coordinate with Ecology Dam Safety Office if pond exceeds 10 acre-feet.)

No. 1 – Detention Ponds

Maintenance Component	Defect	Conditions When Maintenance Is Needed	Results Expected When Maintenance Is Performed
	Beaver Dams	Dam results in change or function of the facility.	Facility is returned to design function. (Coordinate trapping of beavers and removal of dams with appropriate permitting agencies)
	Insects	When insects such as wasps and hornets interfere with maintenance activities.	Insects destroyed or removed from site. Apply insecticides in compliance with adopted IPM policies
	Tree Growth and Hazard Trees	Tree growth does not allow maintenance access or interferes with maintenance activity (i.e., slope mowing, silt removal, vactoring, or equipment movements). If trees are not interfering with access or maintenance, do not remove If dead, diseased, or dying trees are identified (Use a certified Arborist to determine health of tree or removal requirements)	Trees do not hinder maintenance activities. Harvested trees should be recycled into mulch or other beneficial uses (e.g., alders for firewood). Remove hazard Trees
Side Slopes of Pond	Erosion	Eroded damage over 2 inches deep where cause of damage is still present or where there is potential for continued erosion. Any erosion observed on a compacted berm embankment.	Slopes should be stabilized using appropriate erosion control measure(s); e.g., rock reinforcement, planting of grass, compaction. If erosion is occurring on compacted berms a licensed civil engineer should be consulted to resolve source of erosion.
Storage Area	Sediment	Accumulated sediment that exceeds 10% of the designed pond depth unless otherwise specified or affects inletting or outletting condition of the facility.	Sediment cleaned out to designed pond shape and depth; pond reseeded if necessary to control erosion.
	Liner (If Applicable)	Liner is visible and has more than three 1/4-inch holes in it.	Liner repaired or replaced. Liner is fully covered.
Pond Berms (Dikes)	Settlements	Any part of berm which has settled 4 inches lower than the design elevation. If settlement is apparent, measure berm to determine amount of settlement. Settling can be an indication of more severe problems with the berm or outlet works. A licensed civil engineer should be consulted to determine the source of the settlement.	Dike is built back to the design elevation.
	Piping	Discernable water flow through pond berm. Ongoing erosion with potential for erosion to continue. (Recommend a Goethechnical engineer be called in to inspect and evaluate condition and recommend repair of condition.	Piping eliminated. Erosion potential resolved.

No. 1 – Detention Ponds

Maintenance Component	Defect	Conditions When Maintenance Is Needed	Results Expected When Maintenance Is Performed
Emergency Overflow/ Spillway and Berms over 4 feet in height.	Tree Growth	Tree growth on emergency spillways creates blockage problems and may cause failure of the berm due to uncontrolled overtopping. Tree growth on berms over 4 feet in height may lead to piping through the berm which could lead to failure of the berm.	Trees should be removed. If root system is small (base less than 4 inches) the root system may be left in place. Otherwise the roots should be removed and the berm restored. A licensed civil engineer should be consulted for proper berm/spillway restoration.
	Piping	Discernable water flow through pond berm. Ongoing erosion with potential for erosion to continue. (Recommend a Goethechnical engineer be called in to inspect and evaluate condition and recommend repair of condition.	Piping eliminated. Erosion potential resolved.
Emergency Overflow/ Spillway	Emergency Overflow/ Spillway	Only one layer of rock exists above native soil in area five square feet or larger, or any exposure of native soil at the top of out flow path of spillway. (Rip-rap on inside slopes need not be replaced.)	Rocks and pad depth are restored to design standards.
	Erosion	See "Side Slopes of Pond"	

APPENDIX I

SWPPP certification forms

SWPPP CERTIFICATION FORM

The Permittee shall use this form to sign and certify that the Stormwater Pollution Prevention Plan (SWPPP) is complete, accurate and in compliance with Conditions S3 and S8 of the Industrial Stormwater General Permit.

- A SWPPP certification form needs to be completed and attached to all SWPPPs.
- Each time a Level 1, 2, or 3 Corrective Action is required, this form needs to be re-signed and re-certified by the Permittee, and attached to the SWPPP.

Is this SWPPP certification in response to a Level 1, 2 or 3 Corrective Action? ☐ Yes ☒ No

If Yes: Type of Corrective Action?: ☐ Level 1 ☐ Level 2 ☐ Level 3*

Date SWPPP update/revision completed: 1/20/20

Briefly describe SWPPP Update (use backside, if necessary):

Updated SWPPP to comply with new Permit effective January 1, 2020.

***Note:** For Level 3 Corrective Actions, a *Qualified Industrial Stormwater Professional* must review the revised SWPPP, and sign and certify below, in accordance with Condition S8.D.2.:
"The Permittee has made appropriate revisions to the SWPPP to include additional Treatment BMPs with the goal of achieving the applicable benchmark value(s) in future discharges. Based on my review of the SWPPP, discharges from the facility are reasonably expected to meet the ISGP benchmarks upon implementation."

Qualified Industrial Stormwater Professional's Printed Name	Title
Qualified Industrial Stormwater Professional's Signature	Date

"I certify under penalty of law that this SWPPP and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate information to determine compliance with the Industrial Stormwater General Permit. Based on my inquiry of the person or persons who are responsible for stormwater management at my facility, this SWPPP is, to the best of my knowledge and belief, true, accurate, and complete, and in full compliance with Permit Conditions S3 and S8, including the correct Best Management Practices from the applicable Stormwater Management Manual. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Travis Pederson	Plant manager
Operator's Printed Name *	Title
	1/27/2020
Operator's Signature *	Date

* Federal regulations require this document to be signed in accordance with Condition G2.

SWPPP Certification Form

The Permittee shall use this form to sign and certify that the Stormwater Pollution Prevention Plan (SWPPP) is complete, accurate and in compliance with Conditions S3 and S8 of the Industrial Stormwater General Permit.

- A SWPPP certification form needs to be completed and attached to all SWPPPs.
- Each time a Level 1, 2, or 3 Corrective Action is required, this form needs to be re-signed and re-certified by the Permittee, and attached to the SWPPP.

Is this SWPPP certification in response to a Level 1, 2 or 3 Corrective Action? ☐Yes ☒No

If Yes: Type of Corrective Action?: ☐Level 1 ☐Level 2 ☐Level 3*

Date SWPPP update/revision completed:

Briefly describe SWPPP Update (use backside, if necessary):

***Note:** For Level 3 Corrective Actions, a *Qualified Industrial Stormwater Professional* must review the revised SWPPP, and sign and certify below, in accordance with Condition S8.D.2.: *"The Permittee has made appropriate revisions to the SWPPP to include additional Treatment BMPs with the goal of achieving the applicable benchmark value(s) in future discharges. Based on my review of the SWPPP, discharges from the facility are reasonably expected to meet the ISGP benchmarks upon implementation."*

Qualified Industrial Stormwater Professional's Printed Name _____ Title _____

Qualified Industrial Stormwater Professional's Signature _____ Date _____

"I certify under penalty of law that this SWPPP and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate information to determine compliance with the Industrial Stormwater General Permit. Based on my inquiry of the person or persons who are responsible for stormwater management at my facility, this SWPPP is, to the best of my knowledge and belief, true, accurate, and complete, and in full compliance with Permit Conditions S3 and S8, including the correct Best Management Practices from the applicable Stormwater Management Manual. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Bruce L. Wilson — Operator's Printed Name *

V.P. Operations — Title

Operator's Signature *

5-8-15 — Date

* Federal regulations require this document to be signed in accordance with Condition G2.

SWPPP CERTIFICATION FORM

The Permittee shall use this form to sign and certify that the Stormwater Pollution Prevention Plan (SWPPP) is complete, accurate and in compliance with Conditions S3 and S8 of the Industrial Stormwater General Permit.

- A SWPPP certification form needs to be completed and attached to all SWPPPs.
- Each time a Level 1, 2, or 3 Corrective Action is required, this form needs to be re-signed and re-certified by the Permittee, and attached to the SWPPP.

Is this SWPPP certification in response to a Level 1, 2 or 3 Corrective Action? ☐Yes ☒No

If Yes:

- Type of Corrective Action?: ☐Level 1 ☐Level 2 ☐Level 3
- Date SWPPP update/revision completed: _____

"I certify under penalty of law that this SWPPP and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate information to determine compliance with the Industrial Stormwater General Permit. Based on my inquiry of the person or persons who are responsible for stormwater management at my facility, this SWPPP is, to the best of my knowledge and belief, true, accurate, and complete, and in full compliance with Permit Conditions S3 and S8, including the correct Best Management Practices from the applicable Stormwater Management Manual. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Bruce L. Wilson
Operator's Printed Name *

V.P. Operations
Title

Operator's Signature *

7-25-13
Date

* Federal regulations require this document to be signed as follows:
For a corporation, by a principal executive officer of at least the level of vice president;
For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
For a municipality, state, federal, or other public facility, by either a principal executive officer or ranking elected official.

This document shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above and submitted to the Ecology.
2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.

Changes to authorization. If an authorization under number 2 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of number 2 above shall be submitted to Ecology prior to, or together with, any reports, information, or applications to be signed by an authorized representative.

[Source: Industrial Stormwater General Permit – October 21, 2009—Appendix 3, page59]

SWPPP CERTIFICATION FORM

The Permittee shall use this form to sign and certify that the Stormwater Pollution Prevention Plan (SWPPP) is complete, accurate and in compliance with Conditions S3 and S8 of the Industrial Stormwater General Permit.

- A SWPPP certification form needs to be completed and attached to all SWPPPs.
- Each time a Level 1, 2, or 3 Corrective Action is required, this form needs to be re-signed and re-certified by the Permittee, and attached to the SWPPP.

Is this SWPPP certification in response to a Level 1, 2 or 3 Corrective Action? ☐Yes ☐No

If Yes:

- Type of Corrective Action?: ☐Level 1 ☐Level 2 ☐Level 3
- Date SWPPP update/revision completed: _____

"I certify under penalty of law that this SWPPP and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate information to determine compliance with the Industrial Stormwater General Permit. Based on my inquiry of the person or persons who are responsible for stormwater management at my facility, this SWPPP is, to the best of my knowledge and belief, true, accurate, and complete, and in full compliance with Permit Conditions S3 and S8, including the correct Best Management Practices from the applicable Stormwater Management Manual. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Operator's Printed Name *	Title
Operator's Signature *	Date

* Federal regulations require this document to be signed as follows:
For a corporation, by a principal executive officer of at least the level of vice president;
For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
For a municipality, state, federal, or other public facility, by either a principal executive officer or ranking elected official.

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