APPENDIX H

NPDES Permit Application

This appendix consists of three elements, which are described below.

Stormwater: Operations

The Applicant has determined that there will be no stormwater discharges associated with the operations of the Starbuck Power Project (SPP) that would require a National Pollutant Discharge Elimination System (NPDES) permit. The first part of Appendix H is a letter and an application to the Washington State Department of Ecology requesting confirmation that the stormwater permit is not required for operations. Ecology (Michael Hepp, Eastern Regional office) asked the Applicant to submit such a letter with the stormwater applications for Ecology's review so as to obtain a response from Ecology as to whether there is a need for stormwater permits.

After Ecology reviews the letter and stormwater permit applications, it is anticipated that Ecology will provide a written response as to whether an NPDES stormwater permit is needed for either construction or operation, and whether an NPDES permit is required for operations.

Stormwater: Construction

The Applicant may need coverage under the NPDES General Permit for Stormwater Associated with Construction Activities. The second part of Appendix H is a completed application form.

Stormwater Pollution Prevention Plan

The Applicant has prepared a Stormwater Pollution Prevention Plan (SWPPP), which is the third part of Appendix H.

Letter and Application to Ecology Regarding Stormwater Permit for Operations

CH2M HILL
825 NE Multnomah
Suite 1300
Portland, OR
97232-2146
Tel 503.235.5000
Fax 503.235.2445

May 30, 2001

Mr. Mike Hepp
Department of Ecology
Eastern Regional Office
4601 N. Monroe, Suite 300
Spokane, WA 99205-1295

Dear Mike:

Subject: **Applications for NPDES General Permit for Stormwater Associated with Industrial Activity and NPDES General Permit for Stormwater Associated with Construction Activity**

Starbuck Power Company, L.L.C. (SPC), of Bellevue, Washington, is proposing to build a 1,200-megawatt (MW), natural gas-fueled, combustion-turbine power plant. The Starbuck Power Project (SPP) is located about 6 miles northwest of the Town of Starbuck in Columbia County, Washington. The site is located on top of a gravel bar, approximately 170 feet above normal river elevation and approximately 350 feet back from the shoreline of the Snake River. The terrain in the area of the plant site slopes to the south away from the river.

SPC has determined that there will be no discharges associated with the operation or construction of the SPP that would require a National Pollutant Discharge Elimination System Permit (NPDES) permit. During construction, all run-off from the site during construction and operations will be routed to a stormwater pond for percolation into the soil and to evaporate.

This letter seeks confirmation from the Washington State Department of Ecology that a stormwater permit for operations is not required and to determine if a stormwater permit is necessary during construction.

In the event that Ecology determines that coverage is required, applications for the NPDES General Permit for Stormwater Associated with Construction Activity and for the NPDES General Permit for Stormwater Associated with Industrial Activity are enclosed. A Stormwater Pollution Prevention Plan (SWPPP) has been prepared for the SPP and will be

submitted to the Energy Facility Site Evaluation Council (EFSEC) as part of the Application for Site Certification.

We look forward to receiving your decision.

Sincerely,
CH2M HILL

Marlena Guhlke
Project Manager

Enclosures:

Application for NPDES General Permit for Stormwater Associated with Construction Activities
Application for NPDES General Permit for Industrial Activities

Application for NPDES General Permit for Stormwater Associated with Construction Activity

NPDES Stormwater Pollution Prevention Plan for Stormwater Discharges Associated with Construction Activities

Prepared for

Starbuck Power Company, L.L.C.
Starbuck Power Project
Columbia County, Washington

Prepared by

Black & Veatch
Project No. 096344
February 2000

CH2MHILL

July 2001

Printed on Recycled and Recyclable Paper

Stormwater Pollution Prevention Plan Contents

Section **Page**

Section **Page**

Appendixes (Forms)

Attachments

Figure

Signatory Authorization

I, _____, Project Manager of Starbuck Power Company, L.L.C., hereby authorize the Starbuck Power Project Construction Manager, as my representative, to sign all reports required by this National Pollutant Discharge Elimination System (NPDES) and State Discharge General Permit for Stormwater Discharges Associated with Construction Activities.

Signed: _____

Date: _____

Certification Statement

I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate, and complete to the best of my knowledge and belief.

Signed: _____
Starbuck Power Project Construction Manager

Date: _____

Record of Plan Amendments

Amendment Number	Date of Amendment	Description of Amendment

1.0 Purpose of Plan

The purpose of this Stormwater Pollution Prevention Plan (SWPPP) is to implement best management practices (BMPs) to minimize erosion and sediments from rainfall runoff at the Starbuck Power Project (SPP) construction site and to identify, reduce, eliminate, or prevent the pollution of stormwater. This plan has been prepared in accordance with the requirements of the National Pollutant Discharge Elimination System (NPDES), State Waste Discharge General Permit for Stormwater Discharges associated with construction activities, and supporting guidance documents.

2.0 Site Evaluation

The following sections describe existing conditions at the site and list the controlling conditions considered in the stormwater management design.

2.1 Topography and Drainage

The generation plant site consists of approximately 100 acres of land, of which approximately 40 acres will be developed for the generation plant and an additional 10 acres will be disturbed during the construction process. The 100 acres are located between the Snake River and State Route (SR)-261 approximately 6 miles northwest of Starbuck, Washington. The overall site is bisected by two 500-kilovolt (kV) overhead lines, and the generation plant will be located on the southeast side of these lines.

The generation plant site can be characterized as a moderately to steeply sloped area, generally from north to south. The highest elevations are located near the bank of the Snake River and beneath the existing overhead power lines (and the location of a proposed substation) to the north, and the lowest elevations are near the south end of the site. The area to be improved for the generation plant is relatively flat, with the severity of slopes increasing to the southeast. Elevations in the area of the proposed generation plant vary from 720 feet above mean sea level (msl) in the north to 690 msl in the south. To the east, elevations reach 650 feet msl in the area of the Columbia County Grain Growers elevator. A project location map is provided in Figure 1.

The improved generation plant site will be generally graded to a single major elevation of 708 feet msl in the area under and around the generation plant. Finished terrain in the substation will be allowed to slope up from this elevation to the higher elevations near the river. Similarly, the area south of the road loop around the generation plant will be sloped from 708 feet msl to near the existing grade north of SR-261. The improved site will be accessed from SR-261 via two new driveways that enter the site from the south. A complete road loop will be provided around the improved site area, with laterals to specific areas inside the plant as required. No permanent roads are planned outside the plant road loop.

During construction, it is expected that the higher ground to the east and west of the improved site will be used as temporary fabrication and laydown areas. More steeply sloped areas to the south are less likely to be used for laydown. Temporary roads to this area will be provided. Onsite areas used for temporary laydown and fabrication yards are intended to be restored to preconstruction conditions after completion of construction.

The northwest portion of the site (4 to 5 acres out of the approximately 50 acres north of the Bonneville Power Administration transmission lines) will be used temporarily for parking for construction workers. It will also be the location of an onsite well.

2.2 Soils

Only one near-surface soil series exists at the generation plant site; the *Soil Survey of Columbia County Area, Washington* (USDA, 1973) identifies it as the Stratford soil series. The Stratford series consists of well-drained, very stony silt loams that are underlain by sand, gravel, cobblestones, and boulders at a depth of 20 to 40 inches below ground surface (bgs). Permeability of the Stratford soil series is dependent upon the soil texture encountered. The soil survey indicates that, from the ground surface to approximately 30 inches bgs, the gravelly and silty loams exhibit an infiltration rate of 0.63 to 2.0 inches per hour. Between 30 and 60 inches bgs, the loose coarse-sand gravels exhibit an infiltration rate greater than 20 inches per hour.

To the north of the generation plant site and immediately adjacent to the Snake River is a narrow band of soil identified as Terrace escarpments. This soil series consists of sandy, cobbly, and bouldery alluvium, existing on very steep, eroded fronts or terraces.

Borings conducted at the generation plant site indicate that the subsurface conditions consist of two relatively thick layers of gravel, underlain by basalt bedrock (CH2M HILL, 2001). The upper layer of gravel extends from the surface to 150 feet bgs in the northern portion of the site and to 115 feet bgs toward the southeast. This layer consists of poorly graded gravels, cobbles, and boulders with traces of sand and silt. It is classified by the Unified Soil Classification System (USCS) as GP to GM. The lower layer starts at the bottom of the upper gravel layer and is assumed to extend down to basalt bedrock. This layer is distinguished from the upper layer by its higher content of fine-grained material and is classified by the USCS as GM.

2.3 Climate

Columbia County is located in southeastern Washington State in the Columbia/Snake River Basin. Summers are warm to hot, and winters are relatively mild, considering the latitude. The average year-round temperature is approximately 50 degrees Fahrenheit (°F). Temperatures above 95°F are most likely to occur in June and July, although temperatures in excess of 100°F have been recorded anywhere between May and September. The absolute minimum and maximum temperatures measured in the area are 25 and +114°F, respectively. The average monthly precipitation ranges from 0.6 inch in July to 1.5 inches in May. The total average annual precipitation in the area is 14.3 inches, with a maximum annual precipitation of 18.6 inches. Maximum annual precipitation in a 24-hour period is 1.7 inches.

2.4 Runoff Water Quality

No surface water quality data are available for the generation plant site. However, runoff may contain some suspended solids.

Fig 1
Project Location Map

Application for
Site Certification
Starbuck Power Project
Starbuck, Washington

Inset

WASHINGTON

Inset

Whitman County

Columbia County

Snake R.

Site Property

261

N

500 0 500 Feet

Whitman Co.
Columbia Co.

Snake River

Columbia Co.
Grain Growers

600

700

800

900

Legend

- Proposed Site Property
- Facility Buildings
- Facility Ponds
- Septic Tank and Drainfield
- Other Buildings
- Proposed Facility
- Facility Roads
- Facility Fence
- Proposed Gas Lateral
- PG&E "A" Gas Pipeline
- Transmission Lines
- State Routes (SR)
- Secondary Roads
- Union Pacific Railroad
- Contours 100 Foot

2.5 Receiving Waters

Currently, site runoff flows primarily toward the southeast end of the site. The high permeability of the soil in the area makes surface runoff flow to the Snake River unlikely under current conditions.

2.6 Design Description and Controlling Requirements

The generation plant stormwater collection and treatment system is designed to collect and infiltrate to groundwater all stormwater falling on the developed areas onsite. Runoff from undeveloped areas disturbed by construction is also to be collected and allowed to infiltrate. Runoff from undeveloped areas not disturbed by construction, as well as runoff from disturbed areas returned to their preconstruction state after construction is completed, will be allowed to flow and dissipate unchanged from the preconstruction conditions.

There are no surface waters in or near the operational area of the generation plant site. The main site area of the plant is divided into three primary drainage areas for purposes of runoff design (see Figure 2.2-13). Drainage Area 1 consists of the substation on the northern portion of the site. Drainage Area 2 contains the area east and south of the Block 2 steam turbine building, including the area beneath the Block 2 air-cooled condenser. Drainage Area 3 is the southern half of the developed site, including the remainder of the power block, the Block 1 air-cooled condenser and common equipment areas.

A fourth and fifth area, Drainage Areas 4a and 4b, will remain undeveloped but will be disturbed during construction, either by installation of the tile field or during construction laydown. Area 4A lies west of the Block 1 air-cooled condenser, and Area 4B lies east of the Block 2 air-cooled condenser. Areas 4a and 4b are intended to be returned to their preconstruction state after construction is complete, and runoff will be collected and routed to the stormwater pond as part of the stormwater management system. On the basis of results of the preliminary runoff calculations for a combination of Drainage Areas 1, 2, 3, 4a, and 4b, the holding volume of the stormwater pond was determined to be 4 acre-feet. Details of the preliminary grading and drainage for the site are included on the Site Conceptual Grading Plan.

The runoff from the five areas described above will be routed to the single stormwater pond located south of the Block 2 air-cooled condenser in the lowest elevation area of the developed site. The collected stormwater will be allowed to infiltrate into the soil. In this manner, no runoff from the five areas will leave the site as surface runoff. Runoff from the undeveloped and undisturbed areas onsite will flow and dissipate unchanged from the preconstruction conditions.

Runoff from the northern part of Drainage Area 1, including the north and east perimeter road and substation area, will surface flow to a central shallow swale located in the substation. The swale will slope from west to east and drain to the headwall entrance of an underground, reinforced-concrete pipeline located east of the substation. The underground pipeline will turn south, run beneath the elevated Block 2 air-cooled condenser, and empty into the stormwater pond located south of the loop road.

In Drainage Area 1, the substation area will be surfaced with a crushed-rock base that allows infiltration into the soil below. Grading in this area will result in a more level terrain compared with the existing terrain, and gently sloped to allow more infiltration and slower runoff than now occur. The equipment in the substation will be gas insulated (not oil insulated, so it will have no spillable oil) and supported on small concrete foundations surrounded by the crushed-rock surface. Thus, there will be no significant impervious surfaces and no potentially oil-contaminated surfaces in these two areas. Because postconstruction runoff rates from Drainage Area 1 are expected to be similar to the existing runoff rates, an additional stormwater pond is not planned for this area. General drainage in the substation area will be to the east, and excess runoff not immediately infiltrated will be allowed to drain to the perimeter road east of the substation and will be directed to the stormwater pond by a culvert. A small swale draining to the southeast will be located north of the north perimeter road to direct runoff from the ridge around the substation area to the stormwater pond.

Drainage Area 2, the area within the loop road east and south of the Block 2 steam turbine building, will drain to a culvert located at the southwest corner of the Block 2 air-cooled condenser. The culvert will be installed beneath the south loop road and will drain into the stormwater pond to the south.

Runoff from Drainage Area 3, which includes most of the buildings, equipment, and other impervious surfaces in the generation plant, will be routed to an underground stormwater collection system. Stormwater will enter the system through roof drains and piping (buildings), area drains (tanks and outdoor equipment), and catch basins and curb inlets (paved areas). The collected runoff will be routed in underground lateral piping to a central storm sewer main located south of the power block. The sewer main will slope from west to east and drain into the stormwater pond.

Impervious surfaces in Drainage Area 3 include the Generation Building, the Block 1 air-cooled condenser, and access roads. Parking in this area will be covered with gravel and not paved, and electric transformers will be covered. The stormwater pond (designed for a 24-hour/100-year storm event) is designed to retain the site runoff from the roofs in these areas prior to infiltration into soils.

Precipitation falling on the generation plant's major structures will be collected in gutters at the roof edges and routed to drain piping that connects to a common underground stormwater collection system, which will convey stormwater to the stormwater pond. There will be no heating, ventilating, or air-conditioning (HVAC) units located on the roofs, which eliminates the concern of oil releases from these units into stormwater collected from the roofs.

Runoff from paved roads and the graveled parking area may have oil drippings from vehicles, but the quantity of oil released is not enough to warrant an oil-water separator prior to the stormwater pond. Water will be routed to ditches, where infiltration will occur, and excess water will flow to the stormwater pond. The oil spill containment areas around the covered transformers and the unloading and spill collection areas at the ammonia storage facility will be visually inspected after a storm event and weekly to detect any oily sheen or ammonia odor. If an oily sheen or odorous material is detected, then the water will be tested for oil or ammonia before stormwater is released to the stormwater pond. If

contamination is suspected, the water will be pumped out by a licensed contractor and disposed of offsite at an approved disposal site. Stormwater will be managed in accordance with 463-38 WAC.

Runoff from the two disturbed areas will also be routed to the common stormwater pond. Stormwater in Drainage Area 4a will surface flow to a catch basin at the west end of the underground storm sewer main serving Drainage Area 3. Collected stormwater will flow with the Drainage Area 3 runoff to the stormwater pond. Stormwater in Drainage Area 4b will flow into an existing shallow surface swale located east of the east perimeter fence. The existing swale will drain into the stormwater pond through a new culvert included in the north wall of the basin.

3.0 Site Construction Plan

The following sections describe the generation plant construction plan.

3.1 Construction Activities

The generation plant site will be developed to support an industrial facility (the generation plant). The site will require earthwork to support the generation plant structures. Soil-disturbing activities will include grubbing, rough grading, excavating, filling, tile field installation, and final grading. The generation plant site will have two entrances from SR-261, both on the south side. There will be a loop road around the main generation plant structures, and additional branch access from the loop road will be provided to each of the structures where required. The generation plant site entrance and access roads will be aggregate-surfaced during construction. The two entrances, loop road, and drives within the loop will be paved with asphalt near the end of the scheduled construction. The substation area, gas conditioning station, and some equipment and access areas will be aggregate-surfaced after major construction activities are completed. Additional access roads to the laydown and fabrication areas in Area 4 will be unpaved, with a crushed rock surface added if necessary. The laydown areas themselves, if necessary, will be aggregate-surfaced for stability and to provide a firm working surface. After construction, the laydown and fabrication areas will be returned to their preconstruction state and seeded with grasses common to the area.

A record of the generation plant site construction activities must be maintained as part of this plan. Appendix B includes a form and instructions to record such information on an ongoing basis. Completed construction activity record forms shall be kept in Attachment B of the SWPPP.

3.2 Construction Sequence

The site will be cleared and grubbed around permanent structures and in other areas required outside the loop road. The generation plant will be constructed in the following general sequence:

1. Construct the stormwater pond.
2. Install temporary site security fencing.

3. Install silt fences on lower elevation boundaries of the site, excavate and remove boulders, spoil unsuitable material and boulders onsite as nonstructural fill, and excavate the stormwater pond and install surrounding embankments.
4. Install structural fill, grade the site to rough grade elevation, and construct the underground portion of the stormwater drainage system.
5. Install the tile field and septic tank for sanitary wastewater.
6. Construct the roadway base.
7. Construct the major foundations for the equipment and structures.
8. Construct the underground utilities and process wastewater infiltration basin.
9. Install the equipment and erect structures.
10. Construct the finish road surfaces.
11. Grade the site to finish grade elevation.
12. Install the final stabilization (seeding and erosion control) of the site.

4.0 Stormwater Management System

The stormwater management system was designed in accordance with Washington Department of Ecology guidelines for stormwater associated with construction activities. Control of site runoff by retention and percolation will be the primary means of stormwater management. Temporary stormwater controls will be installed before ground is broken, and permanent stormwater controls will be installed when the rough grading of the site has been completed.

4.1 Construction of Stormwater Management System

To minimize erosion and transport of sediment by stormwater, erosion and sediment control measures required by the *Stormwater Management Manual for the Puget Sound Basin* (Washington Department of Ecology, 1992) will be implemented. Stormwater control measures are described below and shown on the Site Conceptual Erosion Control Plan in Attachment A.

The Construction Manager is responsible for revising the Erosion and Sediment Control Plan in Attachment A if the location or types of control measures are changed in the field.

4.2 Runoff Coefficient

The runoff coefficient for the project site was determined using the soil type and vegetative cover for existing and proposed conditions.

4.3 Plant Site

The same stormwater management system will be used for construction and project operation. Before the underground stormwater collection system is installed, surface ditches and swales will be used to direct runoff from disturbed areas into the stormwater pond.

Once the system is installed, stormwater runoff from disturbed areas will be directed to permanent inlets and ditches, which will convey stormwater to the stormwater pond.

The site stormwater management plan has been designed to use a stormwater system in the power block area. Silt fence protection will be provided at each inlet to remove silts and help prevent erosion. Vegetation may be provided in downstream areas to further reduce pollutants. In the substation, gas conditioning station, and undeveloped areas, grades, drainage patterns, and riprap will be designed to slow flow rates, dissipate water energy, and prevent erosion while directing runoff to the stormwater pond.

4.3.1 Stabilization Methods

Temporary and permanent stabilization methods will be used at the generation plant site: (1) preserving existing vegetation where possible and (2) disturbing only the area needed for project construction. From October 1 to April 30, disturbed portions of the site will be stabilized within 2 days after construction activity temporarily or permanently ceases. From May 1 to September 30, disturbed portions of the site will be stabilized within 7 days after construction activity temporarily or permanently ceases. Stabilization practices may include temporary or permanent seeding, mulching, geotextiles, sodding, or aggregate surfacing. Site access facilities, such as entrances, exits, and parking areas, will be surfaced with aggregate to reduce sediment tracking.

4.3.2 Structural Practices

Temporary and permanent structural devices to divert, store, or limit runoff from disturbed areas will be used on the project site. Such devices will include silt fences, sediment traps (catch basins), straw bale dikes, storm sewers, inlet protection, culvert inlet/outlet protection (rock or riprap), and a stormwater pond as appropriate. The location and use of such devices are described below and depicted on the Conceptual Erosion Control Plan in Attachment A.

The two methods that will be used most often on the project site for control of erosion and runoff during construction will be temporary swales leading to the main stormwater pond and perimeter silt fences. Swales will be seeded with grass and lined with stone, concrete, or another appropriate lining system. Where required, swales will include obstructions to the flow of water, such as weirs, straw bales, or washboards, to slow the stormwater velocity and allow settling out of suspended soil. Stormwater control measures intended for use in the permanent installation include permanent swales, a stormwater pond, firmly established ground cover, and an underground stormwater collection system.

Because the main project area is located on the highest ground in the area, very little runoff from surrounding areas is expected to flow into the developed area. Thus, the runoff will consist primarily of that stormwater falling directly on the disturbed area. Temporary swales will be used to direct and slow runoff flows to the stormwater pond. Perimeter silt fences will be installed along the lower elevation areas to the south and east to retain sediment from any runoff not captured by the temporary swales. Temporary swales will be relocated as appropriate, depending on the areas being excavated or filled. Once the preliminary cut and fill work is completed, swales will remain in place until final grading except as required otherwise. Where practical, the temporary swales will be located where

they can be incorporated into the permanent stormwater collection system. The perimeter silt fence will not be removed until the site is 90 percent stabilized.

After cut and fill and rough grading of the permanent stormwater collection system are completed, the permanent system will be incorporated into the construction stormwater collection system. Inlets to the permanent system will be protected by surrounding silt fencing to prevent sediments from entering into the piping system. Seeding and mulching will be used for slope stabilization where practical as rough grading is completed. The preliminary flow path locations are detailed on the Conceptual Erosion Control Plan in Attachment A.

5.0 Erosion and Sediment Control Requirements

The following sections outline the erosion and sediment (E&S) control measures required by the *Stormwater Management Manual for the Puget Sound Basin* (Washington Department of Ecology, 1992) and the E&S control practices that will be implemented at the facility to meet these requirements.

5.1 E&S Requirement 1: Stabilization and Sediment Trapping

The predevelopment generation plant site is a moderately to steeply sloped area. The generation plant will be constructed in this area with access roads to SR-261.

The existing site slopes from north to south, with a ridge of high ground between the site and the Snake River. Runoff from the construction areas directly to the Snake River is thus virtually impossible. Runoff from the higher elevation (north) onsite area will be directed to a stormwater pond installed early in the construction phase. Silt barriers (fences) will be installed on the lower elevation (south) boundaries of the site to ensure that any runoff not captured by the stormwater pond does not result in offsite discharges of silt. The silt barrier will be installed after the clearing and grubbing necessary for placement of the silt barrier are completed but before the clearing and grubbing of the remaining work area are started. The silt barrier will remain in place until the upslope surface is permanently stabilized. If construction in a particular area ceases temporarily or permanently, stabilization will occur within 2 days during the wet weather months (October 1 through April 30) and within 7 days during the dry weather months (May 1 through September 30).

Fugitive dust may be generated during dry weather conditions. Dust control activities will be directed by the construction manager. Water sprays will be used for dust control.

5.2 E&S Requirement 2: Delineate Clearing and Easement Limits

In the field, clearing and easement limits, as well as setbacks from sensitive and/or critical areas, will be clearly marked to ensure that construction activities do not occur outside of defined areas.

5.3 E&S Requirement 3: Protection of Adjacent Properties

As noted in Section 5.1, E&S Requirement 1: Stabilization and Sediment Trapping, silt fences will be installed at the lower elevation boundaries of the site to ensure that runoff not captured by the stormwater pond does not result in offsite discharges of silt.

5.4 E&S Requirement 4: Timing and Stabilization of Sediment Trapping Measures

As discussed in Section 3.2, Construction Sequence, silt fences will be constructed as a first step in grading. Following rough grading of the site, the stormwater pond will be constructed.

5.5 E&S Requirement 5: Cut and Fill Slopes

Erosion from cut and fill activities will be minimized by ensuring that roughened soil surfaces are maintained on slopes, where practical. Stormwater from these activities will be directed to the stormwater pond using swales. Both the stormwater pond and the swales will prevent offsite discharge of sediment.

5.6 E&S Requirement 6: Controlling Offsite Erosion

Stormwater generated from construction activities at the site will be directed to the stormwater pond for infiltration. Therefore, no increase in volume, velocity, or peak flow rate of stormwater runoff from the site would occur.

5.7 E&S Requirement 7: Stabilization of Temporary Conveyance Channels and Outlets

Stormwater from construction activities will be conveyed to the stormwater pond by swales. Swales will be seeded with grass and lined with stone, concrete, or another appropriate lining system. Where necessary, swales will include obstructions to the flow of water such as weirs, straw bales, or washboards to slow the stormwater velocity and allow settling out of suspended soil.

5.8 E&S Requirement 8: Storm Drain Inlet Protection

As mentioned above, swales will be used to direct stormwater to the stormwater pond for infiltration. Storm drains are not used to convey stormwater to waterways.

5.9 E&S Requirement 9: Underground Utility Construction

Where feasible, no more than 500 feet of trench will be excavated at one time. Accounting for safety and space considerations, excavated materials will be placed on the uphill side of the trenches. If trench dewatering is necessary, water will be directed to the stormwater pond.

5.10 E&S Requirement 10: Construction Access Routes

SR-261 will be kept relatively free of excess mud, dirt, and rock tracked from the project site. The site access roads will be surfaced with aggregate, and stabilized construction entrances will be constructed to reduce the tracking of sediment offsite. If sediment is tracked onto SR-261, the roadway shall be cleaned at the end of each day. Sediment shall be removed from the roadway by shoveling or sweeping and sediment will be transported to a controlled sediment disposal area. Street washing will be conducted only after sediment have been removed in the manner described above.

5.11 E&S Requirement 11: Removal of Temporary BMPs

All temporary E&S control measures, such as silt fences, will be removed within 30 days after final stabilization of the site is achieved or after temporary BMPs are no longer needed. Trapped sediment shall be removed or stabilized; disturbed soils will be permanently stabilized.

5.12 E&S Requirement 12: Dewatering Construction Sites

Any dewatering conducted at the site will be directed to the stormwater pond.

5.13 E&S Requirement 13: Control of Pollutants Other than Sediment on Construction Sites

5.13.1 Petroleum Products

Construction equipment will require diesel fuel and oil on a regular basis; as a result, the potential exists for spills or leaks. All onsite vehicles will be monitored for leaks and will receive regular preventive maintenance to ensure proper operation and reduce the chance of leaks. No "topping off" of fuel tanks will be allowed, so as to reduce the possibility of spills.

Petroleum products will be stored in clearly labeled and tightly sealed containers or tanks. All petroleum products in quantities greater than 55 gallons will be stored in temporary, lined containment dikes to capture and hold accidental spills. Any asphalt used onsite will be applied according to the manufacturer's recommendations. Any soil contaminated by fuel or oil spills will be removed and disposed of at an approved disposal site by the contractor.

5.13.2 Sanitary Wastes

A licensed sanitary waste management contractor will collect all sanitary wastes from portable units. The units will be maintained on a regular basis.

5.13.3 Hazardous Wastes

All hazardous waste materials will be disposed of according to local or state regulations or the manufacturer's recommendations. Site personnel will be instructed regarding these regulations and recommendations, and the construction manager will be responsible for their implementation.

5.13.4 Fertilizers

Fertilizers will be applied as recommended by the manufacturer. After application the fertilizer will be worked into the soil to limit exposure to stormwater. Fertilizers will be stored in a covered area or in watertight containers. Any partially used bags or containers will be properly sealed and stored to avoid spills or leaks.

5.13.5 Paints

All paint containers will be tightly sealed and properly stored to prevent leaks or spills. Paint will not be discharged to the stormwater system. Unused paints will be disposed of according to local or state regulations. Spray painting will not occur on windy days, and a

drop cloth will be used to collect and dispose of drips and overspray associated with all painting activities.

5.13.6 Concrete Trucks

Concrete trucks will be allowed to discharge surplus concrete or drum washwater on the site in a manner that prevents contact with stormwater discharged from the site. Dikes or barriers will be constructed around the discharge areas to contain these materials until they are stable, at which time the materials will be disposed of in an appropriate manner.

5.13.7 Waste Materials

All construction waste material will be collected, deposited, and stored in metal dumpsters from a licensed solid waste management contractor. No construction waste materials will be buried onsite. Any burning will be conducted in accordance with local or state regulations. The construction manager will instruct all site personnel regarding the proper waste disposal procedures.

5.13.8 Nonstormwater Sources

The following nonstormwater sources from project construction activities may be combined with stormwater discharges:

- Waters used to control dust
- Uncontaminated dewatering discharges
- Fire-fighting water
- Vegetation watering
- Potable or spring water discharges

5.14 E&S Requirement 14: Maintenance

All temporary and permanent E&S control BMPs will be inspected, maintained, and repaired to assure continued operation of their intended function. All onsite E&S control measures will be inspected at least once every 7 days and within 24 hours after any storm event with more than 0.5 inch of rain over a 24-hour period.

6.0 Minimum Requirements

In addition to the E&S control measures described above, the *Stormwater Management Manual for the Puget Sound Basin* specifies requirements regarding preservation of natural drainage systems, source control of pollution, runoff treatment BMPs, stream bank erosion control, and wetlands. The following section describes the control practices implemented at the site to meet the requirements.

6.1 Preservation of Natural Drainage Systems

Natural drainage pattern at the site will be maintained, and stormwater from disturbed areas will be directed to the stormwater pond for infiltration. No offsite discharge is anticipated.

6.2 Pollution Source Control

A variety of stabilization and structural BMPs will be utilized at the site to control erosion and sediment. Primary stabilization BMPs include the following: (1) preserving existing vegetation where possible and (2) disturbing only the area needed for project construction. Any disturbed areas will be stabilized within the time frame specified in Section 4.3.1, Stabilization Methods.

6.3 Runoff Treatment BMPs

Runoff from disturbed areas will be directed to the stormwater pond for infiltration. Furthermore, silt barriers (fences) will be installed on the lower elevation (south) boundaries of the site to ensure that any runoff not captured by the stormwater pond does not result in offsite discharges of silt.

6.4 Stream Bank Erosion Control

Since stormwater generated from construction activities at the site will be directed to the stormwater pond for infiltration, there would not be an increase in volume, velocity or peak flow rate of stormwater runoff from the site. Therefore, stream bank erosion is not expected to occur.

6.5 Wetlands

No wetlands have been identified at the site location.

6.6 Water Quality Sensitive Areas

Water quality sensitive areas include lakes, groundwater management areas, groundwater special protection areas, sole source aquifers, critical aquifer recharge areas, well head protection areas, closed depressions, fish spawning and rearing habitat, wildlife habitat, and shellfish protection areas. Water quality sensitive areas have not been identified at the site.

6.7 Offsite Analysis and Mitigation

Since stormwater generated from construction activities at the site will be directed to the stormwater pond for infiltration, offsite impacts are not expected.

6.8 Basin Planning

Currently, a watershed based basin plan has not been developed for this area.

6.9 Operation, Maintenance, and Recordkeeping

Site inspection and generation plant maintenance are important features of an effective stormwater management system. This section describes the procedures for inspecting and maintaining E&S and nonstormwater control measures; it also specifies recordkeeping requirements.

6.9.1 Inspection and Maintenance of Erosion and Sediment Controls and Nonstormwater Controls

The following procedures will be observed to inspect and maintain erosion and sedimentation controls:

- All control measures will be inspected at least once every 7 days and within 24 hours after any storm event with more than 0.5 inch of rain over a 24-hour period.
- All measures will be maintained in good working order. If a repair is necessary, it will be initiated within 24 hours of the inspection.
- Sediment will be removed from the silt barriers when it has reached one-third the height of the barrier.
- Temporary and permanent seeding and planting will be inspected for bare spots, washouts, and healthy growth.
- Riprap and aggregate covered areas will be inspected for bare spots and washouts. The construction manager will select individuals to be responsible for inspections, maintenance, repairs, and reporting. The designated individuals will receive the necessary training from the construction manager to properly inspect and maintain the controls in good working order.
- Inspection forms will be completed after each inspection (see Appendix C).
- The completed inspection forms will be kept with the SWPPP in Attachment C.

6.9.2 Recordkeeping

Two inspection forms are provided in Appendix C for recording inspections and maintenance of the control measures: Erosion and Sedimentation Controls (Inspection Form 1), and Nonstormwater Source Controls (Inspection Form 2). All disturbed areas and materials storage areas require inspection at least every 7 days and within 24 hours of 0.5 inch or more of rainfall. After each inspection, the inspector completes an inspection report and inserts that report in Attachment C of this plan. Any required maintenance is initiated within 24 hours of the inspection.

7.0 Additional BMPs

BMPs, such as good housekeeping measures, inspections, hazardous material storage and containment, and spill prevention and response practices, will be used to limit contact between stormwater and potential pollutants.

7.1 Good Housekeeping

The good housekeeping measures listed below will be followed to reduce the risk of potential pollutants entering stormwater discharges. All construction personnel will be responsible for monitoring and maintaining housekeeping measures or notifying the appropriate person of a problem.

- Store only enough product to do the job.

- Store all materials in a neat and orderly manner in the appropriate containers and, if possible, under a roof or within an enclosure.
- Keep products in the original container with the original manufacturer's label.
- Do not mix products unless recommended by the manufacturer.
- Use all of a product before disposing of the container.
- Use and dispose of products according to the manufacturer's recommendations or the construction manager's direction.
- Perform regular inspections of the stormwater system and the material storage areas.
- When and where appropriate, use posters, bulletin boards, or meetings to remind and inform construction personnel of required procedures.

7.2 Hazardous Materials

Storage areas for hazardous materials such as oils, greases, paints, fuels, and chemicals must be provided with secondary containment to ensure that spills in these areas do not reach waters of the state. Contingencies for the proper disposal of contaminated soils shall be established (for example, use of licensed hauler and approved landfill) early in the construction period.

7.3 Spill Prevention and Response

In addition to the good housekeeping and hazardous materials storage and containment procedures described above, spill prevention and response practices will be as follows:

- Construction personnel will be informed of the manufacturer's recommended spill cleanup methods and the location of that information and cleanup supplies.
- Materials and equipment for the cleanup of a relatively small spill will be kept in the materials storage area. These facilities may include brooms, rags, gloves, shovels, goggles, sand, sawdust, plastic or metal trash containers, and protective clothing.
- All containers will be labeled, tightly sealed, and stacked or stored neatly and securely.

The following summarizes the spill response procedure:

1. Upon discovery of a spill, stop the source of the spill.
2. Cease all spill material transfer until the release is stopped and waste is removed from the spill site.
3. Initiate containment to prevent the spill from reaching state waters.
4. Notify a supervisor or the construction manager of the spill.
5. Coordinate further cleanup activities (construction manager's responsibility).
6. Report any significant spill of hazardous material to the appropriate state and/or local agencies at the following numbers:

National Response Center: 1-800-424-8802
Washington State Department of Ecology (state contact): 1-509-456-2926
Columbia County Sheriff (local contact): 1-509-382-1100

7. Review the construction SWPPP and amend if needed. Record a description of the spill, its cause, and cleanup measures that are taken.

8.0 Record Maintenance

A fully signed copy of this plan and any supporting materials must be maintained at the project site from the date of project initiation to the date of final stabilization. All records and supporting documents will be compiled in an orderly manner and maintained for a period of 3 years following final site stabilization.

9.0 SWPPP Modifications

The SWPPP shall be revised whenever there is a change in design, construction, operation, or maintenance of any BMP that causes the SWPPP to be less effective in controlling the pollutants. The SWPPP shall also be modified when self-inspection reveals that the description of pollutant sources or the BMPs identified in the SWPPP are inadequate. Note also that Ecology may require that the SWPPP and BMP be modified if compliance with standards is not being achieved. SWPPP modifications will be documented in the Record of Plan Amendments located at the front of this plan and on the drawings in Attachment A.

10.0 Contractor Certifications

Contractor certification forms are provided in Appendix A. This form requires each contractor or subcontractor working on the generation plant site to understand the terms, conditions, and intent of the permit and to implement the measures described in this plan appropriate to the relevant area of work.

Additional sheets may be copied and inserted into the plan at the job site if there are more subcontractors onsite than sheets provided.

11.0 Project Completion

Construction is considered complete when the project site is 90 percent (density) stabilized. The SPP construction manager will be responsible for removing all temporary E&S control measures within 30 days after final stabilization of the site. A Notice of Termination must be submitted to Ecology requesting termination of the permit. Note that Ecology will continue to assess a permit fee until a Notice of Termination is submitted.

APPENDIX A

Contractor/Subcontractor Certification Form

Contractor/Subcontractor Certification

I certify, under penalty of law, that I understand the terms and conditions of the National Pollutant Discharge Elimination System and State Waste Discharge General Permit for Stormwater Discharges Associated with Construction Activities (Permit) issued for the Starbuck Power Project and the Storm Water Pollution Prevention Plan developed to implement the requirements of the Permit.

Date

Name/Title

Firm

Address

Phone

Nature of Contracted Service

Construction Area(s)

Contractor/Subcontractor Certification

I certify, under penalty of law, that I understand the terms and conditions of the National Pollutant Discharge Elimination System and State Waste Discharge General Permit for Stormwater Discharges Associated with Construction Activities (Permit) issued for the Starbuck Power Project and the Storm Water Pollution Prevention Plan developed to implement the requirements of the Permit.

Date	Name/Title
	Firm
	Address
	Phone
	Nature of Contracted Service
	Construction Area(s)

Contractor/Subcontractor Certification

I certify, under penalty of law, that I understand the terms and conditions of the National Pollutant Discharge Elimination System and State Waste Discharge General Permit for Stormwater Discharges Associated with Construction Activities (Permit) issued for the Starbuck Power Project and the Storm Water Pollution Prevention Plan developed to implement the requirements of the Permit.

Date

Name/Title

Firm

Address

Phone

Nature of Contracted Service

Construction Area(s)

Appendix B

Construction Activity Record Form

Construction Activity Record

An accurate and up-to-date record of construction activity must be maintained as part of this plan. Record the following information on an ongoing basis:

- Dates when major soil disturbing activities occur
- Dates when construction activities temporarily cease on a portion of the site
- Dates when construction activities permanently cease on a portion of the site
- Dates when stabilization measures are initiated

Date	Activity

Appendix C

Inspection and Maintenance Forms

Inspection Form 1

Erosion and Sedimentation Controls

Visually inspect disturbed areas of the construction site that have not been finally stabilized. Inspections are to be completed every 7 days and within 24 hours of a rainfall event of 0.5 inch or more. Maintenance is to be performed within 24 hours of inspection.

Inspector: _____

Inspection date: _____

Date of last rainfall: _____

Amount of last rainfall: _____inches

Report on the condition of the erosion and sedimentation controls installed at the construction site. Check for tears in silt barriers, for securely attached fabric to fence posts, and for depth of sediment in front of the silt barriers. The depth of sediment should not exceed one-third of the barrier height. Seeding and planting areas and riprap and aggregate areas should be inspected for bare spots and washouts.

Area	Condition of Control	Maintenance Required/Completion Date

Inspection Form 2

Nonstormwater Source Controls

Visually inspect material storage and construction areas. Inspections are to be completed every 7 days and within 24 hours of a rainfall event of 0.5 inch or more. Maintenance is to be performed within 24 hours of inspection.

Inspector: _____

Inspection date: _____

Date of last rainfall: _____

Amount of last rainfall: _____inches

Construction dust: Is there excessive dust at the site that requires watering?

_____

_____

Sediment tracking: Is SR-261 relatively free from mud, dirt, or rock? If not, sediment must be removed at the end of each day by shoveling or sweeping prior to washing roadway.

Is washdown required? _____

Are graveled areas adequately covered? _____

Petroleum and chemical products: Are spill containment structures secure? Are product containers securely sealed? _____

Sanitary waste: Do portable sanitary units need service? _____

Hazardous waste: Are hazardous wastes stored and disposed of in compliance with state and local regulations? _____

Inspection Form 2

Nonstormwater Source Controls (Continued)

Construction waste: Are all construction waste materials collected and stored in approved dumpsters? _____

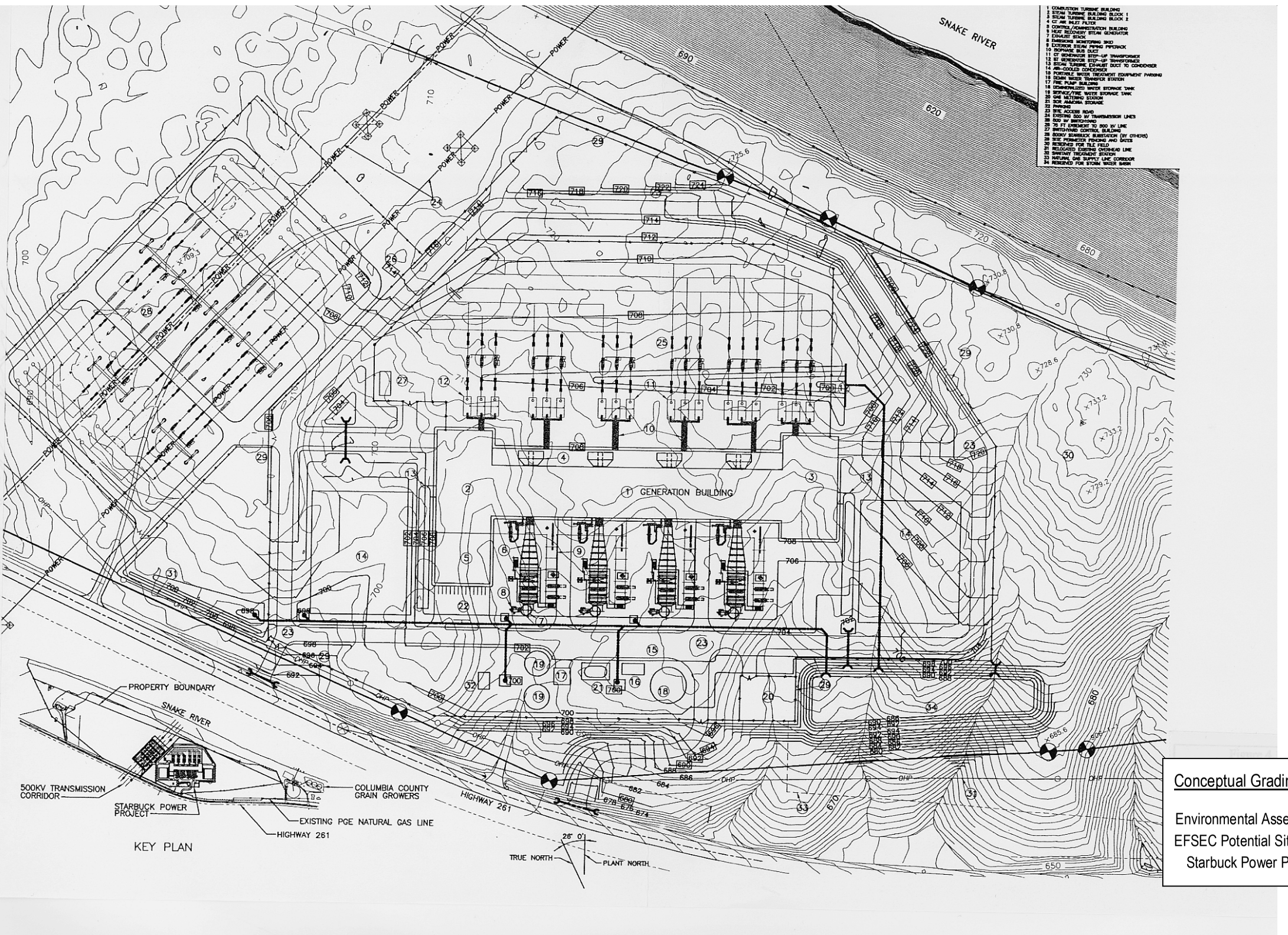
Material storage areas exposed to precipitation: Are materials handled and stored to prevent leakage and keep pollutants from entering the stormwater system? _____

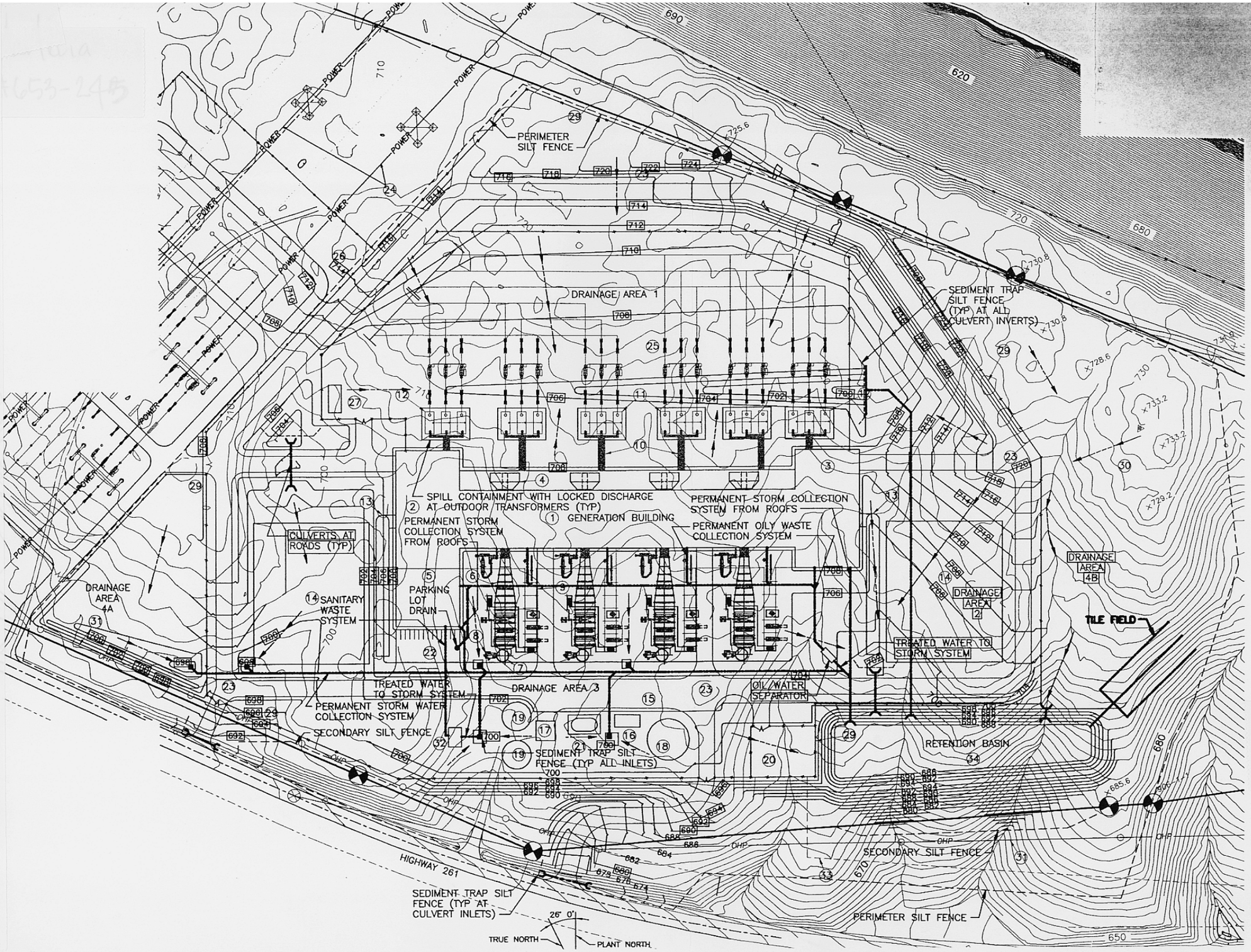
Other nonstormwater discharges: Are waters from dust suppression activities, fire fighting activities and dewatering activities directed to the stormwater system? _____

Maintenance Required	Maintenance Completion Date

ATTACHMENT A

Site Conceptual Grading and Conceptual Erosion Control Plans


SNAKE RIVER
1 GENERATION BUILDING
PROPERTY BOUNDARY
SNAKE RIVER
500KV TRANSMISSION CORRIDOR
STARBUCK POWER PROJECT
COLUMBIA COUNTY GRAIN GROWERS
EXISTING PGE NATURAL GAS LINE
HIGHWAY 261
HIGHWAY 261
KEY PLAN
TRUE NORTH
PLANT NORTH
Conceptual Grading Plan
Environmental Assessment
EFSEC Potential Site Study
Starbuck Power Project



Conceptual Erosion Control Plan

Environmental Assessment
EFSEC Potential Site Study
Starbuck Power Project

ATTACHMENT B

Completed Construction Activity Record Forms

ATTACHMENT C

Completed Inspection and Maintenance Forms