Puget Sound Energy

Mint Farm Generating Station

Title V Basis Statement

Southwest Clean Air Agency 11815 NE 99 Street, Suite 1294 Vancouver, WA 98682-2322 (360) 574-3058

PERMIT #:	SW08-15-R1
ISSUED:	June 11, 2018
ISSUED TO:	Puget Sound Energy 10885 NE Fourth Street Bellevue, WA 98004
PLANT SITE:	Mint Farm Generating Station 1200 Prudential Boulevard Longview, WA 98632
PERMIT ENGINEER:	Wess Safford, Air Quality Engineer
REVIEWED BY:	Paul T. Mairose, Chief Engineer

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I. GENERAL INFORMATION AND CERTIFICATION

- 1. **Company Name:** Puget Sound Energy 2. Facility Name: Mint Farm Generating Station **Parent Company:** Puget Sound Energy 3. **Responsible Official:** Mark Carlson, Plant Manager 4. **Facility Contact Person:** Ruth Juris, Senior Environmental Scientist 5. Unified Business Identification Number: 602566990 6.
- 7. SIC / NAICS Code: 4911 / 221112

8. Basis for Title V Applicability:

The facility is subject to the Title V Air Operating Permit program because it is an affected source under the Title IV Acid Rain program. The Mint Farm Generating Station is not a major source as defined in WAC 173-401-200(19).

9. Purpose of Current Permitting Action:

The purpose of the current permitting action is to issue a renewal Title V Permit.

The renewal Permit incorporates the provisions of Air Discharge Permit (ADP) 17-3230, which was issued since the last Title V Permit was issued. ADP 17-3230 was issued to approve multiple component and control system upgrades for the combustion turbine and installation of a water injection system in the superheater section of the facility's heat recovery steam generator (HRSG).

10. Attainment Area:

The Mint Farm Generating Station (Mint Farm) is located in an area which is in attainment for all criteria pollutants.

11. Facility Description:

Mint Farm is a primary power generation facility located in Longview, Washington. Mint Farm is owned by Puget Sound Energy who purchased the facility on December 5, 2008. Mint Farm is configured as a natural gas-fired combined-cycle turbine facility (NGCC) with a fired heat recovery steam generator (HRSG) and associated support equipment. The facility operates a single combustion turbine (General Electric - Frame 7FA). Mint Farm has a nominal generating capacity of 319 megawatts (average annual conditions). All plant equipment functions in direct support of the combustion turbine and steam generator system. First fire of the combustion turbine occurred on September 21, 2007. The facility has a total of three emission units consisting of the Combustion Turbine/HRSG, Cooling Tower and Emergency Generator.

12. Facility Permitting History:

The following table lists each Air Discharge Permit (ADP) issued to the facility by SWCAA. Permits listed in italics bold contain no active requirements. The requirements may have been superseded, may have been of limited duration, or the equipment may have been removed.

Permit <u>Number</u>	Permit Application	Issue Date	Permitting Action Description
<u>Current</u> 17-3230	CO-975	May 25 2017	 This permitting action: Approved installation of General Electric's Advance Gas Path Upgrade on the Combustion Turbine. Approved installation of General Electric's Dry Low NOx 2.6+ Combustion Upgrade on the Combustion Turbine. Approved installation of new attemporation piping and instrumentation changes in the HRSG. Approved replacement of the first compressor row blades in the Combustion Turbine with upgraded components. Removed Fuel Preheater emission unit.
<u>Obsolete/Sup</u>	<u>perseded</u>		
10-2929	CO-888	<i>April 4</i> 2010	 This permitting action: Removed Fire Pump emission unit. Clarified Combustion Turbine/HRSG startup and shutdown provisions. Revised NH₃ monitoring requirements and NO_x/NH₃ minimization protocol.
04-2571R2	CO-843	February 25 2008	 This permitting action: Revised equipment specifications for the previously approved emergency diesel generator.
04-2571R1	CO-821	November 11 2006	 This permitting action: Approved installation of an 8.7 MMBtu/hr fuel pre-heater.
04-2571	<i>CO</i> -777	September 16 2004	 This permitting action: Renewed project approval as originally proposed in ADP Application CO-724.
01-2342R1	<i>CO-724</i>	May 6 2002	 This permitting action: Approved the addition of duct firing and an increase in nominal plant rating to 319 MW. Permit was voided after expiration of 18 month construction window.

Permit	Permit	Issue
<u>Number</u>	Application	Date
01-2342	CO-689	June 4
		2001

Permitting Action Description This permitting action:

• Approved construction of a combined cycle combustion turbine power plant with nominal plant rating of 248 MW.

II. EMISSION UNIT INDENTIFICATION

ID	Generating Equipment/Activity	Emission Control
EU1	Combustion Turbine/HRSG	Dry Low-NO _X Combustor System,
	(GE Frame 7FA – 2,052 MMBtu/hr)	SCR/Oxidation Catalyst Systems,
	(Duct Burners – 458 MMBtu/hr)	Low Sulfur Fuel
EU2	Cooling Tower	Drift Eliminators
	(77,000 gal/min)	
EU3	Emergency Generator	Low Sulfur Fuel
	(Caterpillar – 824 bhp)	

EU1 Combustion Turbine/HRSG

One General Electric Frame 7FA natural gas fired combustion turbine equipped with dry low-NO_X combustors and a power augmentation system. As originally installed, the combustion turbine had a maximum rated heat input of 1,900 MMBtu/hr and a base-load rating of 169 MW of electrical power. The combustion turbine was equipped with General Electric's Advance Gas Path and Dry Low NOX 2.6+ upgrades in 2017, which increased maximum rated heat input and power output. The combustion turbine now has a maximum rated heat input of 2,052 MMBtu/hr and a base-load rating of 169 MW of electrical power.

The combustion turbine operates in conjunction with a triple pressure heat recovery steam generator (HRSG) used to generate steam from waste heat in the turbine exhaust. The HRSG is equipped with natural gas fired duct burners rated at 458 MMBtu/hr, which are used to provide supplemental heat. Steam from the HRSG drives a steam turbine with a base-load rating of 150 MW of electrical power. Combustion gases from the combustion turbine and duct burners are discharged to the atmosphere through a common exhaust stack at 165' above ground level.

Emissions from the Combustion Turbine/HRSG consist of NO_x , CO, SO₂, PM, VOC, NH₃, HAPs, and TAPs. NO_x and CO emissions from this unit are controlled through the use of a selective catalytic reduction (SCR) system and oxidation catalyst. The SCR system uses aqueous ammonia as a reducing reagent. Both catalyst beds are located within the HRSG.

This unit is subject to applicable requirements found in 40 CFR 60 Subpart KKKK.

EU2 Cooling Tower

One mechanically-induced-draft, counter-flow, multi-cell cooling tower with a design water circulation rate of 77,000 gallons per minute. This cooling tower is used to service plant cooling

needs including condensation of process steam from the steam turbine. The approved operating scheme allows cooling tower water to go through a maximum of 10 cycles of concentration.

Emissions from the Cooling Tower consist of PM. PM emissions are minimized through the use of high efficiency drift eliminators guaranteed to limit drift to a maximum rate of 0.0005%.

This emission unit is not subject to any requirements from 40 CFR Part 60 or 63.

EU3 Emergency Generator

One emergency electric generator with a nominal rating of 550 kW. The electric generator is powered by a Caterpillar model 3412 diesel engine (s/n BPG00392) rated at 824 brake horsepower and manufactured in November 2002. Specific fuel consumption at full load is 43 gal/hr. This unit is used to provide electrical power to vital facility systems in the event of a complete loss of utility power.

Emissions from the Emergency Generator consist of NO_X , CO, SO₂, PM, and VOC. SO₂ emissions are minimized through the use of low sulfur diesel fuel.

This unit is subject to applicable requirements found in 40 CFR 63 Subpart ZZZZ.

III. INSIGNIFICANT EMISSION UNIT IDENTIFICATION

Each emission unit listed as insignificant in the permit application has been reviewed by SWCAA to confirm its status. The emission units were determined to be insignificant as follows:

There are no specifically identified insignificant emission units at this facility.

IV. EXPLANATION OF SELECTED PERMIT PROVISIONS AND GENERAL TERMS AND CONDITIONS

P13. Excess Emissions

SWCAA 400-107

SWCAA 400-107 establishes criteria and procedures for determining when excess emissions are considered unavoidable. Emissions that meet the requirements to be classified as unavoidable are still considered excess emissions and are reportable but are excused and not subject to penalty. Notification of excess emissions is required as soon as possible and shall occur by the next business day following the excess emissions event. Excess emissions due to startup or shutdown conditions are considered unavoidable if the permittee adequately demonstrates the excess emissions are considered unavoidable if the permittee adequately demonstrates the upset event was not caused by poor or inadequate design, operation, maintenance, or other reasonably preventable condition, and the permittee takes appropriate corrective action that minimizes emissions during the event, taking into account the total emissions impact of that corrective action.

Permit Renewal **G5**.

WAC 173-401-710(1)

An Air Operating Permit has an effective term of 5 years from the date of final issuance. Pursuant to WAC 173-401-710(1), the Permit specifies a date by which a renewal application is required to be submitted to SWCAA.

A preliminary renewal application for this facility must be submitted no later than 12 months prior to permit expiration. A complete renewal application must be received no later than 6 months prior to permit expiration. Early submittal of a preliminary application is intended to provide SWCAA with the opportunity to review the application for completeness and allow the permittee sufficient time to amend the application, if necessary, prior to the final submission date.

WAC 173-400-117, WAC 173-400-700 WAC 173-460 SWCAA 400-109, SWCAA 400-110 SWCAA 400-820

New Source Review G8.

Construction or modification of an air pollution source is subject to review to ensure that applicable emission standards are met and appropriate control technology is employed. The program under which a new source or modification is reviewed depends on the type and quantity of potential air emissions associated with the project. New sources or modifications meeting the definition of a 'major stationary source' and located in attainment or unclassified areas are subject to review under the Prevention of Significant Deterioration (PSD) program administered by the Department of Ecology. New sources or modifications meeting the definition of a 'major stationary source' and located in a nonattainment area and minor (area) sources are subject to review under SWCAA's new source review program. New sources or modification of existing sources that increase the emission of toxic air pollutants are subject to review under SWCAA's toxic air pollutant program, which implements the February 14, 1994 version of WAC 173-460.

G9. Portable Sources

SWCAA 400-110(6) establishes procedures for approving the operation of portable sources of air emissions that locate temporarily at project sites. These requirements are general standards, and apply to all portable sources of air contaminants. Equipment commonly subject to these conditions include emergency generators, engine-powered pumps, rock crushers, concrete batch plants, and hot mix asphalt plants that operate for a short time period at a site to fulfill the needs of a specific contract. Portable sources exempt from registration under SWCAA 400-101 are also exempt from SWCAA 400-110 and not subject to the portable sources requirements.

G16. Chemical Accident Prevention Provisions

None of the processes at the facility currently store or handle affected substances in quantities large enough to trigger applicability of the provisions in 40 CFR 68. The primary material of concern at this facility is bulk aqueous ammonia, which is stored onsite for use in the turbine's SCR system. The existing storage tank has a physical capacity less than the applicable threshold for <20% aqueous ammonia so the regulation does not apply. However, the regulation has been included in the general terms of the permit in order to address future operations that may store or handle substances that are subject to the regulation.

40 CFR 68

SWCAA 400-110(6)

Rea 9

Emission Standards for Combustion and Incineration Units SWCAA 400-050 Req 9 incorporates particulate matter emission limit for combustion or incineration units established in SWCAA 400-050(1). This requirement applies to all combustion and incineration units at the source, both EUs and IEUs. Pursuant to WAC 401-530(2)(c), the permit does not contain any testing, monitoring, recordkeeping, or reporting requirements for affected IEUs except those specifically identified by the underlying requirements. General monitoring provisions have been created for EUs under 'gap-filling' to provide reasonable compliance assurance.

Req 10

Emission Standards for General Process Units

Req 10 incorporates a particulate matter emission limit for general process units that applies to all general process units at the source, both EUs and IEUs. Pursuant to WAC 401-530(2)(c), the permit does not contain any testing, monitoring, recordkeeping, or reporting requirements for affected IEUs except those specifically identified by the underlying requirements. General monitoring provisions have been created for EUs under 'gap-filling' to provide reasonable compliance assurance.

Permit No. SW08-15-R1

G17. Reporting of Emission of Greenhouse Gases

WAC 173-441 requires owners and operators to quantify and report emissions of greenhouse gases from applicable source categories if actual emissions from their facility are ten thousand metric tons CO₂e or more per year. Annual greenhouse gas emissions from this facility are greater than ten thousand tons so the facility is subject to the reporting program. The reporting program is administered by Ecology, and all required reports are to be submitted directly to that agency. SWCAA generally receives copies of each report, but report review and approval of calculation methodology is performed by Ecology.

V. EXPLANATION OF OPERATING TERMS AND CONDITIONS

Req 1 through Req 8

General Standards for Maximum Emissions

Req 1 through Req 8 incorporate general maximum emission standards for various air contaminants established in SWCAA 400-040. These standards apply to all emission units at the source, both EU and IEU. Pursuant to WAC 401-530(2)(c), the permit does not contain any testing, monitoring, recordkeeping, or reporting requirements for affected IEUs except those specifically identified by the underlying requirements. General monitoring provisions have been created for EUs under 'gapfilling' to provide reasonable compliance assurance.

Req 7 prohibits any concealment or masking. At present, the Permittee does not operate any equipment capable of masking emissions, therefore monitoring is limited to the annual compliance certification.

WAC 173-441

SWCAA 400-040

SWCAA 400-060

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Req 11

Emission Standards for Certain Source Categories - Abrasive Blasting SWCAA 400-070(8) Req 11 incorporates general limitations and work practice requirements for abrasive blasting that apply to any construction and/or maintenance activities at the facility that involve abrasive blasting. General monitoring provisions have been created under 'gap-filling' to provide reasonable compliance assurance with applicable requirements.

Req 12

Operation of Pollution Control Equipment

Req 12 incorporates a general permit term requiring approved pollution control equipment to be operated at all times during which the associated process equipment is in operation. Approval conditions for emission units equipped with dedicated control equipment generally assume that the control equipment is employed at all times to minimize air pollutant emissions. Bypassing or turning off control equipment circumvents the approved operating scheme. This requirement prohibits such action by the permittee. Compliance with this requirement is assured via compliance certification by the responsible official.

Req 13

Visible Emission Limits

Req 13 contains visible emissions limitations for all of the facility's emission units. The limits were established through new source review and reflect the operating scheme proposed by the permittee at the time of equipment installation. The visible emissions limit for the emergency generator allows an exception during startup periods due to the operating limitations of the generator's diesel engine. General monitoring provisions have been created under 'gap-filling' to provide reasonable compliance assurance with applicable requirements.

Req 14

Good Air Pollution Control Practice

Req 14 requires the permittee to maintain and operate affected equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times. The underlying requirements are general NSPS provisions that specifically apply to the Combustion Turbine since it is the only unit at the facility subject to a 40 CFR Part 60 performance standard. Compliance with this requirement is assured via compliance certification by the responsible official.

Req 15 and Req 28

40 CFR 60.4320, 60.4330

Standards of Performance for Stationary Combustion TurbinesSWCAA 400-11540 CFR 60, Subpart KKKK establishes NO_X and SO_2 emission standards for stationary gas turbinesthat have a heat input at peak load greater than 10.7 gigajoules per hour, and are constructed,
modified or reconstructed after February 18, 2005. The Combustion Turbine is subject to this
regulation and classified as a new, natural gas fired, electricity generating turbine with a peak load
heat input of > 850 MMBtu/hr.

40 CFR 60.4320 requires affected facilities to comply with the applicable NO_x emission limits from Table 1 of Subpart KKKK, which vary based on turbine size, function, fuel type, and geographic location. The NO_x emission limits applicable to the Combustion Turbine are 15 ppm (a) 15% O₂ or 0.43 lb/MW-hr. Unit compliance is based on a 30 operating day rolling average (combined cycle configuration) and includes periods of startup and shutdown. Compliance is demonstrated using emission data from a CEMS.

ADP 17-3230, Condition 9

ADP 17-3230, Condition 6

40 CFR 60.11(d) 40 CFR 60.4333

SWCAA 400-115

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40 CFR 60.4330 requires affected facilities to comply with an SO₂ emission limit of 0.90 lb SO₂/MWh gross output or 0.060 lb SO₂/MMBtu heat input. The permittee generally demonstrates compliance with the 0.060 lb SO₂/MMBtu heat input standard based on periodic sampling of fuel sulfur content.

Req 16 through Req 21

Combustion Turbine BACT Limits ADP 17-3230, Conditions 1 and 2 Req 16 through Req 21 contain BACT emission limits established for the Combustion Turbine via New Source Review. The emission limits apply to emissions of criteria pollutants, VOC and NH₃. Emissions of all affected pollutants are subject to limits on maximum mass emission rate. Emissions of NO_X, CO and NH₃ are subject to limits on maximum emission concentration. Compliance with this requirement is demonstrated with a combination of operational monitoring, CEMS data, and periodic emission testing.

Req 22

Startup and Shutdown Exemption

Req 22 is an exemption clause that applies to the short term emission limits established in Req 17 through Req 21. Any emission limit with an averaging time of 24-hr or less is suspended during periods of combustion turbine startup or shutdown. There are significant physical limitations on the ability of the combustion turbine and associated control equipment to meet specified performance levels during these transitory operational periods. Suspension of short term emission limits is intended to reasonably accommodate the physical limitations of the equipment. Suspension is only allowed for limited periods of time depending on the operating condition of the steam turbine, which has more significant physical limitations during startup and shutdown than the combustion turbine. In no case, are emission limits suspended for greater than 6 hours during startup or 30 minutes during shutdown. Compliance with this requirement is demonstrated with operational records from the Combustion Turbine/HRSG.

Reg 23

NO_X Emission Control System Design

Req 23 incorporates minimum design requirements for the NO_x emission control system in use with the Combustion Turbine/HRSG. The design requirements were established via New Source Review based on the facility's original design proposal. Compliance with this requirement is assured via compliance certification by the responsible official.

Req 24 and Req 25

NO_x Emission Control System Operating Requirements ADP 17-3230, Conditions 12 and 13 Req 24 and Req 25 incorporate operating restrictions for the NO_x control system in use with the Combustion Turbine/HRSG. The restrictions were established in the facility's original construction permit and were intended to maintain ongoing NO_X emission concentrations at the lowest level practical. Compliance with these requirements is demonstrated via operational monitoring and CEMS data.

At the time the facility was originally permitted, operational data from similar facilities indicated that NO_X control systems were typically operated at, or near, the NO_X emission limit of the associated combustion turbine rather than at the highest practical level of control. In the interest of minimizing emissions on an ongoing basis, the permittee is required to operate the NO_X control system at the highest practical level of control on a continuing basis. The highest practical level of

ADP 17-3230, Condition 11

ADP 17-3230, Condition 3

Control system efficiency generally degrades as the catalyst ages and actual emission concentrations (NO_X/NH_3) are expected to rise over time until the catalyst bed degrades enough to require replacement. To ensure that catalyst replacement is performed in a timely fashion, the permittee is required to take affirmative action to address performance degradation whenever the control system can no longer maintain NH₃ emission concentrations below 5.0 ppmv. The action taken is left to the permittee's discretion, and will vary depending upon the specific situation.

operating parameters to minimize the arithmetic sum of NO_X and NH₃ emissions concentrations.

Req 26

Ammonia Content Limit

Req 26 limits the ammonia content of aqueous ammonia used in the Combustion Turbine's ammonia injection system to less than 20%. The primary purpose of this requirement is to keep the facility from becoming subject to the provisions of the Chemical Accident Prevention program (40 CFR 68). Aqueous ammonia with a concentration of less than 20% ammonia is not regulated under that program. Compliance with this requirement is assured by maintaining material delivery records.

Req 27

Acid Rain Standard Requirements

This facility is an "affected source" under the Acid Rain Program. As such, the facility is required to hold SO_2 allowances not less than the total annual emissions in tons of SO_2 from the Combustion Turbine beginning with calendar year 2000. Mint Farm does not receive an allocation of allowances. All SO_2 allowances used to meet the facility's program obligations are obtained through open market allowance trading. Compliance with this requirement is assured via compliance certification by the responsible official and review of reports submitted to EPA's Clean Air Markets Division.

Req 29

Combustion Turbine/HRSG Fuel Limitation

Req 29 specifies natural gas as the only allowable fuel for the Combustion Turbine/HRSG and Fuel Gas Heater. This restriction is taken from the original permit application for the affected equipment and forms the basis for associated BACT determinations at the time of original approval. Compliance with this requirement is assured via compliance certification by the responsible official.

Req 30

Cooling Tower Emission Limit

Req 30 incorporates a limit on the maximum annual mass emission rate of PM from the Cooling Tower. The emission limit is a BACT limit established via New Source Review based on information submitted in the original permit application for the unit. Compliance with the emission limit is determined based on recorded operation and technical information for Cooling Tower components.

40 CFR 72.9(c)(1) WAC 173-406-106(3)(a)

ADP 17-3230, Condition 15

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ADP 17-3230, Condition 16

ADP 17-3230, Condition 4

Req 31 and Reg 32

Emergency Generator Emission LimitsADP 17-3230, Conditions 5 and 18

Req 31 incorporates limits on the maximum annual mass emission rate of NO_X, CO, and PM from Emergency Generator operation. The emission limits are BACT limits established via New Source Review. The emission limits reflect operation for the purposes of testing and emergency use only, consistent with the operating scheme proposed in the original permit application. Compliance with the emission limits is determined based on recorded operation and emission factors from the manufacturer.

Req 32 contains a limit on the maximum fuel sulfur content of fuel oil fired in the Emergency Generator. The fuel sulfur content limit is a BACT limit established via New Source Review. Compliance with this requirement is assured by maintaining fuel delivery records.

Reg 33

Emergency Generator Hour Meter

Req 33 requires the permittee to equip the Emergency Generator with a non-resettable hour meter. Installation and maintenance of an hour meter is a specific requirement of applicable local and federal regulations. The purpose of the hour meter is provide a reliable record of unit operation that can be used to demonstrate compliance with applicable operational limits. Compliance with this requirement is assured via compliance certification by the responsible official.

Req 34 through Req 36

Emergency Generator Operating Limits

Req 34 through Req 36 contain various operational limits applicable to the Emergency Generator. The operational limits restrict overall unit operation and minimize idle and startup periods. The 170 hr/yr limitation in Req 34 is a BACT limit imposed through New Source Review. This restriction of operation was established as part of the original approval action for the unit. The operating limits in Req 35 are taken from the applicable MACT (40 CFR 63, Subpart ZZZZ). The Emergency Generator is classified as an existing emergency CI RICE located at an area source of HAP emissions. Compliance with these requirements is assured by hour meter readings and facility operating records.

Req 37 and Req 38

Emergency Generator Operation and Maintenance

Req 37 and Req 38 contain general requirements for operation and maintenance of the Emergency Generator. The requirements are taken from the applicable MACT (40 CFR 63, Subpart ZZZZ). The Emergency Generator is classified as an existing emergency CI RICE located at an area source of HAP emissions. Reg 37 implements operational standards applicable to the diesel engine. As provided for in 40 CFR 63.6625(e), the permittee has opted to implement a facility specific maintenance plan that provides for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. The maintenance plan includes annual inspection and/or replacement of critical engine components. Req 38 contains unit specific requirements taken from Subpart ZZZZ, Table 2d. Compliance with these requirements is assured by facility operating and maintenance records.

ADP 17-3230, Condition 17

40 CFR 63.6625(f)

40 CFR 63.6625(h), 63.6640(f) ADP 17-3230, Condition 17

40 CFR 63.6603(a), 63.6605(b) 40 CFR 63.6625(e), 63.6640(a)

OBSOLETE REQUIREMENTS:

NSPS Notification and Record Keeping

The Combustion Turbine/HRSG is subject to an NSPS regulation (40 CFR 60, Subpart KKKK), and must provide notification as provided in 40 CFR, Section 60.7. These requirements have been met as described below.

Combustion Turbine Notification of construction: Submitted via letter dated April 26, 2006 Submitted via letter dated August 28, 2007 Notification of anticipated startup: Notification of actual startup: Submitted via letter dated September 16, 2007

NSPS Initial Performance Test – Subpart KKKK

The Combustion Turbine at this facility is subject to the NO_X standard described in 40 CFR 60.332. Therefore, the unit is also subject to the performance testing requirements of 40 CFR, Section 60.8. These requirements have been met as described below.

Initial source test:	Performed February 19-20, 2008
Source test report:	Received by SWCAA on April 4, 2008

General Acid Rain Recordkeeping Provisions_

The general Acid Rain recordkeeping provisions of 40 CFR 75.50 are no longer valid as of January 1, 1996, and are replaced by the general recordkeeping provisions of 40 CFR 75.54. The Acid Rain Program provided an optional set of recordkeeping requirements with only slightly different provisions prior to January 1, 1996, but disallows their use from January 1996 onward.

Acid Rain Notifications

The Combustion Turbine is subject to the requirements of 40 CFR Part 75.61 "Notifications". These requirements have been met as described below.

Actual startup date:	SWCAA notified August 28, 2007 (startup - 9/16/07)
Initial CEMS certification:	SWCAA notified January 16, 2008 (test plan submittal)
Initial CEMS certification test:	Completed – March 5, 2008

Acid Rain Monitoring Plan

The Combustion Turbine is subject to the requirements of 40 CFR, Section 75.62 "Monitoring Plan". The initial monitoring plan was submitted to SWCAA and EPA on November 20, 2007.

Obsolete/Superseded Regulatory Orders and Air Discharge Permits

SWCAA has issued a total of seven air discharge permits to Mint Farm since initial proposal. As identified in Section V, only the newest permit is still active (ADP 17-3230). Approval conditions in the previous six permits have been superseded or have become obsolete as described below.

ADP 10-2929 (issued April 29, 2010) made numerous modifications to the facility's existing air discharge permit. The diesel engine driven fire pump was removed from the permit. The definition of startup and shutdown periods for the Combustion Turbine was revised to

40 CFR 60.8

40 CFR 75.61

40 CFR 75.50

40 CFR 75.62

40 CFR 60.7

delineate between the combustion turbine and the associated steam turbine, incorporate aborted shutdowns of the combustion turbine, and address periods of mechanical tuning and testing related to turbine maintenance outages. The requirement to operate the Combustion Turbine NO_X control system in such a manner as to minimize the arithmetic sum of NO_X and NH_3 emissions on a concentration basis was updated to reflect new procedures and protocol. All references to a CEMS for NH_3 monitoring were removed from the permit. This permit was superseded in its entirety by ADP 17-3230.

ADP 04-2571R2 (issued February 25, 2008) modified the permitted equipment specifications for the Emergency Generator. The permitting action was necessary to correct discrepancies between the original equipment approval and the equipment actually installed at the facility. Existing emission limits and operational conditions were carried forward unchanged from ADP 04-2571R1. This permit was superseded in its entirety by ADP 10-2929.

ADP 04-2571R1 (issued November 28, 2006) approved installation of the Fuel Gas Heater. The unit was identified as a natural gas fired fuel heater with a maximum rated heat input of 8.7 MMBtu/hr. The identified purpose of the Fuel Gas Heater was to temper incoming natural gas received from a high pressure supply point. All other emission limits and operational conditions were carried forward from ADP 04-2571. This permit was superseded in its entirety by ADP 04-2571R2.

ADP 04-2571 (issued September 16, 2004) approved construction of a combustion turbine powered electrical generating station. This permitting action was a simple renewal of the project proposal originally approved in ADP 01-2342R1. There were no substantive technical differences between ADP Application CO-777 and ADP Application CO-724. This permit was superseded in its entirety by ADP 04-2571R1.

ADP 01-2342R1 (issued May 6, 2002) modified the project proposal approved in ADP 01-2342 to include duct firing. Nominal rated output of the generating plant increased from 248 MW to 319 MW. All other emission limits and operational conditions were carried forward from ADP 01-2342. This permit expired upon expiration of an 18 month construction window.

ADP 01-2342 (issued June 4, 2001) approved construction of a combustion turbine powered electrical generating plant. The approved facility was configured with a single natural gas fired combustion turbine and unfired HRSG. Nominal rated output of the generating plant was 248 MW. This permit was superseded in its entirety by ADP 01-2342R1.

FUTURE REQUIREMENTS:

No future requirements have been identified.

VII. EXPLANATION OF MONITORING TERMS AND CONDITIONS

The monitoring terms listed below incorporate formal monitoring taken from applicable regulations as well as 'gap-fill' monitoring designed to assure compliance for requirements that do not contain formal monitoring. For applicable requirements that have one-time applicability or apply primarily to equipment design or installation, SWCAA relies upon compliance certification by the responsible official to provide compliance assurance.

ADP 17-3230 contains monitoring requirements for most of the applicable requirements cited in this section. Those monitoring requirements are generally sufficient to assure compliance and have been carried forward in the air operating permit. In cases where ADP 17-3230 does not specify monitoring, monitoring provisions have been developed under 'gap-filling' to provide reasonable compliance assurance. For applicable requirements that apply to fundamental equipment design or installation, SWCAA relies upon compliance certification by the responsible official to provide compliance assurance.

General

M1. Visible Emissions Monitoring

This monitoring section is applicable to requirements drawn from SWCAA 400-040 and ADP 17-3230. These requirements limit visible emissions, but do not directly establish any specific regime of monitoring or recordkeeping. Consequently, SWCAA has implemented monitoring requirements under the "gap filling" provisions of WAC 173-401-615.

The monitoring scheme specified by this requirement is designed to provide periodic assurance of compliance, and identify potential visible emission violations in a timely fashion, prompting corrective action when necessary. A monthly inspection frequency is considered adequate to assure compliance with applicable opacity requirements based on this source's history of continued compliance and the fact that operation of the primary emission units at this facility (Combustion Turbine/HRSG, Cooling Tower, Emergency Generator) is not likely to cause visible emissions.

General

Fugitive Emissions/Fallout Monitoring M2.

This monitoring section is applicable to general requirements drawn from SWCAA 400-040, 400-070, and ADP 17-3230. These requirements do not establish a specific regime of monitoring or recordkeeping so SWCAA has implemented monitoring requirements under the "gap filling" provisions of WAC 173-401-615.

This monitoring requirement is designed to assure compliance through periodic visual inspections of the facility and prompt corrective action. A lack of visual emissions or material accumulation is considered indicative of compliance with the applicable particulate matter emission limits and work practices.

General

Particulate Matter Monitoring M3.

This monitoring section is applicable to maximum PM emission limits taken from SWCAA 400-050 and SWCAA 400-060. These requirements do not establish a specific regime of monitoring or recordkeeping so SWCAA has implemented monitoring and recordkeeping requirements under the "gap filling" provisions of WAC 173-401-615.

This monitoring requirement is designed to assure compliance through periodic facility inspections and prompt corrective action. Affected equipment is generally in compliance with the applicable emission limits unless the units are experiencing an upset of some type. A visual inspection of each unit while in operation provides a reasonable assurance that the equipment is not experiencing an upset. If evidence of an upset is observed, corrective action requirements result in the affected unit being promptly repaired or taken out of operation.

Regs 9-10

Regs 2-3, 8, 11

Regs 1, 13

General

M4. Complaint Monitoring

This monitoring section is applicable to general requirements drawn from SWCAA 400-040 and ADP 17-3230. These requirements do not directly establish any specific regime of monitoring or recordkeeping. Consequently, SWCAA has implemented monitoring requirements under the "gap filling" provisions of WAC 173-401-615.

Most of the affected applicable requirements prohibit unacceptable impacts on neighboring properties and/or surrounding populations. While many of the prohibited impacts might be observed from the facility itself, compliance with all provisions can not be assured by onsite observations alone (e.g., offsite odor impact). Therefore, this monitoring scheme relies on input from affected parties. The monitoring is designed to assure compliance through prompt complaint response and corrective action.

Combustion Turbine/HRSG

M5. Operations Monitoring

The applicable requirements cited in this monitoring section are requirements drawn from 40 CFR 60, 40 CFR 75, and ADP 17-3230. The affected requirements primarily involve monitoring and recording of operational parameters and CEMS data for the Combustion Turbine/HRSG. Calibration, audit, and maintenance activities related to the CEMS are also recorded under this monitoring provision. The information collected by this monitoring provision is used directly in calculating hourly emissions from the Combustion Turbine/HRSG and assuring compliance with applicable emission limits.

Combustion Turbine/HRSG

M6. SO₂, VOC, and PM Emission Monitoring

The applicable requirements cited in this monitoring section are drawn from 40 CFR 75, 40 CFR 60, SWCAA 400-040, and ADP 17-3230. The section is intended to assure compliance with SO₂, PM, and VOC emission limits applicable to the Combustion Turbine/HRSG.

SO₂ emissions are quantified by calculating hourly emissions based on recorded heat input and emission factors derived from the results of periodic fuel sulfur monitoring. The permittee has also opted to comply with the provisions of 40 CFR 75.11(d) by using the procedures in 40 CFR 75, Appendix D.

PM and VOC emissions are quantified by calculating hourly emissions based on recorded heat input and the most recent emission test data available expressed in units of lb/MMBtu.

Combustion Turbine/HRSG

M7. NO_X, CO, and NH₃ Continuous Emissions Monitoring Reqs 15-17, 21, 25 This monitoring section is drawn from ADP 17-3230, Condition 27 and Appendix B. The primary intent of the monitoring is to assure compliance with applicable emission limits from ADP 17-3230, Conditions 1 and 2. In addition, the specified monitoring fulfills applicable monitoring requirements from 40 CFR 75 and 40 CFR 60.4340 through the installation and maintenance of a CEMS for NO_X/CO.

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June 11, 2018

Reqs 4-5

Regs 6, 18-20, 28

Regs 15-21

Regs 15-17, 19-21

 NO_X emissions are quantified by calculating hourly emissions based on recorded heat input and CEMS data expressed in units of lb/MMBtu. The emission calculations are consistent with the methodology required for NO_X calculations by 40 CFR 75.12 (40 CFR 75, Appendix F). ADP 17-3230, Appendix B requires the NO_X CEMS to be maintained in accordance with the specifications of 40 CFR 75 and 40 CFR 60, Appendices B (Performance Specification 2) and F.

CO emissions are quantified by calculating hourly emissions based on recorded heat input and CEMS data expressed in units of lb/MMBtu. The emission calculations are consistent with the methodology in Equation 19-1 of 40 CFR 60, Appendix A. ADP 17-3230, Appendix B requires the CO CEMS to be maintained in accordance with the specifications of 40 CFR 60, Appendices B (modified Performance Specification 4A) and F.

NH₃ emissions are quantified by calculating hourly emissions based on recorded emission concentration (ppmv) and calculated stack flowrate. Stack flowrate is calculated using EPA Method 19 fuel factors and recorded heat input.

Combustion Turbine/HRSG

M8. Emission Testing

This monitoring section is drawn from ADP 17-3230, Condition 26 and Appendix A. The purpose of this testing is to periodically quantify emissions of NO_X , CO, NH_3 , PM, and VOC from the combustion turbine exhaust stack and to demonstrate compliance with applicable requirements.

The permittee is required to conduct periodic emission testing in accordance with Appendix A of the Permit. The testing protocol requires permittee to operate at base load with duct burners firing during the required testing. The permittee must emission test for NO_x , CO, and NH_3 on an annual basis. Emission testing for VOC and PM must be performed every 5 years. Initial emission testing for all affected pollutants was conducted on February 19-20, 2008.

Combustion Turbine/HRSG

M9. Startup and Shutdown Emissions

This monitoring section is intended to identify all periods of Combustion Turbine/HRSG startup and shutdown and quantify associated air emissions. Identification of each period of startup and shutdown serves as the basis for confirming compliance with applicable time limitations. The short term emission limits established in ADP 17-3230 for the Combustion Turbine/HRSG do not apply during periods of startup and shutdown, but air emissions during these events are still counted when determining compliance with applicable long term (annual) emission limits. Startup or shutdown emissions may be outside the measurement range of the corresponding CEMS, which will preclude the collection of validated emission data. In such cases, data substitution is used to quantify emissions.

Combustion Turbine/HRSG

M10. NO_X Emission Control System Trials

This monitoring section is drawn from ADP 17-3230, Condition 28 and Appendix C. The permittee is required to conduct emission trials for the Combustion Turbine/HRSG to establish the contemporary relationship between NO_X and NH_3 emission concentrations over a range of operational conditions. Emission trials are to be conducted annually, no later than the end of the first calendar quarter.

Reg 22

Reg 24

The emission trials are intended to support compliance with ADP 17-3230, Condition 12, which requires the permittee to operate the NO_X control system for the combustion/HRSG in such a manner as to minimize the arithmetic sum of NO_X and NH₃ emission concentrations. Monitoring the performance of the NO_X control system over a range of targeted NO_X emission levels allows the facility to quantify corresponding NH₃ slip as well as identify age/use related degradation of the system capabilities.

Cooling Tower

M11. Emission Monitoring

This monitoring section is drawn from ADP 17-3230, Condition 30. Permittee is required to record water circulation rate and hours of operation as well as periodically determine the Total Dissolved Solids (TDS) level of the cooling tower water. PM emissions are quantified by calculating monthly emissions based on recorded operation, circulation rate and tested solids content.

Emergency Generator

M12. Emission Monitoring Regs 6, 31-32, 34-38 This monitoring section is drawn from 40 CFR 63, Subpart ZZZZ and ADP 17-3230, Condition 25. Periodic testing is not required for this unit due to its status as emergency use only. Unit operation and maintenance must be documented in accordance with 40 CFR 63.6655 and 63.6660. Compliance with emission limits from ADP 17-3230 is demonstrated based on recorded hours of operation and emission factors taken from the Technical Support Document for ADP 17-3230.

To assure compliance with applicable SO₂ and fuel sulfur limitations, the permittee is required to maintain records of the sulfur content of fuel burned in the diesel engine. Fuel supplier certifications may be used in lieu of direct testing.

Combustion Turbine/HRSG

M13. Ammonia Concentration Monitoring

This monitoring section is drawn from ADP 17-3230, Condition 24. The NO_X emission control system for the Combustion Turbine/HRSG uses ammonia as an input to the catalyst system. The permittee uses aqueous ammonia for this purpose, and has opted to avoid the Risk Management Plan requirements of 40 CFR 68 by limiting the concentration of aqueous ammonia stored and used onsite to less than the exemption threshold of 20% by weight (40 CFR 68.130). This limitation is formalized as a permit limit in Reg 26 (ADP 17-3230, Condition 15). 40 CFR Part 68 does not require any specific monitoring to substantiate compliance with the exemption threshold so SWCAA has implemented monitoring requirements under the "gap filling" provisions of WAC 173-401-615 to assure compliance. The permittee is required to record the ammonia concentration of each material shipment received by the facility to demonstrate that only aqueous ammonia with a concentration of less than 20% is in use.

Reg 26

Reg 30

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VIII. EXPLANATION OF RECORDKEEPING TERMS AND CONDITIONS

K1. General Recordkeeping

The requirements cited in this recordkeeping section are drawn from provisions in WAC 173-401-615(2) and ADP 17-3230. Recordkeeping requirements have been separated into sub-categories for easier reference. The Acid Rain Program requires that pertinent records be maintained for at least three years from the date of the record. This period has been extended to five years as required by the general recordkeeping provisions of WAC 173-401-615(2)(c).

K2. Continuous Emission Data Recordkeeping

The requirements cited in this recordkeeping section are taken from applicable sections of 40 CFR 75 and ADP 17-3230. The type and format of data to be recorded is specified for operating conditions and emissions of Acid Rain affected units.

IX. EXPLANATION OF REPORTING TERMS AND CONDITIONS

R1. Deviations from Permit Conditions

The permittee is required to promptly report all permit deviations pursuant to WAC 173-401-615(3), SWCAA 400-107, and ADP 17-3230. Reporting timelines vary depending on the type of deviation involved.

The general timeline for deviation reporting (within 30 days following the end of the month of discovery) is cited in WAC 173-401-615(3) and ADP 17-3230, Condition 32. The timeline for reporting if the permittee wishes to claim excess emissions as unavoidable (within 48 hours of discovery) is defined in SWCAA 400-107 and ADP 17-3230, Condition 33. The timeline for deviations that pose a potential threat to human health and safety (within 12 hours of discovery) is taken directly from WAC 173-401-615(3). This reporting requirement is intended to include the reporting of noncompliant Combustion Turbine/HRSG startup and shutdown events as cited in ADP 17-3230 Condition 36.

In all cases, SWCAA may request a full written report of any deviation if determined to be necessary. Permit deviations are also to be identified in the subsequent quarterly report.

R2. Complaint Reports

The permittee is required to report all complaints to SWCAA within three business days of receipt. This reporting section is based on WAC 173-401-615(3), and SWCAA's definition of "prompt" for reporting of complaints. The intent is to ensure a timely and effective response to complaints by either the facility or SWCAA.

R3. Quarterly Reports

WAC 173-401-615(3) requires monitoring records and certification to be reported at least semiannually, but quarterly reporting of specified monitoring records is required by the Acid Rain Program and ADP 17-3230. Consequently, the Permit requires quarterly reporting. The type of data to be reported, and the format by which it is to be reported, is specified as "General Information" and "Acid Rain Data". The "General Information" elements are taken from WAC 173-401-615(3) and ADP 17-3230, Requirement 35. The "Acid Rain" elements are derived from requirements found in 40 CFR 75.64.

R4. Semi-Annual Reports

The permittee is required to submit a list of all deviations from permit conditions that have occurred in the preceding semi-annual period consistent with WAC 173-401-615(3). A Responsible Official must certify all reports previously submitted during the preceding semi-annual period if they have not otherwise been certified. No semi-annual report is necessary if all required information has been included in corresponding quarterly reports.

R5. Emission Inventory Reports

This reporting requirement is drawn from SWCAA 400-105 and ADP 17-3230, Condition 31. The permittee is required to submit an emissions inventory report to SWCAA by March 15th for the previous calendar year. A complete emissions inventory includes quantification of emissions from all emission units at the facility. SWCAA's Executive Director may extend the submittal date by up to 60 days, pursuant to SWCAA 400-105(1).

R6. Annual Compliance Certification

The permittee is required to report and certify compliance with all permit terms and conditions on an annual basis pursuant to SWCAA 401-630(5) and 40 CFR 72.90 (for the Combustion Turbine/HRSG). The permittee is required by 40 CFR 60.11(g) to consider credible evidence when submitting compliance certifications for NSPS affected units (Combustion Turbine/HRSG).

In the annual compliance certification for each Acid Rain affected unit, the permittee or designated representative must indicate whether the unit held allowances in its compliance subaccount not less than the unit's total SO_2 emissions during the calendar year covered by the annual report. The permittee is required to indicate in the certification whether the monitoring plan is current, the monitors are properly certified, and all emissions were accounted for by either direct monitoring or missing data procedures.

R7. Fuel Sulfur Content Reports

This reporting requirement is taken directly from ADP 17-3230, Condition 37. The permittee is required to submit fuel sulfur content monitoring results for the combustion turbine (ADP 17-3230, Condition 29) to SWCAA within 45 days of test completion.

R8. Emission Test Reports

This reporting requirement is taken from ADP 17-3230, Condition 37 and Appendices A, B and E. The permittee is required to notify SWCAA in advance of all required emission testing and submit a comprehensive test plan prior to testing. Emission test results and contemporaneous operational data must be reported to SWCAA within 45 days of test completion.

R9. Combustion Turbine/HRSG NO_X Emission Trial Reports

This reporting requirement is taken from ADP 17-3230, Condition 37 and Appendix C. Emission test results and associated operational data must be reported to SWCAA within 45 days of test completion.

R10. General Acid Rain Reports

This reporting requirement incorporates general Acid Rain reporting requirements found in 40 CFR 75.60, 75.61 and 75.63. Advance notification within specified time periods is required for the date each unit commences commercial operation, CEMS/COMS certification and recertification tests, and relative accuracy test audits for Acid Rain affected units. The reports identified in 40 CFR

75.61 and 75.63 concern notification and application for CEMS certification and recertification for affected units. An application for certification or recertification is required for Acid Rain affected units. Each certification application is to be submitted in electronic or paper format as specified by the EPA Administrator.

X. COMPLIANCE HISTORY

SWCAA has not issued any Field Notices of Correction (FNOC) and/or Field Notices of Violation (FNOV) to Mint Farm during the last permit term.

XI. TITLE V PERMIT ACTIONS

1. Current Permitting Action

Renewal Permit (SW08-15-R1)

June 12, 2015
July 2, 2015
July 2, 2015
February 22, 2018
April 11, 2018
June 11, 2018

2. Previous Permitting Actions

Initial Permit (SW08-15-R0)

Application received:	September 9, 2008
Application complete:	September 19, 2008
Application sent to EPA:	September 24, 2008
Draft permit issued:	April 25, 2011
Proposed permit issued:	June 7, 2011
Final permit issued:	June 13, 2011

XII. PERMIT APPENDICES

Appendix A Combustion Turbine/HRSG - Emission Testing Requirements

Appendix A contains an emission testing protocol to be used when conducting periodic testing of the Combustion Turbine/HRSG. The testing protocol is taken directly from ADP 17-3230, Appendix A *Emission Testing Requirements Combustion Turbine/HRSG*.

Appendix B Combustion Turbine/HRSG - Continuous Monitoring Requirements

Appendix B contains performance specifications for the continuous monitoring systems installed on the Combustion Turbine/HRSG. The specifications are applicable to the CEMS for NO_X, O₂, and CO, and the PEMS for NH₃. The performance specifications are taken directly from ADP 17-3230, Appendix B *Continuous Monitoring Requirements Combustion Turbine/HRSG*.

Appendix C Combustion Turbine/HRSG - Fuel Sulfur Monitoring Requirements

Appendix C contains a monitoring protocol to be used in determining the fuel sulfur content of fuel gas fired in the Combustion Turbine/HRSG. The testing protocol is taken directly from ADP 17-3230, Appendix D *Fuel Sulfur Monitoring Requirements Combustion Turbine/HRSG*.

Appendix D Combustion Turbine/HRSG - NOx Control System Emission Trials

Appendix D contains a testing protocol to be used in determining the contemporaneous relationship between NO_X and NH_3 emission concentrations over a range of operating conditions in the Combustion Turbine/HRSG. The monitoring protocol is taken directly from ADP 17-3230, Appendix C *NO_X* Control System Emission Trials Combustion Turbine/HRSG.

Appendix E Acid Rain Permit No. SW-ARP-3-R1

Appendix E contains Mint Farm's renewal Acid Rain Application and Permit. The renewal permit (SW-ARP-3-R1) will be issued concurrent with this Air Operating Permit, and will remain effective through the expiration date of this Air Operating Permit.

XIII. RESPONSE TO PUBLIC COMMENT

SWCAA issued a draft of AOP SW08-15-R1 on February 22, 2018. Notice of the draft permit was sent to EPA and affected states on February 22, 2018. No comment was received from EPA or any affected state.

A 30 day public comment period was provided for the draft permit. Notice of the comment period was published in the local newspaper of record on February 27, 2018 and in the Washington Permit Register on February 23, 2018. The public comment period closed on March 29, 2018. Public comment on the draft permit was received from the following parties:

Robert Kaminski, citizen (email – 2/27/2018) Merna Blagg, citizen (letter - 3/5/2018)

COMMENTS / COMMENT RESPONSE:

1) In permitting and environmental impact statement scoping, please include upstream gas emissions and pollution for these projects. This includes greenhouse gas emissions from extraction and distribution, hazardous chemical release from wells and pipelines, and climate impacts of all these. (Kaminski)

<u>SWCAA Response:</u> The current action is a renewal of the Air Operating Permit for an existing natural gas fired electrical generating station. Pursuant to RCW 43.21C.0381, decisions pertaining to the issuance, renewal, reopening, or revisions of an air operating permit are not subject to the general requirements of SEPA. Therefore, no determination or impact statement was prepared for this action.

- 2) Before issuing a renewal permit to Puget Sound Energy Mint Farm Generating Plant the 2 following points must be recognized and produced:
 - 1. Need D.E.I.S
 - 2. Need Public Hearing (Blagg)

<u>SWCAA Response - 1:</u> Pursuant to RCW 43.21C.0381, decisions pertaining to the issuance, renewal, reopening, or revisions of an air operating permit are not subject to the general requirements of SEPA so no determination or impact statement was prepared for this action.

<u>SWCAA Response - 2:</u> Pursuant to WAC 173-401-800(4), SWCAA may hold a public hearing for a draft permit renewal if it determines significant public interest exists. SWCAA has determined that significant public interest does not exist for this action so no public hearing will be held. This determination is based on the nature of the renewal permit and a lack of broad public response to the comment period.