

**Moss Landing Power Plant
NPDES Discharge Descriptions
March 2011**

Discharge Description Table

* Key: For descriptions of items numbered 1, 2 and 3 under the Potential Constituent column, see **Note 2** below.

Outfall No.	Discharge Name	Description	Volume	Discharge Frequency	* Potential Constituents
001	Stormwater run-off, Yard drains/PG&E Switchyards	Discharge 001 was originally used for once-through cooling for retired/demolished Units 1-5 until 1996, but only Stormwater is discharged now from the area north of Units 1-5 Turbine building and PG&E's 115 KV and 230 KV Switch Yards.	6.0×10^4	Intermittent (October - May)	Two storms a year are tested for Oil & Grease, pH, Conductivity, Total Suspended Solids and Iron.
002	Once-through Cooling Water	The total flow volume to Monterey Bay through Discharge 002 is a combination of once-through cooling water that supplies the main steam condensers for Units 1, 2, 6 and 7 and miscellaneous in-plant waste streams (002A through 002E9). Biofouling control is accomplished using an oxidant. This discharge is primarily seawater.	12.24×10^8	Continuous	Seawater and sodium hypochlorite (1, 2, & 3 due to operation, testing and maintenance activities).
002A	Intake Screen Wash	Cooling water debris and impinged organisms from Moss Landing Harbor are washed from the traveling screens at the Intake structure. The screen wash water is directed back into the Intake Circulating Water Pumps area where it is combined with the once-through cooling water. Intakes Screen Trash Basket overflow is discharged to Discharge 004B in Moss Landing Harbor.	1.3×10^6	Intermittent, daily	Seawater and rainwater
002B	Seawater Evaporator Blowdown (brine)	Filtered backwashes, concentrated dissolved solids and anti-scalant treatment aids, from the Seawater Evaporator, are discharged to the once-through cooling water (002). Distilled water from the Seawater Evaporator is used in Units 6&7 boilers and Units 1&2 Heat Recovery Steam Generators to make steam for the steam turbines.	5.5×10^5	Continuous, when operating	Seawater, trace sodium hydroxide, polyacrylate copolymer, and organic derivate of neutralized phosphoric acid.
002C	Yard Drains/Storm Water Runoff (Retired/Demolished Units 1 -5)	Stormwater from yard drains around retired/demolished Units 1-5 are discharged into the Intake Cooling Water Pumps area for Units 1&2, where the water is discharged to Discharge 002. If Units 1&2 are not operating the Stormwater is discharged to Discharge 004E.	2.1×10^4	Intermittent (October - May)	Two storms a year are tested for Oil & Grease, pH, Conductivity, Total Suspended Solids and Iron.
002D	Condensate Polisher Neutralization Tank	Waste regenerant liquid from the steam-cycle condensate demineralizers, for Units 6&7, is collected and neutralized in the Neutralization Tank before it is discharged to the cooling water (002), after it passes through the condensers.	3.6×10^4	Intermittent, daily (when operating Units 6&7)	Demineralized water, surfic acid, sodium hydroxide, sodium sulfate and ammonium sulfate.

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002E	Treated Wastewater Sump	This sump receives waste water from Discharges 002E1 through 002E9, where it is pumped to the Disengaging Basin, which discharges to Discharge 002.	3.0×10^5	Continuous	Potential Constituents from Discharges 002E1 through 002E9, below.
002E1*	Oil Water Separator	The oily water separator, with tertiary treatment equipment, receives and treats oily waste water from oil handling areas from retired/demolished Units 1-5, Units 6&7 and Units 1&2.	3.3×10^4	Intermittent, daily	Trace oil & grease and aluminum chloride (emulsion breaker).
002E2*	Filter Press Filtrate	Once a year metal cleaning waste sludge from boilers, Heat Recovery Steam Generators and Seawater Evaporator cleaning activities is filter pressed from three Surface Impoundments, with a permitted on site filter press. The filtrate is discharged to Discharge 002.	6.8×10^2	1-5 weeks once a year	Sodium hydroxide, trace diatomaceous earth. If from chemical cleaning, trace ethylenediaminetetraacetic acid (EDTA), carbonylhydrazide and (1 & 2, due to operation, testing and maintenance activities).
002E3*	Boiler Blowdown, Units 1 & 2	Units 1&2 Heat Recovery Steam Generators and the package boiler, used in start-up of Units 6&7, use boiler steam drum technology where the steam from the drums is continuously blowdown when in operation.	1.7×10^5	Continuous	Trace sodium hydroxide, sodium phosphate and ammonium hydroxide.
002E4*	Air Preheater/Fireside Stack Wash Water	The fireside components of Units 6&7 and Units 1&2 Heat Recovery Steam Generators accumulate ash from combustion that is periodically washed to prevent Fallout Type Particle from being released through the stacks. (Required by Air Pollution Control District) Waste water is collected & treated in Surface Impoundments where the treated water is discharged to Discharge 002E.	3.0×10^4	Intermittent, rarely	Sodium hydroxide, trace diatomaceous earth and (2, due to operation, testing and maintenance activities).
002E5*	Chemical Cleaning Wastewater	The steam side of Units 6&7 boilers (every 10-15 years) and Units 1&2 Heat Recovery Steam Generators (every 5-7 years) are chemically cleaned to remove accumulated deposits. Waste water is collected & treated in Surface Impoundments where the treated water is discharged to Discharge 002E.	1.1×10^3	Intermittent, rarely	Sodium hydroxide, trace diatomaceous earth, ethylenediaminetetraacetic acid (EDTA), carbonylhydrazide and (2, due to operation, testing and maintenance activities).
002E6*	Bearing Cooling Water	A corrosion inhibitor is used in this closed system to cool and protect bearings for the turbines, generators and auxiliary equipment.	2.5×10^2	Intermittent, daily	Trace sodium hydroxide, sodium nitrite and sodium molybdate.
002E7*	Boiler Lay up Water	The boilers are occasionally laid up for short periods of time with demineralized water and ammonia control, until the next startup.	7.0×10^2	Intermittent, rarely	Ammonium hydroxide. Trace sodium hydroxide, sodium phosphate, ammonium hydroxide and

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Outfall No.	Discharge Name	Description	Volume	Discharge Frequency	* Potential Constituents
002E8*	Seawater Evaporator Cleaning Waste	The sea water evaporator is chemically cleaned every 3-5 years. All these wastes waters are collected & treated in Surface Impoundments where the treated water is discharged to 002E.	2.0 x 10 ³	Intermittent, rarely	ethylenediaminetetraacetic acid (ETDA)
002E9*	Drains from Oil Handling Areas- Retired/Demolished Units 1-5, and Units 1, 2, 6 and 7	The oily water separator, with tertiary treatment equipment, receives and treats oily waste water from oil handling areas from retired Units 1-5, Units 6&7 and Units 1&2.	3.0 x 10 ⁴	Intermittent, daily	Trace oil & grease, aluminum chloride and (1, 2, & 3 due to operation, testing and maintenance activities).
003	Storm Water Runoff, to Moro Coho Slough	Stormwater from yard drains around Units1&2, the middle property area, PG&Es 500 KV Switchyard, area around Surface Impoundments, drainage along Dolan Road and area east of Units 1&2 to the PG&E Primary Gas Regulator Yard are discharged to Moro Coho Slough through Discharge 003.	1.3 x 10 ⁵	Intermittent	Two storms a year are tested for Oil & Grease, pH, Conductivity, Total Suspended Solids and Iron.
004A	Yard Drains & Storm Water Run-off (Units 6&7) to Moss Landing	Stormwater from yard drains around Units 6&7 are discharged to Moss Landing Harbor through the yard drains at Units 6&7 Intake.	1.2 x 10 ⁴	Intermittent	Two storms a year are tested for Oil & Grease, pH, Conductivity, Total Suspended Solids and Iron.
004B	Intakes Screen Trash Basket Over-flow for Units 1, 2, 6 & 7	Cooling water debris and impinged organisms from Moss Landing Harbor are washed from the traveling screens at the Intake structure (Discharge 002A). Any overflow is discharged to Discharge 004B in Moss Landing Harbor.	6.5 x 10 ³	Intermittent, daily	Seawater and rainwater
004C	Intakes Cleaning Wastewater for Units 1, 2, 6 & 7	Both Intakes are periodically cleaned of biofouling organisms by divers. During this process some cleaning water will be discharged into the Moss Landing Harbor.	6.0 x 10 ³	Intermittent, rarely	Seawater
004D	Intakes Heat Treatment to Normal Operation	Units 6&7 use heat treatments to control biofouling (Intakes to the condensers) by raising the temperature up to 40° F above ambient using stop gates. When the treatment is finished and the Circulating Water Pump is restarted and the stop gates opened at the Intake, some heated water is released to the Moss Landing Harbor.	5.5 x 10 ⁴	Intermittent, rarely	Seawater
004E	Intakes Yard Drain and Storm Water Run-off for Units 1, 2, 6 & 7	Stormwater at both intakes is discharged back to Moss Landing Harbor.	2.0 x 10 ³	Intermittent	Two storms a year are tested for Oil & Grease, pH, Conductivity, Total Suspended Solids and Iron.

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Note 1: Under normal operating conditions only sodium hypochlorite is routinely present at detectable concentrations in Discharge 002. Less frequently, during maintenance activities (e.g. metal cleaning) some of the chemicals in **Note 2** below may be present in sub-flowpaths that flow into the 002 flowpath at potentially trace detectable concentrations.

Note 2: The following descriptions of potential discharge constituents are referenced by number in the "Potential Constituents" column of the table above:

1. Corrosion inhibitors used in the closed bearing cooling water systems may be present in the discharge due to operation, testing and maintenance activities. Corrosion inhibitors include: sodium molybdate, sodium nitrite and sodium hydroxide.
2. Chemicals used in the feed water system for the steam side of the boilers and heat recovery steam generators, may be present in the discharge due to operation, testing and maintenance activities. These chemicals may include: pH control agent (ammonium hydroxide), ion exchange regeneration agents (sulfuric acid and sodium hydroxide), reducing agent and a corrosion inhibitor (sodium phosphate).
3. Chemicals used in metal cleaning activities for scale/sludge material dissolution that may be present in the discharge during outages or cleanings are: cleaning agent (ethylenediaminetetraacetic acid (EDTA)), pH control agent (sodium hydroxide) and a metal passivation agent (carbohydrazide).