NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

State Pollutant Discharge Elimination System (SPDES)
DISCHARGE PERMIT

Industrial Code:	4911	SPDES Number:	**NY0005193**
Discharge Class (CL):	03	DEC Number:	**2-6304-00024/00004**
Toxic Class (TX):	T	Effective Date (EDP):	**11/01/2012**
Major Drainage Basin:	17	Expiration Date (ExDP):	**10/31/2017**
Sub Drainage Basin:	02	Modification Dates:(EDPM)	
Water Index Number:	ER (0.3 - 10.1)		
Compact Area:	IEC		

This SPDES permit is issued in compliance with Title 8 of Article 17 of the Environmental Conservation Law of New York State and in compliance with the Clean Water Act, as amended, (33 U.S.C. §1251 et.seq.)(hereinafter referred to as "the Act").

PERMITTEE NAME AND ADDRESS

Name:	TC Ravenswood , LLC	Attention:	William C. Taylor, Vice President
Street:	110 Turnpike Road, Suite 203		
City:	Westborough	State: MA	Zip Code: 01581

is authorized to discharge from the facility described below:

FACILITY NAME AND ADDRESS

Name:	Ravenswood Generating Station		
Location (C,T,V):	Long Island City	County:	Queens
Facility Address:	38-54 Vernon Boulevard		
City:	Long Island City	State: NY	Zip Code: 11101
NYTM -E:		NYTM - N:	
From Outfall No.:	001 at Latitude: 40 ° 45 ' 31 "	& Longitude: 73 ° 56 ' 54 "	
into receiving waters known as:	East River	Class: I	

and; (list other Outfalls, Receiving Waters & Water Classifications)
01A, 01C, 01D, 01E, 01F, 01G, 01H, 004, 006, 007, 008, 009, 010 &011 East River Class I

in accordance with: effluent limitations; monitoring and reporting requirements; other provisions and conditions set forth in this permit; and 6 NYCRR Part 750-1.2(a) and 750-2.

DISCHARGE MONITORING REPORT (DMR) MAILING ADDRESS

Mailing Name:	Ravenswood Generating Station		
Street:	38-54 Vernon Blvd.		
City:	Long Island City	State: NY	Zip Code: 11101
Responsible Official or Agent:	Kenneth A. Yager, Compliance Manager	Phone:	(718) 706-2702

This permit and the authorization to discharge shall expire on midnight of the expiration date shown above and the permittee shall not discharge after the expiration date unless this permit has been renewed, or extended pursuant to law. To be authorized to discharge beyond the expiration date, the permittee shall apply for permit renewal not less than 180 days prior to the expiration date shown above.

DISTRIBUTION:

C.O. BWP - Permit Coordinator
BWC
RWE
RPA
EPA Region II - Michelle Josilo
IEC
NYSDOH District Office

Deputy Chief Permit Administrator, Stuart M. Fox	
Address: Division of Environmental Permits 625 Broadway Albany, NY 12233-3505	
Signature:	Date: 10/ 1 / 12

ADDITIONAL OUTFALL LOCATION INFORMATION

OUTFALL	DESCRIPTION	LATITUDE	LONGITUDE	Receiving Stream/Class
01A*	Floor Drains and Fuel Oil Heating System Condensate	40° 45' 31"	73° 56' 54"	East River/Class I
01C*	Yard and Roof Drains	40° 45' 38"	73° 56' 54"	East River/Class I
01D*	Unit 40 Stormwater, Floor Drains, Air Cooled Condenser Wash Water, Boiler Blowdown, Ion Exchange Regeneration Discharge & Reverse Osmosis Reject Water	40° 45' 38"	73° 56' 54"	East River/Class I
01E*	Boiler Make-up Water Carbon Filter Backwash	40° 45' 32"	73° 56' 49"	East River/Class I
01F*	Boiler Make-up Water Prefilter Backwash	40° 45' 32"	73° 56' 49"	East River/Class I
01G*	Units 10, 20 & 30 Boiler Blowdown	40° 45' 32"	73° 56' 49"	East River/Class I
01H*	Boiler Make-up Water Demineralizer Regeneration	40° 45' 32"	73° 56' 49"	East River/Class I
004	Rainey Tank Farm - Containment Vault and Stormwater	40° 45' 48"	73° 56' 40"	East River/Class I
006	Stormwater and Combustion Turbine Dump Tanks	40° 45' 44"	73° 56' 43"	East River/Class I
007	Stormwater from Old Settling Ponds	40° 45' 32"	73° 56' 53"	East River/Class I
008	Unit 10 Screen Wash Return	40° 45' 33"	73° 56' 50"	East River/Class I
009	Unit 20 Screen Wash Return	40° 45' 33"	73° 56' 50"	East River/Class I
010	Unit 30 Screen Wash Return	40° 45' 37"	73° 56' 45"	East River/Class I
011	Stormwater from East Side of Units 10 & 20	40° 45' 30"	73° 56' 45"	East River/Class I

Notes:*Outfalls 01A, 01C, 01D, 01E, 01F, 01G & 01H all combine with the condenser cooling water to discharge via Outfall 001.

PERMIT LIMITS, LEVELS AND MONITORING DEFINITIONS

OUTFALL	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
	This cell describes the type of wastewater authorized for discharge. Examples include process or sanitary wastewater, storm water, non-contact cooling water.	This cell lists classified waters of the state to which the listed outfall discharges.	The date this page starts in effect. (e.g. EDP or EDPM)	The date this page is no longer in effect. (e.g. ExDP)

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQ.	SAMPLE TYPE
e.g. pH, TRC, Temperature, D.O.	The minimum level that must be maintained at all instants in time.	The maximum level that may not be exceeded at any instant in time.	SU, °F, mg/l, etc.		

PARA-METER	EFFLUENT LIMIT	PRACTICAL QUANTITATION LIMIT (ML)	ACTION LEVEL	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE
	Limit types are defined below in Note 1. The effluent limit is developed based on the more stringent of technology-based standards, required under the Clean Water Act, or New York State water quality standards. The limit has been derived based on existing assumptions and rules. These assumptions include receiving water hardness, pH and temperature; rates of this and other discharges to the receiving stream; etc. If assumptions or rules change the limit may, after due process and modification of this permit, change.	For the purposes of compliance assessment, the analytical method specified in the permit shall be used to monitor the amount of the pollutant in the outfall to this level, provided that the laboratory analyst has complied with the specified quality assurance/quality control procedures in the relevant method. Monitoring results that are lower than this level must be reported, but shall not be used to determine compliance with the calculated limit. This ML can be neither lowered nor raised without a modification of this permit.	Action Levels are monitoring requirements, as defined below in Note 2, that trigger additional monitoring and permit review when exceeded.	This can include units of flow, pH, mass, Temperature, concentration. Examples include µg/l, lbs/d, etc.	Examples include Daily, 3/week, weekly, 2/month, monthly, quarterly, 2/yr and yearly.	Examples include grab, 24 hour composite and 3 grab samples collected over a 6 hour period.

Note 1: DAILY DISCHARGE: The discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for the purposes of sampling. For pollutants expressed in units of mass, the 'daily discharge' is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the 'daily discharge' is calculated as the average measurement of the pollutant over the day. DAILY MAX: The highest allowable daily discharge. DAILY MIN: The lowest allowable daily discharge. MONTHLY AVG (daily avg): The highest allowable average of daily discharges over a calendar month, calculated as the sum of each of the daily discharges measured during a calendar month divided by the number of daily discharges measured during that month. RANGE: The minimum and maximum instantaneous measurements for the reporting period must remain between the two values shown. 7 DAY ARITHMETIC MEAN (7 day average): The highest allowable average of daily discharges over a calendar week. 12 MRA (twelve month rolling avg): The average of the most recent twelve month's monthly averages. 30 DAY GEOMETRIC MEAN (30 d geo mean): The highest allowable geometric mean of daily discharges over a calendar month, calculated as the antilog of : the sum of the log of each of the daily discharges measured during a calendar month divided by the number of daily discharges measured during that month. 7 DAY GEOMETRIC MEAN (7 d geo mean): The highest allowable geometric mean of daily discharges over a calendar week.

Note 2: ACTION LEVELS: Routine Action Level monitoring results, if not provided for on the Discharge Monitoring Report (DMR) form, shall be appended to the DMR for the period during which the sampling was conducted. If the additional monitoring requirement is triggered as noted below, the permittee shall undertake a short-term, high-intensity monitoring program for the parameter(s). Samples identical to those required for routine monitoring purposes shall be taken on each of at least three consecutive operating and discharging days and analyzed. Results shall be expressed in terms of both concentration and mass, and shall be submitted no later than the end of the third month following the month when the additional monitoring requirement was triggered. Results may be appended to the DMR or transmitted under separate cover to the same address. If levels higher than the Action Levels are confirmed, the permit may be reopened by the Department for consideration of revised Action Levels or effluent limits. The permittee is not authorized to discharge any of the listed parameters at levels which may cause or contribute to a violation of water quality standards. The additional monitoring requirement is triggered upon receipt by the permittee of any monitoring results in excess of the stated Action Level.

PERMIT LIMITS, LEVELS AND MONITORING

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
001	Main Discharge (See footnote 1)	East River	11/01/2012	10/31/2017

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	9.0	SU	Weekly	Grab	5

PARAMETER	EFFLUENT LIMIT or CALCULATED LEVEL		ACTION LEVEL	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Daily Avg.	Daily Max.					
Flow	Monitor	Monitor		MGD	Hourly	Pump Log	1
Discharge Temperature	Monitor	104.2		°F	Continuous	Recorder	2,5
Intake-Discharge Temperature Difference	Monitor	23.0		°F	Continuous	Recorder	
Net Addition of Heat	Monitor	10.7 x 10E9		BTU/Hr	Monthly	Calculation	
Total Residual Chlorine	Monitor	0.075		mg/l	Continuous	Grab	3,4,5

OUTFALL Nos.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
01A	Floor Drains and Fuel Oil Heating System Condensate	East River via Outfall 001	11/01/2012	10/31/2017

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	9.0	SU	Monthly	Grab	6

PARAMETER	EFFLUENT LIMIT or CALCULATED LEVEL		ACTION LEVEL	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Avg.	Daily Max.					
Flow	NA	Monitor		GPM	Monthly	Calculated	6
Oil & Grease	15	15		mg/l	Weekly	Grab	6
Suspended Solids, Total	30	100		mg/l	Monthly	Grab	6

OUTFALL Nos.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
01D	Unit 40 Stormwater, Floor Drains, Air Cooled Condenser Wash Water, Boiler Blowdown, Ion Exchange Regeneration & Reverse Osmosis Reject Water	East River via Outfall 001	11/01/2012	10/31/2017

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	9.0	SU	Weekly	Grab	7

PARAMETER	EFFLUENT LIMIT or CALCULATED LEVEL		ACTION LEVEL	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Avg.	Daily Max.					
Flow	Monitor	Monitor		GPD	Weekly	Calculated	7
Oil & Grease	15	15		mg/l	Weekly	Grab	7
Suspended Solids	30	100		mg/l	Weekly	Grab	7
Ammonia	NA	Monitor		mg/l	Monthly	Grab	7

Footnotes listed on page 8 of this permit.

PERMIT LIMITS, LEVELS AND MONITORING (continued)

OUTFALL Nos.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
01E, 01F & 01H	Boiler Make-up Water Carbon Filter Backwash (01E), Pre-Filter Backwash (01F) & Demineralizer Regeneration (01H)	East River via Outfall 001	11/01/2012	10/31/2017

PARAMETER	EFFLUENT LIMIT or CALCULATED LEVEL		ACTION LEVEL	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Avg.	Daily Max.					
Flow	NA	Monitor		GPM	Monthly	Calculated	7
Oil & Grease	15	15		mg/l	Semi-Annual	Grab	7
Suspended Solids, Total	30	100		mg/l	Monthly	Grab	7

OUTFALL Nos.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
01G	Units 10, 20 & 30 Boiler Blowdown (01G)	East River via Outfall 001	11/01/2012	10/31/2017

PARAMETER	EFFLUENT LIMIT or CALCULATED LEVEL		ACTION LEVEL	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Avg.	Daily Max.					
Flow	NA	Monitor		GPM	Monthly	Calculated	7
Oil & Grease	15	15		mg/l	Semi-Annual	Grab	7
Suspended Solids, Total	30	50		mg/l	Monthly	Grab	7
Ammonia	NA	Monitor		mg/l	Monthly	Grab	7

OUTFALL No.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
004	Rainy Tank Farm - Underground Fuel Tank Containment Vault and Stormwater	East River	11/01/2012	10/31/2017

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	9.0	SU	2/Month	Grab	

PARAMETER	EFFLUENT LIMIT or CALCULATED LEVEL		ACTION LEVEL	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Avg.	Daily Max.					
Flow	NA	Monitor		GPD	Monthly	Calculated	
Oil & Grease	Monitor	15		mg/l	2/Month	Grab	
Total Suspended Solids	Monitor	50		mg/l	2/Month	Grab	
Benzene	NA	50		ug/l	Quarterly	Grab	
Ethylbenzene	NA	45		ug/l	Quarterly	Grab	
Toluene	NA	50		ug/l	Quarterly	Grab	
Xylene, Total	NA	50		ug/l	Quarterly	Grab	

Footnotes listed on page 8 of this permit.

PERMIT LIMITS, LEVELS AND MONITORING (continued)

OUTFALL Nos.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
006	Gas Turbine Site - Combustion Turbine Dump Tank and Stormwater from Secondary Containment & Roof Drains	East River	11/01/2012	10/31/2017

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	9.0	SU	Weekly	Grab	

PARAMETER	EFFLUENT LIMIT or CALCULATED LEVEL		ACTION LEVEL	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Avg.	Daily Max.					
Flow	NA	Monitor		GPD	Monthly	Calculated	
Oil & Grease	Monitor	15		mg/l	Weekly	Grab	
Total Suspended Solids	Monitor	50		mg/l	Weekly	Grab	
Benzene	NA	50		ug/l	Quarterly	Grab	
Ethylbenzene	NA	45		ug/l	Quarterly	Grab	
Toluene	NA	50		ug/l	Quarterly	Grab	
Xylene, Total	NA	50		ug/l	Quarterly	Grab	

OUTFALL Nos.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
007	Stormwater from Old Settling Ponds	East River	11/01/2012	10/31/2017

PARAMETER	EFFLUENT LIMIT or CALCULATED LEVEL		ACTION LEVEL	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Avg.	Daily Max.					
Flow	Monitor	Monitor		GPD	Each Discharge	Calculated	
Oil & Grease	Monitor	15		mg/l	Each Discharge	Grab	
Total Suspended Solids	Monitor	50		mg/l	Each Discharge	Grab	
Benzene	Monitor	50		ug/l	Each Discharge	Grab	
Ethylbenzene	Monitor	45		ug/l	Each Discharge	Grab	
Toluene	Monitor	50		ug/l	Each Discharge	Grab	
Xylene, Total	Monitor	50		ug/l	Each Discharge	Grab	

Footnotes listed on page 8 of this permit.

PERMIT LIMITS, LEVELS AND MONITORING (continued)

OUTFALL Nos.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
011	Stormwater from East Side of Units 10 & 20	East River	11/01/2012	10/31/2017

PARAMETER	MINIMUM	MAXIMUM	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FOOTNOTES (FN)
pH	6.0	9.0	SU	Quarterly	Grab	8,9

PARAMETER	EFFLUENT LIMIT or CALCULATED LEVEL		ACTION LEVEL	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Avg.	Daily Max.					
Flow	NA	Monitor		GPD	Quarterly	Calculated	
Oil & Grease	NA	15		mg/l	Quarterly	Grab	8,9
Total Suspended Solids	NA	50		mg/l	Quarterly	Grab	8,9

OUTFALL Nos.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
01C	Stormwater	East River via Outfall 001	11/01/2012	10/31/2017
008, 009 & 010	Units 10, 20 & 30 Screen Wash Return	East River	11/01/2012	10/31/2017
NO MONITORING REQUIRED				

OUTFALL Nos.	WASTEWATER TYPE	RECEIVING WATER	EFFECTIVE	EXPIRING
NA	Tank Test Water (See footnote 10)	East River	11/01/2012	10/31/2017

PARAMETER	EFFLUENT LIMIT or CALCULATED LEVEL		ACTION LEVEL	UNITS	SAMPLE FREQUENCY	SAMPLE TYPE	FN
	Monthly Avg.	Daily Max.					
Flow	Monitor	Monitor		GPD	Each Discharge	Instantaneous	10
Oil & Grease	Monitor	15		mg/l	Each Discharge	Grab	10
Chlorine, Total Residual	Monitor	0.10		mg/l	Each Discharge	Grab	10,11
Benzene	Monitor	20		ug/l	Each Discharge	Grab	10
Toluene	Monitor	20		ug/l	Each Discharge	Grab	10
Xylene, Total	Monitor	20		ug/l	Each Discharge	Grab	10
Ethylbenzene	Monitor	20		ug/l	Each Discharge	Grab	10

Footnotes listed on page 8 of this permit.

Footnotes

1 Main Discharge Outfall 001 includes condenser cooling water and discharges from outfalls 01A, 01C, 01D, 01E, 01F, 01G and 01H.

2 These limitations may be exceeded during periods when one or more condensing units are operating with only one circulating water pump (per unit), due to pump breakdown, routine maintenance, forced outage or other technical problems, (e.g., equipment failure). In the event of pump breakdown, the permittee shall take corrective action as soon as possible. Where possible, routine pump maintenance resulting in these limitations being exceeded, should be avoided during June-September. The permittee shall indicate on the Discharge Reporting Form: (1) which circulating water pumps, if any, were not in operation; (2) the dates and times such pumps were not operating; (3) the reason(s) for such pumps not operating; and (4) the period(s) (dates and times) during which these limitations were exceeded. In no case shall these limitations be exceeded more than 5% of the time during the operating year.

3 The period of chlorination shall be limited to two hours per day per condenser unit. The individual units shall be treated separately.

4 Monitoring is only required during the period of condenser chlorine treatments and discharge.

5 Samples for monitoring pH, temperature and chlorine are to be collected within the discharge tunnels.

6 Samples to be taken from the Oil/Water Separator discharge prior to any mixing with other discharges.

7 Samples to be taken from the discharge outfall prior to any mixing with other discharges.

8 Sample to be collected from the first manhole upstream of the junction with the NYC DEP storm sewer.

9 Stormwater is to be sampled as a grab sample collected from the discharge of a storm event with at least 0.1 inch of precipitation (defined as a "measurable" storm event), providing the interval from the preceding measurable storm event is at least 72 hours. The grab sample must be taken during the first 30 minutes of the stormwater discharge.

10 **Tank Test Water Discharge Requirements**
Tanks being hydrostatically tested must be free of product and cleaned. The Regional Water Manager must be informed at least two business days prior to the discharge of tank test water.

Any discharge of tank test water must be done under the direct supervision of plant personnel. Samples from the tank must be taken prior to discharge from various levels within the tank (top, middle, bottom). If sampling shows conformance with effluent limitations, discharge may be initiated. If effluent limitations are not attained, additional measures must be implemented to attain compliance prior to initiation of discharge.

A visual check of the discharge must be made for the presence of oil and floating substances. Data associated with tank test water shall be kept, along with log of visual observations, for a period of five years and be made available to Department personnel upon request.

The discharge of tank test water must be done in a manner that minimizes erosion of soil or sediment and does not cause flooding in the area of discharge. It must be done in a manner that minimizes the impact on the fisheries.

11 Required when a chlorinated supply such as that from a municipal system is used for tank testing purposes.

A. ADDITIONAL REQUIREMENTS

1. There shall be no discharge of the following wastes to surface waters or groundwater of the State; fly ash and bottom ash, sluice wastes, evaporator blowdown, or boiler and metal cleaning wastewater. Boiler and metal cleaning wastewater shall be disposed of by incineration in the plant boilers in accordance with the facility's Title V air permit or be collected and transported for treatment and disposal by an wastewater treatment facility capable of treating these wastewaters.

2. The permittee shall submit on a yearly basis a report to the Department's offices in Albany and Region 2 by the 28th of the month following the end of the annual period. This annual report must include:

   a. Daily minimum, average and maximum station electrical output;

   b. Daily minimum, average and maximum cooling water usage (directly or indirectly measured or calculated);

   c. Daily minimum, average and maximum intake and discharge temperatures;

   d. Values reported in a, b and c shall be based upon measurements taken on an hourly basis. Temperature readings may be obtained from a continuous recording device. This requirement is not a substitute for other monitoring requirements.

3. There shall be no visible sheen of oil and grease from discharges at any outfall.

4. In all instances chlorine shall be:

   a. kept to the minimum amount which will maintain plant operating efficiency; and

   b. eliminated when intake water temperature is below 40 ^{o}F unless failure to apply chlorine below 40 ^{o}F is shown to adversely affect plant operating efficiency.

5. Discharge from the emergency flood pumps for Units 10, 20 and 30 to the main discharge outfall 001 will be allowed under this permit provided that the permittee:

   a. collect a grab sample of the flood pump discharge for each unit and each discharge event to be analyzed for pH, total suspended solids and oil & grease;

   b. notify regional water staff within 1 business day of operation of the flood pumps;

   c. send copies of the monitoring results to regional water staff upon receipt with a cover letter summarizing operation of the emergency flood pumps for that event; and

   d. provide a written description of the best management practices that will be used to minimize the discharge of contaminants during emergency flood pump operation in the facility's Best Management Plan required under condition C.2 of the SPDES permit.

6. All thermal discharges to the waters of the State shall assure the protection and propagation of a balanced, indigenous population of shellfish, fish and wildlife in and on the body of water as provided in 6NYCRR Part 704.1(a). The thermal plume resulting from this facility's discharge may not exceed 90 ^{o}F (Part 704.2(b)(5)(I) of the State Water Quality Thermal Criteria) except within a designated mixing zone area of 2,580,000 sq. ft. (60 acres).

7. Notwithstanding any other requirements in this permit, the permittee shall also comply with all of the Water Quality Regulations promulgated by the Interstate Environmental Commission, including Section 1.01 and 2.05(f) as they relate to oil and grease.

A. ADDITIONAL REQUIREMENTS (continued)

8. Dilution is prohibited as a substitute for treatment. Except where expressly authorized to do so by an applicable Categorical Standard or the Commissioner or his duly authorized representative, no Industrial User shall ever increase the use of process water or, in any other way, attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve compliance with a permit effluent limitation requirement.

9. There shall be no discharge to groundwaters or surface waters of oil tank bottom water, PCBs, and/or any industrial or manufacturing process wastewater effluents from this facility. Included in the effluents categorized as industrial process effluents are wastewater resulting from vehicle maintenance or washing operations. Washing operations are those cleaning operations which involve the use of detergents or other emulsifying chemicals.

   Tank bottoms water, vehicle maintenance and washing wastewater are not likely to be effectively treated by gravity separation alone and therefore are not permitted to be discharged. After review of an Engineering Submission for the treatment of tank bottoms, maintenance and/or washing wastewater, these prohibitions may be altered

10. When conducting the periodic testing of the foam fire suppression system as required by the Fire Department of New York (FDNY) the permittee shall:

    a. notify regional water staff at least 3 business days prior to testing;

    b. direct all foam to a temporary containment system at the facility; and

    c. use best efforts to contain, collect and dispose of the foam.

B. BIOLOGICAL MONITORING REQUIREMENTS

All submissions under this section should provide:
Two (2) copies to the Steam Electric Unit Leader;
One (1) copy of the cover letter to the Division of Water
State Pollution Discharge Elimination System (SPDES)
Compliance Information Section; and
One (1) copy of the cover letter to the Regional Water Manager;
unless otherwise noted.

1. **Best Technology Available**
   The applicant has been required to perform the following mitigation activities to achieve best technology available (BTA) for the cooling water intake at the Ravenswood Generating Station. Installation of all technologies and or operational measures listed here have been completed.

   a. Installation of variable speed pumps and ancillary equipment at Ravenswood Units 10, 20 and 30 that will allow for a reduction in the volume of cooling water use;

   b. Upgrades to the existing traveling intake screens at Ravenswood Units 10, 20 and 30 to allow for the continuous operation of all traveling intake screens to increase impingement survival;

   c. Scheduling of a planned outage process that will require cooling water circulating pumps to be shut down to reduce the volume of cooling water use;

B. BIOLOGICAL MONITORING REQUIREMENTS (continued)

d. Low stress fish return lines, constructed at each unit, to return impinged fish directly to the East River.

2. **Performance Standards**

a. The technologies and operational procedures described in Condition B.1, Best Technology Available, must achieve a reduction in impingement mortality of 90% for all fish species combined and 90% for winter flounder alone from the calculation baseline. Compliance with this performance standard shall be determined through the studies conducted under the Verification Monitoring Plan required in Condition B.4.

b. The technologies and operational procedures described in Condition B.1, Best Technology Available, must achieve a 65% reduction in entrainment from the calculation baseline. Compliance with this performance standard shall be determined through the studies conducted under the Verification Monitoring Plan required in Condition B.4.

3. **Technology Installation and Operation Plan**

a. The permittee submitted a Technology Installation and Operation Plan (TIOP), which was approved on August 29, 2007. This plan included:

(1) A schedule for installing and implementing the technologies and/or operational measures in Condition B 1(a) through (d) to meet the BTA requirements of 6 NYCRR Part 704.5 and 316(b) of the Clean Water Act; and

(2) The methodology for assessing the efficacy of these technologies and operational measures.

b. The permittee submitted a Supplemental Technology and Operation Review/Plan, which was approved on May 3, 2011.

4. **Verification Monitoring Plan**

a. The Verification Monitoring Plan (VMP) was approved on December 9, 2011. The VMP includes procedures to confirm that the performance standards for reducing impingement and entrainment required by this permit in Condition B.2. are being achieved, and contains the following:

(1) Use of a five year averaging period (aka, the VMP Study) to verify the full-scale performance of all BTA measures specified in Condition B.2. The average estimated reductions in impingement mortality and entrainment shall be based on:

i) a minimum two years of additional in-plant impingement and entrainment monitoring,
ii) existing in-plant impingement and entrainment monitoring data,
iii) actual water use at the station during the averaging period, and
iv) any other relevant information;

(2) A description of the frequency and duration of monitoring, the parameters to be monitored, and the basis for determining the parameters and the frequency and duration for monitoring;

(3) A schedule of implementation; and

(4) A draft proposed Standard Operation Procedure (SOP) that describes the sampling protocols for these monitoring studies.

The plan and SOP shall be updated as required by the Department. The permittee shall complete the VMP in accordance with the approved schedule. The VMP and approved schedule are enforceable conditions of this SPDES permit.

B. BIOLOGICAL MONITORING REQUIREMENTS (continued)

b. **A Draft report shall be submitted to the Steam Electric Unit Leader no later than 6 months after the completion of each year of the VMP Study**, summarizing results of the previous year of study.

c. Within **6 months of the completion of the VMP Study, the permittee must submit an approvable report to the Steam Electric Unit Leader that demonstrates compliance with Condition B.2.** of this permit and 316(b) of the Clean Water Act. If the VMP study shows that compliance with Condition B.2. has not been met, then the report shall propose additional mitigative measures, including the use of modified Ristroph type screens, to meet the Performance Standards in Condition B.2. The implementation schedule requires approval by the Department and shall be an enforceable condition of this permit

5. **Additional Reporting Requirements**

a. The permittee must maintain records of all data, reports and analysis pertaining to compliance with 6NYCRR Part 704 and Section 316(b) CWA for a period no less than 10 years from EDP (11/01/2012).

b. **The permittee must submit status reports at EDP + 2.5 years (11/01/2014) and ExDP (10/31/2017).** At a minimum, these status reports must include a description of the operational status of the facility during the preceding two years and compliance with Condition B.2. through B.5. of this permit.

6. Modification of the facility cooling water intake must not occur without prior Department approval. The permittee must submit written notification, including detailed descriptions and plans, to the NYSDEC Steam Electric Unit; the Director of the Bureau of Water Compliance Program; and both the Regional Permit Administrator and the Regional Water Engineer, Region 2, at least 60 days prior to any proposed change which would result in the alteration of the permitted operation, location, design, construction or capacity of the cooling water intake structure. The permittee must submit with the written notification a demonstration that the change reflects the best technology available for minimizing adverse environmental impacts pursuant to 6 NYCRR Part 704.5 and Section 316(b) of the Clean Water Act. As determined by NYSDEC, a permit modification application in accordance with 6 NYCRR Part 621 may be required.

C. SPECIAL CONDITIONS - INDUSTRY BEST MANAGEMENT PRACTICES

1. General - The permittee shall develop, maintain, and implement a Best Management Practices (BMP) plan to prevent releases of significant amounts of pollutants to the waters of the State through plant site runoff; spillage and leaks; sludge or waste disposal; and stormwater discharges including, but not limited to, drainage from raw material storage.

   The BMP plan shall be documented in narrative form and shall include the 13 minimum BMPs and any necessary plot plans, drawings, or maps. Other documents already prepared for the facility such as a Safety Manual or a Spill Prevention, Control and Countermeasure (SPCC) plan may be used as part of the plan and may be incorporated by reference. A copy of the current BMP plan shall be submitted to the Department as required in item (2.) below and a copy must be maintained at the facility and shall be available to authorized Department representatives upon request.

2. Compliance Deadlines - **The Permittee has already developed and implemented the BMP plan.** The BMP plan shall be reviewed annually and shall be modified whenever: (a) changes at the facility materially increase the potential for releases of pollutants, (b) actual releases indicate the plan is inadequate, or (c) a letter from the Department identifies inadequacies in the plan. The permittee shall certify in writing, as an attachment to the December Discharge Monitoring Report (DMR), that the annual review has been completed. All BMP plan revisions (with the exception of SWPPPs - see item (4.B.) below) must be submitted to the Regional Water Manager within 30 days. Note that the permittee is not required to obtain Department approval of the BMP plan (or of any SWPPPs) unless notified otherwise. Subsequent modifications to or renewal of this permit does not reset or revise these deadlines unless a new deadline is set explicitly by such permit modification or renewal.

3. Facility Review - The permittee shall review all facility components or systems (including but not limited to material storage areas; in-plant transfer, process, and material handling areas; loading and unloading operations; storm water, erosion, and sediment control measures; process emergency control systems; and sludge and waste disposal areas) where materials or pollutants are used, manufactured, stored or handled to evaluate the potential for the release of pollutants to the waters of the State. In performing such an evaluation, the permittee shall consider such factors as the probability of equipment failure or improper operation, cross-contamination of storm water by process materials, settlement of facility air emissions, the effects of natural phenomena such as freezing temperatures and precipitation, fires, and the facility's history of spills and leaks. The relative toxicity of the pollutant shall be considered in determining the significance of potential releases.

   The review shall address all substances present at the facility that are identified in Tables 6-10 of SPDES application Form NY-2C (available at *http://www.dec.state.ny.us/website/dcs/permits/olpermits/form2c.pdf*) or that are required to be monitored for by the SPDES permit.

4. A. 13 Minimum BMPs - Whenever the potential for a release of pollutants to State waters is determined to be present, the permittee shall identify BMPs that have been established to prevent or minimize such potential releases. Where BMPs are inadequate or absent, appropriate BMPs shall be established. In selecting appropriate BMPs, the permittee shall consider good industry practices and, where appropriate, structural measures such as secondary containment and erosion/sediment control devices and practices. USEPA guidance for development of stormwater elements of the BMP is available in the September 1992 manual *Storm Water Management for Industrial Activities*, EPA 832-R-92-006 (available from NTIS, 703-487-4650, order #PB 92235969 or at http://cfpub.epa.gov/npdes/stormwater/swppp-nsgp.cfm). As a minimum, the plan shall include the following BMPs:

   1. BMP Pollution Prevention Team
   2. Reporting of BMP Incidents
   3. Risk Identification & Assessment
   4. Employee Training
   5. Inspections and Records
   6. Security
   7. Preventive Maintenance
   8. Good Housekeeping
   9. Materials/Waste Handling, Storage, & Compatibility
   10. Spill Prevention & Response
   11. Erosion & Sediment Control
   12. Management of Runoff
   13. Street Sweeping

   Note that for some facilities, especially those with few employees, some of the above BMPs may not be applicable. It is acceptable in these cases to indicate "Not Applicable" for the portion(s) of the BMP Plan that do not apply to your facility, along with an explanation.

C. SPECIAL CONDITIONS - INDUSTRY BEST MANAGEMENT PRACTICES (continued)

B. Stormwater Pollution Prevention Plans (SWPPPs) Required for Discharges of Stormwater From Construction Activity to Surface Waters - As part of BMP #11, a SWPPP shall be developed prior to the initiation of any site disturbance of one acre or more of uncontaminated area. Uncontaminated area means soils or groundwater which are free of contamination by any toxic or non-conventional pollutants identified in Tables 6-10 of SPDES application Form NY-2C. Disturbance of any size contaminated area(s) and the resulting discharge of contaminated stormwater is not authorized by this permit unless the discharge is under State or Federal oversight as part of a remedial program or after review by the Regional Water Manager; nor is such discharge authorized by any SPDES general permit for stormwater discharges. SWPPPs are not required for discharges of stormwater from construction activity to groundwaters.

The SWPPP shall conform to the *New York Standards and Specifications for Erosion and Sediment Control* and *New York State Stormwater Management Design Manual*, unless a variance has been obtained from the Regional Water Manager, and to any local requirements. The permittee shall submit a copy of the SWPPP and any amendments thereto to the local governing body and any other authorized agency having jurisdiction or regulatory control over the construction activity **at least 30 days prior to soil disturbance**. The SWPPP shall also be submitted to the Regional Water Manager if contamination, as defined above, is involved and the permittee must obtain a determination of any SPDES permit modifications and/or additional treatment which may be required prior to soil disturbance. Otherwise, the SWPPP shall be submitted to the Department only upon request. When a SWPPP is required, a properly completed *Notice of Intent* (NOI) form shall be submitted (available at *www.dec.state.ny.us/website/dow/toolbox/swforms.html*) prior to soil disturbance. Note that submission of a NOI is required for informational purposes; the permittee is not eligible for and will not obtain coverage under any SPDES general permit for stormwater discharges, nor are any additional permit fees incurred. SWPPPs must be developed and submitted for subsequent site disturbances in accordance with the above requirements. The permittee is responsible for ensuring that the provisions of each SWPPP is properly implemented.

5. Required Sampling For "Hot Spot" Identification - Development of the BMP plan shall include sampling of waste stream segments for the purpose of pollutant "hot spot" identification. The economic achievability of effluent limits will not be considered until plant site "hot spot" sources have been identified, contained, removed or minimized through the imposition of site specific BMPs or application of internal facility treatment technology. For the purposes of this permit condition a "hot spot" is a segment of an industrial facility (including but not limited to soil, equipment, material storage areas, sewer lines etc.) which contributes elevated levels of problem pollutants to the wastewater and/or stormwater collection system of that facility. For the purposes of this definition, problem pollutants are substances for which treatment to meet a water quality or technology requirement may, considering the results of waste stream segment sampling, be deemed unreasonable. For the purposes of this definition, an elevated level is a concentration or mass loading of the pollutant in question which is sufficiently higher than the concentration of that same pollutant at the compliance monitoring location so as to allow for an economically justifiable removal and/or isolation of the segment and/or B.A.T. treatment of wastewaters emanating from the segment.

6. Facilities with Petroleum and/or Chemical Bulk Storage (PBS and CBS) Areas - Compliance must be maintained with all applicable regulations including those involving releases, registration, handling and storage (6 NYCRR 595-599 and 612-614). Stormwater discharges from handling and storage areas should be eliminated where practical.

A. Spill Cleanup - All spilled or leaked substances must be removed from secondary containment systems as soon as practical and for CBS storage areas within 24 hours unless written authorization is received from the Department. The containment system must be thoroughly cleaned to remove any residual contamination which could cause contamination of stormwater and the resulting discharge of pollutants to waters of the State. Following spill cleanup the affected area must be completely flushed with clean water three times and the water removed after each flushing for proper disposal in an on-site or off-site wastewater treatment plant designed to treat such water and permitted to discharge such wastewater. Alternately, the permittee may test the first batch of stormwater following the spill cleanup to determine discharge acceptability. If the water contains no pollutants it may be discharged. Otherwise it must be disposed of as noted above. See *Discharge Monitoring* below for the list of parameters to be sampled for.

C. SPECIAL CONDITIONS - INDUSTRY BEST MANAGEMENT PRACTICES (continued)

B. Discharge Operation - Stormwater must be removed before it compromises the required containment system capacity. Each discharge may only proceed with the prior approval of the permittee staff person responsible for ensuring SPDES permit compliance. Bulk storage secondary containment drainage systems must be locked in a closed position except when the operator is in the process of draining accumulated stormwater. Transfer area secondary containment drainage systems must be locked in a closed position during all transfers and must not be reopened unless the transfer area is clean of contaminants. Stormwater discharges from secondary containment systems should be avoided during periods of precipitation. A logbook shall be maintained on site noting the date, time and personnel supervising each discharge.

C. Discharge Screening - Prior to each discharge from a secondary containment system the stormwater must be screened for contamination*. All stormwater must be inspected for visible evidence of contamination. Additional screening methods shall be developed by the permittee as part of the overall BMP Plan, e.g. the use of volatile gas meters to detect the presence of gross levels of gasoline or volatile organic compounds. If the screening indicates contamination, the permittee must collect and analyze a representative sample** of the stormwater. If the water contains no pollutants it may be discharged. Otherwise it must either be disposed of in an on site or off site wastewater treatment plant designed to treat and permitted to discharge such wastewater or the Regional Water Manager can be contacted to determine if it may be discharged without treatment.

D. Discharge Monitoring - Unless the discharge from any bulk storage containment system outlet is identified in the SPDES permit as an outfall with explicit effluent and monitoring requirements, the permittee shall monitor the outlet as follows:

(i) *Bulk Storage Secondary Containment Systems:*

(a) The volume of each discharge from each outlet must be monitored. Discharge volume may be calculated by measuring the depth of water within the containment area times the wetted area converted to gallons or by other suitable methods. A representative sample shall be collected of the first discharge* following any cleaned up spill or leak. The sample must be analyzed for pH, the substance(s) stored within the containment area and any other pollutants the permittee knows or has reason to believe are present**.

(b) Every fourth discharge* from each outlet must be sampled for pH, the substance(s) stored within the containment area** and any other pollutants the permittee knows or has reason to believe are present**.

(ii) *Transfer Area Secondary Containment Systems:*

The first discharge* following any spill or leak must be sampled for flow, pH, the substance(s) transferred in that area** and any other pollutants the permittee knows or has reason to believe are present**.

E. Discharge Reporting - Any results of monitoring required above, excluding screening data, must be submitted to the Department by appending them to the corresponding DMR. Failure to perform the required discharge monitoring and reporting shall constitute a violation of the terms of the SPDES permit.

F. Prohibited Discharges - **In all cases, any discharge which contains a visible sheen, foam, or odor, or may cause or contribute to a violation of water quality is prohibited.** The following discharges are prohibited unless specifically authorized elsewhere in this SPDES permit: spills or leaks, tank bottoms, maintenance wastewaters, wash waters where detergents or other chemicals have been used, tank hydrotest and ballast waters, contained fire fighting runoff, fire training water contaminated by contact with pollutants or containing foam or fire retardant additives, and unnecessary discharges of water or wastewater into secondary containment systems.

* Discharge includes stormwater discharges and snow and ice removal. If applicable, a representative sample of snow and/or ice should be collected and allowed to melt prior to assessment.

** If the stored substance is gasoline or aviation fuel then sample for oil & grease, benzene, ethylbenzene, naphthalene, toluene and total xylenes (EPA method 602). If the stored substance is kerosene, diesel fuel, fuel oil, or lubricating oil then sample for oil & grease and polynuclear aromatic hydrocarbons (EPA method 610). If the substance(s) are listed in Tables 6-8 of SPDES application form NY-2C then sampling is required. If the substance(s) are listed in NY-2C Tables 9-10 sampling for appropriate indicator parameters may be required, e.g. BOD5 or toxicity testing. Contact the facility inspector for further guidance. In all cases flow and pH monitoring is required.

WATER TREATMENT CHEMICAL (WTC) REQUIREMENTS

New or increased use of a WTC requires prior DEC review and authorization. At a minimum, the permittee must notify the DEC in writing of its intent to change WTC use by submitting a completed WTCFX Form for each WTC. The DEC will review that submittal and determine if a SPDES permit modification is necessary or whether WTC review and authorization may proceed outside of the formal permit administrative process. **The majority of WTC authorizations do not require formal SPDES permit modification.** WTCs which are used in closed systems and cannot be discharged or those which are discharged to municipal STP do not require DEC review. **WTC use and discharge questions or requests for forms** should be directed to the DEC staff person who developed your SPDES permit. If you are not sure who that is, contact the DEC staff person who last inspected your facility.

Examples of WTCs include biocides, coagulants, conditioners, corrosion inhibitors, defoamers, flocculants, scale inhibitors, sequestrants, and settling aids. DEC staff may also direct you to use a WTCFX Form for review and authorization of substances other than WTCs, e.g. process chemicals.

The permittee must demonstrate that the use and discharge of any WTCs containing **phosphorus**, tributary to the Great Lakes Basin or other ponded waters, is necessary and that no acceptable alternatives exist. Please note that in some cases your permit may require modification to regulate phosphorus.

Generic WTC Usage Requirements

(b) WTC use shall not exceed the rate reported by the permittee or authorized below, whichever is less.

(c) The discharge shall not cause or contribute to a violation of water quality or an exceedance of ambient water quality criteria.

(d) **The permittee must maintain a logbook** of all WTC use, noting for each WTC the date, time, exact location, and amount of each dosage, and, the name of the individual applying or measuring the chemical. The logbook must also document that adequate process controls are in place to ensure that excessive levels of WTCs are not used and subsequently discharged through outfalls. The permittee shall retain the logbook data for a period of at least 5 years. This period may be extended by request of the DEC.

(e) **The permittee shall provide an annual report**, attached to the December DMR, containing the following information for each outfall: the current list of WTCs authorized for use and discharge by the DEC, for each WTC the amount in pounds used during the year, identification of authorized WTCs the permittee no longer uses, and any other pertinent information.

List of WTCs Authorized for Use and Discharge*

Affected Outfall(s)	Dosage (lbs/day) Avg	Max	WTC Manufacturer and Product Name	WTC Function
001 (via 01D & 01G)	10.8	52.3	Ashland, Amercor	Corrosion inhibitor
001 (via 01G)	2.3	11.3	ICL Performance Products, Disodium Phosphate	Scale inhibitor
001 (via 01G)	17.8	86.4	Ashland, Mekor 6701	Corrosion inhibitor
001 (via 01H)	844	2552	Basic Chemical Solutions, Sodium Hydroxide 50%	Demineralizer regeneration
001 (via 01H)	995	3069	Basic Chemical Solutions, Sulfuric Acid 97%	Demineralizer regeneration
001 (via 01G)	9.9	48	ICL Performance Products, Trisodium Phosphate	Scale inhibitor

* - Authorized WTCs must either be listed above or identified in a letter sent to the permittee by the DEC subsequent to issuance of this permit page. In cases where a WTC is listed above and in a letter from the DEC, the more recent document will control.

DISCHARGE NOTIFICATION REQUIREMENTS

(a) Except as provided in (c) and (f) of these Discharge Notification Act requirements, the permittee shall install and maintain identification signs at all outfalls to surface waters listed in this permit. Such signs shall be installed before initiation of any discharge.

(b.) Subsequent modifications to or renewal of this permit does not reset or revise the deadline set forth in (a) above, unless a new deadline is set explicitly by such permit modification or renewal.

(c.) The Discharge Notification Requirements described herein do not apply to outfalls from which the discharge is composed exclusively of storm water, or discharges to ground water.

(d) The sign(s) shall be conspicuous, legible and in as close proximity to the point of discharge as is reasonably possible while ensuring the maximum visibility from the surface water and shore. The signs shall be installed in such a manner to pose minimal hazard to navigation, bathing or other water related activities. If the public has access to the water from the land in the vicinity of the outfall, an identical sign shall be posted to be visible from the direction approaching the surface water.

The signs shall have **minimum** dimensions of eighteen inches by twenty four inches (18" x 24") and shall have white letters on a green background and contain the following information:

N.Y.S. PERMITTED DISCHARGE POINT

SPDES PERMIT No.: NY_____

OUTFALL No. :____

For information about this permitted discharge contact:

Permittee Name: _____

Permittee Contact: _____

Permittee Phone: ( ) - ### - ####

(e) For each discharge required to have a sign in accordance with a), the permittee shall, concurrent with the installation of the sign, provide a repository of copies of the Discharge Monitoring Reports (DMRs), as required by the **RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS** page of this permit. This repository shall be open to the public, at a minimum, during normal daytime business hours. The repository may be at the business office repository of the permittee or at an off-premises location of its choice (such location shall be the village, town, city or county clerk's office, the local library or other location as approved by the Department). In accordance with the **RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS** page of your permit, each DMR shall be maintained on record for a period of three years.

(f) If, upon November 1, 1997, the permittee has installed signs that include the information required by 17-0815-a(2)(a) of the ECL, but do not meet the specifications listed above, the permittee may continue to use the existing signs for a period of up to five years, after which the signs shall comply with the specifications listed above.

(g) The permittee shall periodically inspect the outfall identification signs in order to ensure that they are maintained, are still visible and contain information that is current and factually correct

SCHEDULE OF COMPLIANCE

a) The permittee shall comply with the following schedule:

Action Code	Outfall Number(s)	Compliance Action	Due Date
	NA	Submit an approvable report to demonstrate compliance in accordance with permit condition in Biological Monitoring Requirement B.4.c.	VMP Study Completion + 6 months

The above compliance actions are one time requirements. The permittee shall comply with the above compliance actions to the Department's satisfaction once. When this permit is administratively renewed by NYSDEC letter entitled "SPDES NOTICE/RENEWAL APPLICATION/PERMIT", the permittee is not required to repeat the submission. The above due dates are independent from the effective date of the permit stated in the letter of "SPDES NOTICE/RENEWAL APPLICATION/PERMIT."

b) The permittee shall submit a written notice of compliance or non-compliance with each of the above schedule dates no later than 14 days following each elapsed date, unless conditions require more immediate notice as prescribed in 6 NYCRR Part 750-1.2(a) and 750-2. All such compliance or non-compliance notification shall be sent to the locations listed under the section of this permit entitled RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS. Each notice of non-compliance shall include the following information:

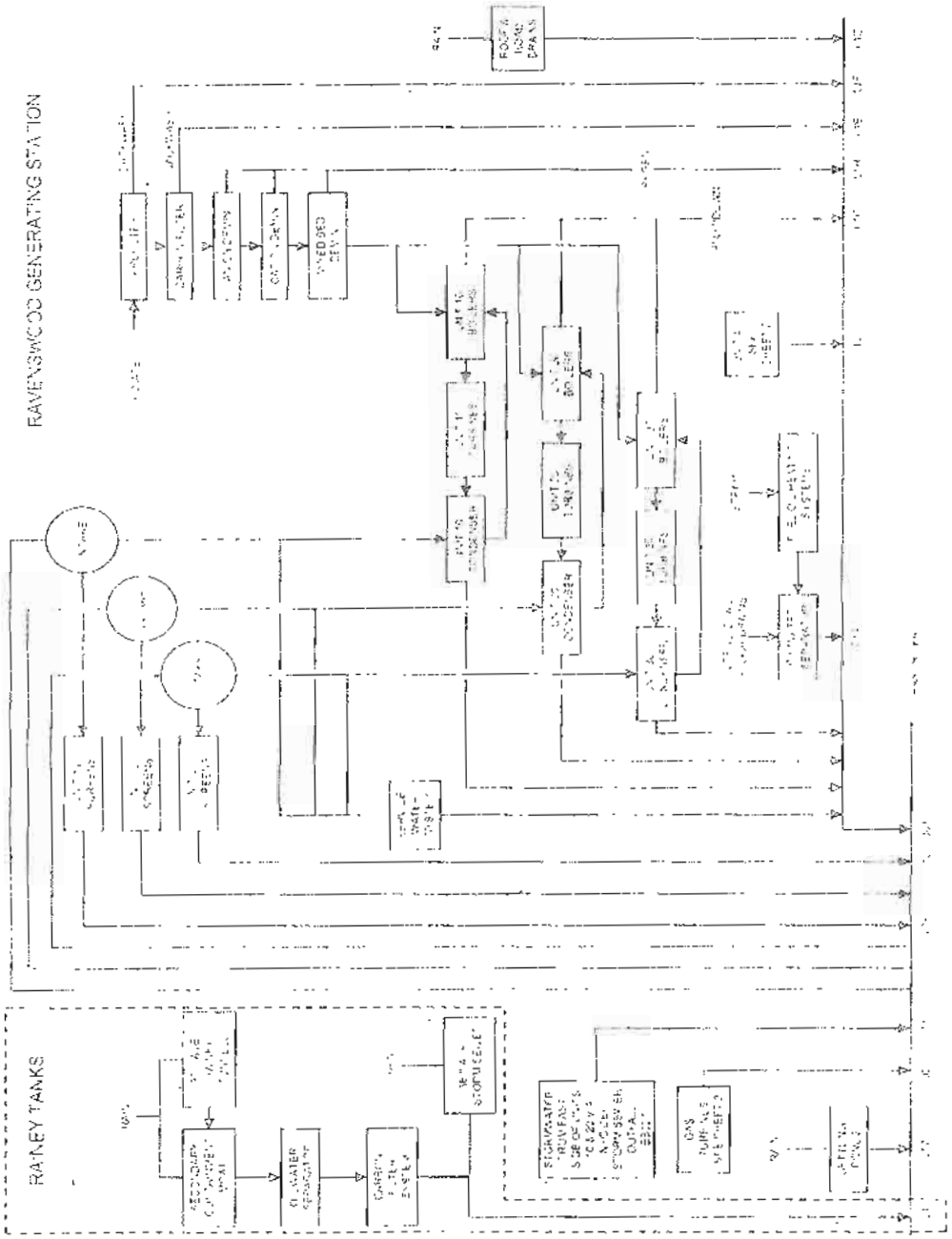
1. A short description of the non-compliance;

2. A description of any actions taken or proposed by the permittee to comply with the elapsed schedule requirements without further delay and to limit environmental impact associated with the non-compliance:
3. A description or any factors which tend to explain or mitigate the non-compliance; and
4. An estimate of the date the permittee will comply with the elapsed schedule requirement and an assessment of the probability that the permittee will meet the next scheduled requirement on time.

c) The permittee shall submit copies of any document required by the above schedule of compliance to NYSDEC Regional Water Manager at the location listed under the section of this permit entitled RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS and to the Bureau of Water Permits, 625 Broadway, Albany, N.Y. 12233-3505, unless otherwise specified in this permit or in writing by the Department.

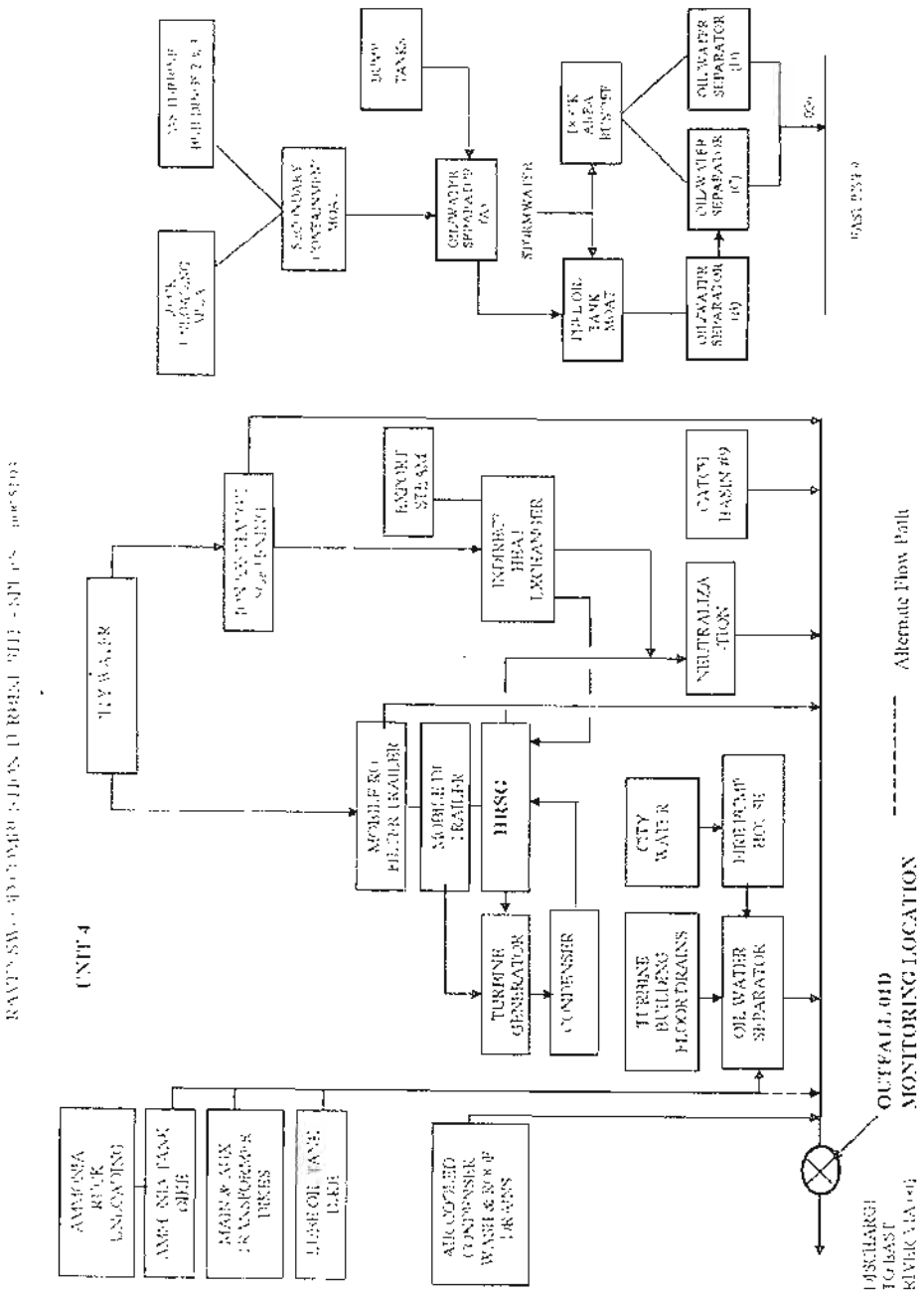
MONITORING LOCATIONS

The permittee shall take samples and measurements, to comply with the monitoring requirements specified in this permit, at the location(s) specified below.



MONITORING LOCATIONS

The permittee shall take samples and measurements, to comply with the monitoring requirements specified in this permit, at the location(s) specified below:



RECORDING, REPORTING AND ADDITIONAL MONITORING REQUIREMENTS

a) 6 NYCRR Part 750 is hereby incorporated by reference and its conditions are enforceable requirements of this permit. The permittee shall comply with all conditions set forth in this permit and with 6 NYCRR Part 750, including, but not limited to: additional monitoring and reporting requirements and conditions, including noncompliance reporting.

b) The monitoring information required by this permit shall be summarized, signed and retained for a period of at least five years from the date of the sampling for subsequent inspection by the Department or its designated agent. **Also, monitoring information required by this permit shall be summarized and reported by submitting;**

[X] (if box is checked) completed and signed Discharge Monitoring Report (DMR) forms for each __1__ month reporting period to the locations specified below. Blank forms are available at the Department's Albany office listed below. The first reporting period begins on the effective date of this permit and the reports will be due no later than the 28th day of the month following the end of each reporting period.

[ ] (if box is checked) an annual report to the Regional Water Engineer at the address specified below. The annual report is due by February 1 each year and must summarize information for January to December of the previous year in a format acceptable to the Department.

[ ] (if box is checked) a monthly "Wastewater Facility Operation Report..." (form 92-15-7) to the:
[ ] Regional Water Engineer and/or [ ] County Health Department or Environmental Control Agency specified below

Send the **original** (top sheet) of each DMR page to:
Department of Environmental Conservation
Division of Water, Bureau of Water Compliance
625 Broadway, Albany, New York 12233-3506
Phone: (518) 402-8177

Send an **additional copy** of each DMR page to:

Send the **first copy** (second sheet) of each DMR page to:
Department of Environmental Conservation
Regional Water Engineer, Region 2
One Hunters Point Plaza
47-20 21st Street
Long Island City, New York 11101
Phone: (718) 482-4930

c) Monitoring and analysis shall be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit.

d) More frequent monitoring of the discharge(s), monitoring point(s), or waters of the State than required by the permit, where analysis is performed by a certified laboratory or where such analysis is not required to be performed by a certified laboratory, shall be included in the calculations and recording of the data on the corresponding DMRs.

e) Calculations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in this permit.

f) Unless otherwise specified, all information recorded on the DMRs shall be based upon measurements and sampling carried out during the most recently completed reporting period.

g) Any laboratory test or sample analysis required by this permit for which the State Commissioner of Health issues certificates of approval pursuant to section 502 of the Public Health Law shall be conducted by a laboratory which has been issued a certificate of approval. Inquiries regarding laboratory certification should be directed to the New York State Department of Health, Environmental Laboratory Accreditation Program.

Industrial Fact Sheet

Treatment Plant Description

The Ravenswood Generating Station is located in Long Island City along the East River. The facility has been in operation since 1963 and consists of 3 steam electric generators (units 10, 20 and 30), a combined cycle combustion turbine/steam electric generator (unit 40) and 11 simple cycle combustion turbines. Units 10, 20 and 30 have rated capacities of 400, 400 and 1027 megawatts. The SPDES permit for this facility addresses the discharge of once through cooling water, stormwater, boiler blowdown, floor drains, condensate, intake screen wash/fish returns and discharges from several processes which provide enhanced treatment to the municipal drinking water so that it can be used in the facility's boiler system. The additional treatment processes for boiler water include filtration, ion exchange and reverse osmosis.

Summary of Proposed Permit Changes:

- Updated permit pages and conditions reflect current permit language, Department guidance , format and nomenclature
- Latitude and longitude information were corrected for outfall 009 and 010 to reflect information submitted in the permittee's application.
- The discharge limit for total chlorine residual at outfall 001 was reduced from 0.13 mg/l to 0.075 mg/l.
- Monthly average limits 30 mg/l for total suspended solids (TSS) have been added to internal outfalls 01D, 01E, 01F, 01G and 01H. This is a BPT limit required by 40 CFR 423.12(b)(3) for the Steam Electric Power Generating Point Source Category.
- Daily maximum limits for oil and grease of 15 mg/l have been included at internal outfalls 01E, 01F and 01H.
- Monthly average limits 15 mg/l for oil & grease have been added to internal outfalls 01D, 01E, 01F, 01G and 01H. This is a BPT limit required by 40 CFR 423.12(b)(3) for the Steam Electric Power Generating Point Source Category.
- Outfall 004 limits and monitoring for Aroclors 1254 and 1260 have been removed as results have been reported as not detected for the past 10 years.
- The discharge limit for ethylbenzene at outfalls 004, 006 and 007 was reduced from 50 ug/l to 45 ug/l based upon the aquatic chronic standard of 7.5 ug/l.
- PCB monitoring for stormwater at outfall 011 has been removed. This is a new stormwater outfall that was added to the SPDES permit as a modification issued on December 28, 2010. PCBs are not expected to be present in this discharge.
- Footnotes regarding the permit limits, levels and monitoring requirements have been updated and consolidated onto page 8 of the draft permit.
- The Additional Requirements Section, Condition 1 (page 9) first sentence has been revised to more clearly prohibit the discharge of boiler and metal cleaning wastes.
- The old condition 4 (water treatment chemicals) in the Additional Requirements Section has been removed and replaced by the Water Treatment Chemical (WTC) Requirements section on page 18 of the draft permit.
- The Biological Monitoring Requirements section has been revised to eliminate the completed requirements.

Background Information

The current SPDES permit for the TC Ravenswood Generating Station was issued on April 20, 2007 and is based upon an application submitted in August 2005 in response to a request for information under the Environmental Benefit Permit Strategy program. Permit modifications were issued on January 13, 2009 and December 28, 2010.

In a June 13, 2011 letter the Department notified the Permittee that their SPDES permit would expire on April 30, 2012 and that they must submit a SPDES Permit Renewal Application and sampling data for review. The SPDES permit application was received on November 1, 2011. Sampling requested included conventional parameters and priority pollutants.

A review of the facility's Discharge Monitoring Reports from 10/1/08 to 11/30/11 shows that the facility exceeded their SPDES permit limits as follows:

DMR Period	Outfall	Parameter	Permit Limit	Value Reported
Nov. 2008	01A	pH (minimum)	6.0 s.u.	5.3 s.u.
June 2009	01D	pH (maximum)	9.0 s.u.	9.3 s.u
June 2009	004	TSS (daily max.)	50 mg/l	58 mg/l
Mar. 2010	006	TSS (daily max.)	50 mg/l	116 mg/l
Dec. 2010	006	TSS (daily max.)	50 mg/l	73 mg/l
May 2011	01D	TSS (daily max.)	100 mg/l	136 mg/l

Discharge Composition

Table 1 in Appendix C presents the existing effluent quality of the facility. The average and maximum concentration and mass reported are based on 3 years of Discharge Monitoring Report (DMR) data submitted by the permittee from 10/1/08 to 11/30/11. Additional pollutants detected in the effluent were reported in the SPDES NY-2C permit application.

Outfall and Receiving Water Information

The facility maintains the following outfalls:

Outfall No.	Design Flow Rate (MGD)	Latitude	Longitude	Receiving Water	Water Class	Water Index Number
001	853	40° 45' 31"	73° 56' 54"	East River	I	ER(0.3-10.1)
01A*	0.012	40° 45' 31"	73° 56' 54"	East River	I	ER(0.3-10.1)
01C*	0.145	40° 45' 31"	73° 56' 54"	East River	I	ER(0.3-10.1)
01D*	0.022	40° 45' 31"	73° 56' 54"	East River	I	ER(0.3-10.1)
01E*	0.002	40° 45' 31"	73° 56' 54"	East River	I	ER(0.3-10.1)
01F*	0.004	40° 45' 31"	73° 56' 54"	East River	I	ER(0.3-10.1)
01G*	0.01	40° 45' 31"	73° 56' 54"	East River	I	ER(0.3-10.1)
01H*	0.003	40° 45' 31"	73° 56' 54"	East River	I	ER(0.3-10.1)
002	0.027	40° 45' 40"	73° 56' 47"	East River	I	ER(0.3-10.1)
004	0.007	40° 45' 48"	73° 56' 40"	East River	I	ER(0.3-10.1)
006	0103	40° 45' 44"	73° 56' 43"	East River	I	ER(0.3-10.1)
007*	0.10	40° 45' 32"	73° 56' 53"	East River	I	ER(0.3-10.1)
008	1.152	40° 45' 33"	73° 56' 50"	East River	I	ER(0.3-10.1)
009	1.152	40° 45' 33"	73° 56' 50"	East River	I	ER(0.3-10.1)
010	1.728	40° 45' 37"	73° 56' 45"	East River	I	ER(0.3-10.1)
011	0.416	40° 45' 30"	73° 56' 45"	East River	I	ER(0.3-10.1)

Note: "*" Outfalls 01A, 01C, 01D, 01E, 01F, 01G, 01H and 007 combine with the condenser cooling water and discharge via Outfall 001

The facility discharges condenser cooling water, stormwater, boiler blowdown, floor drains, intake screen wash/fish returns filter backwash, reverse osmosis reject water, condensate and demineralizer & ion exchange regeneration discharges through the outfalls listed below into the East River. The East River is classified as Class I by the Department with the following beneficial uses:

> The best usages of Class I waters are secondary contact recreation and fishing. These waters shall be suitable for fish, shellfish, and wildlife propagation and survival.

Critical Flows and Dilution

Due to the tidal nature of the receiving water, the 7Q10 and 30Q10 flows are not applicable. Dilution and receiving water data is as follows:

Outfall No.	Receiving Water	Dilution/Mixing	pH (SU)	Temp (°C)	Salinity
001	East River	10:1 d	7.2	Summer 24.8°C Winter 0°C	Summer 23.9 ppt Winter 21.8 ppt
002	East River	10:1 d	7.2	Summer 24.8°C Winter 0°C	Summer 23.9 ppt Winter 21.8 ppt
004	East River	10:1 d	7.2	Summer 24.8°C Winter 0°C	Summer 23.9 ppt Winter 21.8 ppt
007	East River	10:1 d	7.2	Summer 24.8°C Winter 0°C	Summer 23.9 ppt Winter 21.8 ppt
008	East River	10:1 d	7.2	Summer 24.8°C Winter 0°C	Summer 23.9 ppt Winter 21.8 ppt
009	East River	10:1 d	7.2	Summer 24.8°C Winter 0°C	Summer 23.9 ppt Winter 21.8 ppt
010	East River	10:1 d	7.2	Summer 24.8°C Winter 0°C	Summer 23.9 ppt Winter 21.8 ppt
011	East River	10:1 d	7.2	Summer 24.8°C Winter 0°C	Summer 23.9 ppt Winter 21.8 ppt

Notes: d - use default dilution value per TOGS 1.3.1

Dilution/Mixing Zone Analysis

Mixing zone analysis has not been conducted and a default dilution of 10:1 has been assigned per TOGS 1.3.1.

Critical Receiving Water Data

Values for temperature, pH, and salinity were obtained from Ravenswood intake monitoring data, Ravenswood discharge monitoring data and NYCDEP Harbor WQ Survey Data (1990-1999), respectively.

303(d) Impaired Waterbody Information

Year Listed	Cause/Pollutant	Suspected Source	TMDL Status
1998	PCBs, other toxics	Contaminated Sediments	Completed in 1994 for copper, lead mercury & nickel

The 303(d) list identifies waters that do not support appropriate uses and that require development of a Total Maximum Daily Load (TMDL) or other restoration strategy. The NJ-NY Harbor waters are listed in 303(d) list for mercury, PCBs, dioxins/furans, PAHs, pesticides and heavy metals. The department of health has issued a health advisory for eating fish taken from the Hudson River.

A TMDL was developed in 1994 for the NY-NJ Harbor for copper, mercury, nickel and lead. The East River was determined to be effluent limited for copper, nickel and lead. The mercury exceeded NY State's ambient water quality standard throughout NY-NJ Harbor. Waste Load allocation (TMDL/WLA) for this facility have not been applied because the water is being removed from and returned to the East River for cooling with no net increase in copper, mercury, nickel and lead loadings.

Effluent Limitations

The NYSDEC followed the Clean Water Act, state and federal regulations, and the Division of Waters Technical and Operational Guidance Series documents for developing the effluent limits. In general, the Clean Water Act requires that the effluent limits for a particular pollutant are the more stringent of either the technology-based or water quality-based limits. A technology-based effluent limit requires a minimum level of treatment for industrial point sources based on currently available treatment technologies. A water quality-based effluent limit (WQBEL) is designed to ensure that the water quality standards of receiving waters are being met. The table detailing the effluent limits is included in the draft permit. More information on the derivation of technology- and water quality-based effluent limits is presented in Appendix C.

Monitoring Requirements

Section 308 of the Clean Water Act and federal regulations 40 CFR 122.44(i) require that monitoring be included in permits to determine compliance with effluent limitations. Additional effluent monitoring may also be required to gather data to determine if effluent limitations may be required. The permittee is responsible for conducting the monitoring and for reporting results on Discharge Monitoring Reports (DMRs) to NYSDEC.

The draft permit contains the monitoring requirements for the facility. Monitoring frequency is based on the minimum sampling necessary to adequately monitor the facility's performance. For industrial facilities, sampling frequency is based on guidance provided in TOGS 1.2.1.

Other Permit Conditions

Additional Requirements

Several additional permit conditions are listed in the permit to address operational issues and additional reporting requirements related to steam electric power generating facilities.

Biological Monitoring Requirements

In accordance with 6 NYCRR Part 704.5, the location, design, construction and capacity of the cooling water intake structures, in connection with point source thermal discharges, shall reflect the best technology available for minimizing the adverse environmental impacts. The Ravenswood facility has a combined flow of once through, condenser cooling water and service water of 1457 million gallons per day. The shoreline intake structure consists of 14 intake bays and conventional through flow traveling screens to keep the station's condensers clear. Marine organisms and debris are continuously washed off the screens at each unit are returned to the East River through a Department approved, low stress fish

return pipe. As part of the SPDES permit modification issued on April 20, 2007, the New York State Department of Environmental Conservation (NYSDEC) determined that, in combination, the following technologies represent the best technology available (BTA) for minimizing adverse environmental impacts from the cooling water intake system. In accordance with schedules contained in the current SPDES permit, installation of these alternatives were to be completed by February 28, 2012 in order to achieve a 90% reduction in impingement mortality and a 65% reduction in entrainment from the calculation baseline. The technologies included:

a) Installation of variable speed pumps and ancillary equipment at Ravenswood Units 1, 2 and 3 that will allow for the reduction in cooling water use during periods of low electrical generation;

b) Scheduling of a planned outage process that will require cooling water pumps to be shut down to reduce impingement and entrainment during periods of non electrical generation;

c) Upgrades to the existing traveling intake screens at Ravenswood Units 1, 2 and 3 to allow for the continuous operation of all traveling intake screens and construction of low stress fish returns, to increase fish impingement survival;

The Biological Monitoring Requirements included in this SPDES permit reflect a continuation of these requirements including verification monitoring, a report demonstrating compliance and submission of status reports. A Biological Fact Sheet for the Cooling Water Intake Structures, prepared by the NYSDEC, Division of Fish, Wildlife and Marine Resources, Bureau of Habitat, Steam Electric Unit has been included in Appendix B of this fact sheet

Special Conditions – Industry Best Management Practices

The permittee is required to implement a Best Management Practices (BMP) plan that prevents, or minimizes the potential for, the release of significant amounts of toxic or hazardous pollutants to state waters. The BMP plan requires annual review by the permittee.

Water Treatment Chemicals

The use of water treatment chemicals (WTCs) in wastewater treatment systems requires the review and authorization by the NYSDEC. In most cases, a permit modification is not necessary. WTC usage must be logged and detailed in an annual report sent to the DEC. The draft permit details the authorized WTC's for the facility.

Compliance Schedules

A schedule of compliance is included in the draft permit identifying a submission required by the biological monitoring requirements for the cooling water intake structures.

Additional Permit Provisions

The draft permit contains standard regulatory language that is/are required to be in all SPDES permits. These permit provisions are based largely upon 40 CFR 122, subpart C and include requirements pertaining to monitoring, recording, reporting, and compliance responsibilities.

Other Legal Requirements

Discharge Notification Act

In accordance with Discharge Notification Act (ECL 17-0815-a), the permittee is required to post a sign at each point of wastewater discharge to surface waters. The permittee is also required to provide a public repository for DMRs as required by the SPDES permit.

Antidegradation Policy

New York State implements the antidegradation portion of the CWA based upon two documents:

1. Organization and Delegation Memorandum #85-40, entitled "Water Quality Antidegradation Policy," signed by the Commissioner of NYSDEC, dated September 9, 1985.

2. TOGS 1.3.9, entitled "Implementation of the NYSDEC Antidegration Policy – Great Lakes Basin (Supplement to Antidegradation Policy dated September 9, 1985)."

An SPDES permit cannot be issued that would result in the water quality criteria being violated. The draft permit for the facility contains effluent limits which ensure that the existing beneficial uses of the East River will be maintained.

Appendix A

Basis for Effluent Limitations

Statutory and Regulatory Basis for Limits

Sections 101, 301(b), 304, 308, 401, 402, and 405 of the Clean Water Act (CWA) provide the basis for the effluent limitations and other conditions in the draft permit. The NYSDEC evaluates discharges with respect to these sections of the CWA and the relevant SPDES regulations to determine which conditions to include in the draft permit.

In general, the permit writer does a statistical analysis of the monitoring data provided in permittee-submitted discharge monitoring reports (DMRs). Pollutant screening data as required in the Request for Information is also reviewed to determine the presence of additional contaminants that should be considered for inclusion in the permit. The permit writer determines the technology-based limits that must be incorporated into the permit in accordance with federal and state rules, regulations, and technical guidance. The Department then evaluates the water quality expected to result from these controls to determine if any exceedances of water quality standards in the receiving water would result. If there is a reasonable potential for exceedances to occur, water quality-based limits must be included in the permit. The draft permit limits reflect whichever requirements, technology or water quality, are more stringent. The proposed limits are located on Page[s] xx-xx of the draft permit. This Appendix describes the technology-based and water quality-based evaluation for the facility.

Technology-Based Evaluation

Section 301(b) and 402 of the CWA require technology-based controls on effluents. This section of the Clean Water Act requires that, by March 31, 1989, all permits contain effluent limitations which: (1) control toxic pollutants and non-conventional pollutants through the use of "best available technology economically achievable" (BAT), and (2) represent "best conventional pollutant control technology" (BCT) for conventional pollutants. In no case may BCT or BAT be less stringent than "best practical control technology currently available" (BPT), which is the minimum level of control required by Section 301(b)(1)(A) of the Clean Water Act. After March 31, 1989, all permits for new sources are required to contain effluent limitations for all categories of point sources which control toxic pollutants through the use of best available demonstrated technology (BADT). BADT is specifically applied through New Source Performance Standards (NSPS).

In many cases, BPT, BCT, BAT and NSPS limitations are based on effluent guidelines developed by USEPA for specific industries. Guidelines for the Steam Electric Power Generation Category can be found in 40 CFR 423. Specific effluent guidelines for this facility include once through cooling water and low volume waste sources (e.g., floor drains, boiler blowdown, ion exchange water treatment systems, etc.) and require monitoring and limitations on pH, TSS, Oil & Grease and Total Residual Chlorine. Specific effluent limits for these pollutants can be found in the Tables at the end of Appendix C. In addition to the effluent guidelines promulgated by USEPA, the permit writer is authorized to use his/her best professional judgment (BPJ) in developing technology-based limitations. The authority for BPJ is contained in Section 402(a)(1) of the CWA, which authorizes the Department to issue a permit containing "such conditions as the Administrator determines are necessary to carry out the provisions of the Act." The NPDES regulations in 40 CFR 125.3 state that permits developed on a case-by-case basis under Section 402(a)(1) of the CWA must consider:

1. The appropriate technology for the category class of point sources, of which the applicant is a member, based on available information; and
2. Any unique factors relating to the applicant.

For certain industrial sectors, Effluent Guidelines have not been promulgated by USEPA. In other instances, facilities that are subject to federal regulations may have substances in their discharges that are not explicitly limited by the regulations. To determine if these substances require technology-based effluent limits, the permit writer must apply Best Professional Judgment (BPJ). The authority for BPJ is contained in Section 402(a)(1) of the CWA, which authorizes the Department to issue a permit containing "such conditions as the Administrator determines are necessary to carry out the provisions of the Act." The NPDES regulations in 40 CFR 125.3 state that permits developed on a case-by-case basis under Section 402(a)(1) of the CWA must consider:

1. Reviewing Effluent Guidelines for sectors with similar pollutants,
2. Reviewing limitations developed at similar facilities, and
3. Any unique factors relating to the applicant.

Water Quality-Based Evaluation

In addition to the technology-based limits previously discussed, the NYSDEC evaluated the discharge to determine compliance with Section 301(b)(1)(C) of the Clean Water Act. This section requires the establishment of limitations in permits necessary to meet water quality standards by July 1, 1977.

The regulations in 40 CFR 122.44(d)(1) implement Section 301(b)(1)(C) of the Clean Water Act. These regulations require that SPDES permits include limits for all pollutants or parameters which are or may be discharged at a level which will cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality. The limits must be stringent enough to ensure that water quality standards are met and must be consistent with any available wasteload allocation (WLA).

Water Quality Criteria

Water quality regulations detailed in 6 NYCRR Parts 700-706 and ambient water quality standards and guidance values specified in TOGS 1.1.1 were applied to the facility's discharge. Specific application of the regulations and standards is detailed in the tables at the end of Appendix C.

Reasonable Potential Evaluation

Reasonable potential analysis is the process for determining whether a discharge causes, has the reasonable potential to cause, or contributes to an excursion above New York State water quality criteria for toxic pollutants. When conducting a reasonable potential analysis for each pollutant of concern, factors such as receiving water classification and corresponding water quality criteria and guidance values, pollutant concentration in the effluent, dilution available in the receiving water, background concentrations and additional upstream and downstream dischargers containing the pollutant of concern are used to quantify the receiving water quality. If the expected concentration of the pollutant of concern in the receiving water exceeds the ambient water quality criteria or guidance value then there is reasonable potential that the discharge may cause or contribute to a violation of the water quality standard, and a water quality-based effluent limit or load allocation for the pollutant is required. Calculations performed specifically for the effluent of this facility can be found at the end of this Appendix.

Whole Effluent Toxicity (WET) Testing - WET tests use small vertebrate and invertebrate species to measure the aggregate toxicity of an effluent. There are two different durations of toxicity tests: acute and chronic. Acute toxicity tests measure survival over a 96-hour test exposure period. Chronic toxicity tests measure reductions in survival, growth, and reproduction over a 7-day exposure. Per TOGS 1.3.2, WET testing is required when

- there is the presence of substances in the effluent for which ambient water quality criteria do not exist.
- there are uncertainties in the development of TMDLs, WLAs, and WQBELs, caused by inadequate ambient and/or discharge data, high natural background concentrations of pollutants, available treatment technology, and other such factors.
- there is the presence of substances for which WQBELs are below analytical detectability.
- there is the possibility of complex synergistic or additive effects of chemicals, typically when the number of metals or organic compounds discharged by the permittee equals or exceeds five.
- there are observed detrimental effects on the receiving water biota.
- previous WET testing indicated a problem.

WET testing has not been included with this permit. The major discharges at this facility are once through cooling water and site stormwater. There are also several low volume wastewater discharges including boiler blowdown and treatment discharges related to the treatment of municipal drinking water for use in the power station boilers. Any water treatment chemicals used in these processes are evaluated and the information provided includes product composition, dosage rates, outfall concentrations and toxicity data. Based upon review of this information WET testing has not been recommended because there is no expectation of toxic effects from the discharge in the receiving water.

Procedure for Deriving Water Quality-Based Effluent Limits (WQBELs)

The TMDL process is a water quality based approach to implementing water quality standards. It is applied to an entire watershed or drainage basin whenever possible, but may also be applied to waterbody segments with individual or multiple pollutant sources. The TMDL analysis is carried out separately for each pollutant. It allows for the consideration of all sources of the pollutant including point sources, non-point sources, atmospheric deposition and natural background. Dependant on the complexity of the issue and the amount of data available, the analysis can be relatively simple such as a desk-top, mass-balance calculation or it can be exacting and detailed by using complex, multidimensional water quality models. The TMDL process serves a dual function in the permit development process. It provides the basis for the reasonable potential analysis. If the reasonable potential analysis indicates that the pollutant of concern has the potential to cause or contribute to an excursion of water quality standards, the TMDL process is then used to determine the WQBELs for all sources of the pollutant to assure compliance with the standards.

Pollutant-Specific Analysis

This section outlines the basis for each of the effluent limitations in the permittee's draft permit.

Mercury

Mercury was previously detected in stormwater at the facility at an average level of 14.1 ng/l, which exceeds the water quality standard of 0.7 ng/l. Although the standard is exceeded, this concentration in rainwater is common. New York State's mercury multiple discharge variance (MDV) in TOGS 1.3.10 is being applied. Mercury may also be present in the intake water taken directly from the same body of water to which the discharge occurs. As there are no known sources or additional contributions of

mercury which would qualify the facility as high priority mercury discharger, the permit does not include a mercury limit or mercury minimization program.

Outfall 001

Discharge Temperature - The discharge temperature is based upon existing permit limits. This limit remains in the permit unchanged.

Intake-Discharge Temperature Difference - The discharge temperature difference (or delta T) is based upon existing limits. This limit remains in the permit unchanged.

Net Addition of Heat - The net addition of heat is based upon existing limits. This limit remains in the permit unchanged.

Total Residual Chlorine (TRC) - A TRC limit of 0.075 mg/L is included in the draft permit. 6 NYCRR Part 703.5 establishes a total residual chlorine standard of 7.5 µg/L as a aquatic chronic standard. A default 10:1 dilution ratio has been applied to this discharge to the East River.

Outfalls 01A, 01D, 01E, 01F, 01G & 01H

Total Suspended Solids (TSS) - The discharges from these outfalls are considered to be low volume waste sources as identified in the Steam Electric Power Generation Category. The daily maximum limit of 100 mg/l and the 30 day average limit of 30 mg/l are best practicable control technology (BPT) limits required by 40 CFR 423.12(b)(3). The existing daily maximum limit of 50 mg/l at outfall 01G will remain based upon antibacksliding provisions.

Oil & Grease - The discharges from these outfalls are considered to be low volume waste sources as identified in the Steam Electric Power Generation Category. The daily maximum limit of 20 mg/l and the 30 day average limit of 15 mg/l are best practicable control technology (BPT) limits required by 40 CFR 423.12(b)(3). The existing permit includes daily maximum Oil & Grease limits of 15 mg/l for outfalls 01A, 01D and 01G. These limits remain unchanged in the draft permit. Daily maximum Oil & Grease limits of 15 mg/l have also been added for outfalls 01E, 01F and 01H. During the public comment period for the draft permit, the USEPA commented that the monthly average Oil & Grease limit of 15 mg/l must also be included to reflect the technology based limit for the Steam Electric Power Generation Category for low volume wastewater. As a result, the monthly average limit has been added to the permit.

Ammonia – Monitoring for ammonia at outfalls 01D and 01G is based upon the potential for it to be present in the discharge based upon ammonia storage for air pollution control equipment and a possible byproduct from water treatment chemical use in boiler blowdown.

Outfalls 004, 006, 007 and 011

Oil & Grease An oil and grease limit of 15 mg/l has been applied to these discharges based upon the narrative water quality standard for oil and floating substances contained in 6 NYCRR Part 703.2. The 15 mg/l limit reflects the lower concentration at which a visible sheen is observed.

Total Suspended Solids (TSS) – An TSS limit of 50 mg/l has been applied to these discharges based upon the narrative water quality standard for turbidity, suspended, colloidal and settleable solids contained in 6 NYCRR Part 703.2. The 50 mg/l limit reflects the lower concentration at which a visible contrast may be observed and may cause deposition or impair waters for their best usage.

Benzene, Toluene and Xylene – The existing limit of 50 ug/l for these compounds have been applied as BPJ limits. These compounds are common target pollutants associated with fuel storage. The 50 ug/l limit is more stringent than the associated WQBEL for these compounds.

Ethylbenzene – A limit of 45 ug/l is included in the draft permit. The Department-s Technical & Operational Guidance Series (TOGS) 1.1.1 - Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations lists an ambient aquatic (chronic) guidance value of 4.5 ug/l. Using a default 10:1 dilution ratio, a WQBEL of 45 ug/l has been applied.

Aroclor – The existing permit limit for Aroclors 1254 and 1260 at outfall 004 was removed as sampling data for the past 10 years indicates that samples were all reported as not detected.

APPENDIX B
Biological Fact Sheet - Cooling Water Intake Structure
Bureau of Habitat, Steam Electric Unit

Description of Facility
The Ravenswood Generating Station, located on the East River, contains three units with rated capacities of 400, 400 and 1027 megawatts. The facility has a combined flow of condenser cooling water and service water of 1457 million gallons per day. The shoreline intake structure consists of 14 intake bays and conventional through flow traveling screens to keep the station's condensers clear. Marine organisms and debris are continuously washed off the screens at each unit are returned to the East River through a Department approved, low stress fish return pipe.

Ecological Resource
The East River is part of the Hudson-Raritan Estuary System, extending approximately 170 miles from the dam at Troy, NY to Sandy Hook, NJ. The estuary system connects to the coastal marine waters of the New York Bight, between Sandy Hook, NJ and Rockaway Point, NY, and to the western end of the Long Island Sound through the East River.

The East River is a tidal strait extending about 16 miles from the battery to Throgs Neck at Long Island Sound. At Hell's Gate, a natural sill divides the strait into two distinct hydrological sections. The upper East River, which connects to Long Island Sound, is broader, more shallow and characterized by more natural shoreline habitat. The Lower East River, where the Station is located, is a narrower 10 mile section, bulkheaded along most of its length. The channel here is steep sided with depths at approximately 35 to 80 feet. Current velocities in the vicinity of the Station are high, with average peak flood and ebb currents at about 4.6-4.7 feet per second, and maximum tidal velocities exceeding 5.5 feet per second (ASA, 2001).

More than 140 species of fish have been reported from the Hudson-Raritan Estuary System, representing marine, estuarine, freshwater and diadromous fish, as well as species adapted to northern and southern climates. More than 50 species of fish, mostly marine in origin, have been identified from studies conducted at the Station in the 1990s. Under a 1992 consent order with the Department, Con Edison conducted a series of studies to assess the Station's impact on aquatic resources in the East River and determine best technology available for the cooling water intake system. Impingement and entrainment studies conducted were between 1991 and 1994. Approximately 83,000 fish were estimated to be impinged per year, mainly winter flounder, blueback herring, bay anchovy and grubby. Entrainment studies conducted over that time estimated that an average of 220 million eggs, larvae and juvenile fish were entrained per year, with eggs accounting for approximately 75% of the total. The principal species entrained were four beard rockling, bay anchovy, winter flounder, grubby and silver hake (Con. Ed., 1996).

Studies required under the consent order determined that several species of impinged fish, including winter flounder, bay anchovy and Atlantic tomcod, experience thermal stress and possibly increased levels of mortality upon exposure to the high summer temperatures in the cooling water discharge canal. A mark-recapture study was then conducted to determine suitable location(s) to return fish directly to the East River without exposure to the station's thermal discharge. Construction of three fish return pipes, one for each unit, was completed in 2003. The system safely transports impinged fish back to the East River and was the first step in mitigating the impacts of the Station's cooling water intake system.

The most recent Impingement and Entrainment studies were conducted from March 2005 to February 2006. About 25,850 fish were impinged over the year, representing 61 taxons. Blueback herring (21.8%), bay anchovy (13.5%) and alewife (11.3%) were impinged in greatest numbers. Approximately 149.7 million eggs, larvae and juveniles were entrained through the station. Bay anchovy (22.8%), Atlantic menhaden (18.5%) and the goby family (12.5%) were the predominant taxons entrained. Post-yolk-sac larvae (51.2%) and eggs (47.0%) were the main life stages found in the entrainment collections.

Alternatives Evaluated

Feasible technological and operational alternatives were evaluated for this facility, including the use of closed cycle cooling, in order to determine best technology available to minimize adverse environmental impact from operation of the cooling water intake system. The Department selected the alternatives that will minimize impacts, consistent with 6NYCRR Part 704.5 and the federal Clean water Act.

Determination of Best Technology Available

According to 6NYCRR Part 704.5 - Intake structures and Section 316(b) of the federal Clean Water Act, the location, design, construction, and capacity of cooling water intake structures must reflect the "best technology available" (BTA) for minimizing adverse environmental impact. After evaluating all of the available alternatives, the New York State Department of Environmental Conservation (NYSDEC) determined that, in combination, the following technologies and operational measures listed here represent the best technology available (BTA) for minimizing adverse environmental impacts from the cooling water intake system. Implementation of these items was completed by early 2012. The SPDES permit requires that these alternatives achieve a 90% reduction in impingement mortality and a 65% reduction in entrainment from the calculation baseline. The cost of these technologies is not wholly disproportionate to the benefits.

a) Installation of variable speed pumps and ancillary equipment at Ravenswood Units 1, 2 and 3 that will allow for the reduction in cooling water use during periods of low electrical generation;

b) Scheduling of a planned outage process that will require cooling water pumps to be shut down to reduce impingement and entrainment during periods of non electrical generation;

c) Upgrades to the existing traveling intake screens at Ravenswood Units 1, 2 and 3 to allow for the continuous operation of all traveling intake screens and construction of low stress fish returns, to increase fish impingement survival;

A Supplemental Technology and Operation Review/Plan was submitted and approved by the Department in May 2011. Based upon performance testing of variable speed pumps installed at Unit 30, simulations of variable speed pump operation and cooling water use reduction was established for the entire station. Plant generation data from 2005-2009 and several years of in-plant impingement, impingement survival and entrainment data were then used to estimate what the likely reductions in impingement mortality and entrainment would have been over the 2005-2009 period with the BTA alternatives in place. The assessment indicated that under the stated operating conditions and time period, the impingement mortality reduction of 90% and entrainment reduction of 65% from baseline, required by the SPDES permit, would have been achieved.

Monitoring Requirements

A *Verification Monitoring Plan* for was submitted and approved by the Department in December 2011. The plan details the procedures necessary to confirm that the reductions in impingement mortality and entrainment required by this permit are being achieved. The specific requirements of the monitoring plan are set forth in Additional Requirements Nos. 4.a.- e. of the modified SPDES permit.

Legal Requirements

The requirements for the cooling water intake structure in this State Pollutant Discharge Elimination System permit are consistent with the policies and requirements embodied in the New York State Environmental Conservation Law, in particular - Sec.1-0101.1.; 1-0101.2.; 1-0101.3.b., c.; 1-0303.19.; 3-0301.1.b , c., i., s. and t.; 11-0107.1; 11-0303.; 11-0535.2; 11-1301.; 11-1321.1.; 17-0105.17.; 17-0303.2., 4.g.; 17-0701.2. and the rules thereunder, specifically 6NYCRR Part 704.5. Additionally, the requirements are consistent with the Clean Water Act, in particular Section 316(b) and the rules thereunder, specifically Subpart J of 40 CFR §125 - Requirements Applicable to Cooling Water Intake Structures for Phase II Existing Facilities Under 316(b) of the Clean Water Act.

Summary of Changes

Deletions (Former Permit Conditions)

Former Permit Condition	Reason for Deletion or Change
Additional Requirement No. B.1	Condition has been met
Additional Requirement No.B.8.	Condition is no longer relevant, now that BTA has been established.

References

ASA 2001. Ravenswood Generating Station. Final Action Report. Prepared by ASA Analysis and Communication, Inc. for the Keyspan Corporation.

ASA 2004. Evaluation of the Fish Protection Benefits of Cooling Water Intake System Alternatives at the Ravenswood Generating Station. Phase 2 Report. Prepared by ASA Analyses and Communication, Inc. for the Keyspan Corporation. April 2004. Revised February 2005.

Con Ed 1996. Ravenswood Generating Station. Diagnostic Study Report. Prepared by Consolidated Edison Company of New York, Inc. Pursuant to the December 23, 1993 Order On Consent in DEC file No. R2-2985-90-04. April 30, 1996.

Document prepared by Michael J. Calaban, and last revised on 25 January 2012.

Appendix C

Individual Outfall Data Summaries and Permit Limit Development

Existing Effluent Quality and Technology Based Effluent Limits (TBEL)

Technology Based Effluent Limit (TBEL) is set based upon an evaluation of Best Available Technology Economically Achievable (BAT), Best Conventional Pollutant Control Technology (BCT), Best Practicable Technology Currently Available (BPT), and Best Professional Judgment (BPJ). BPJ limits may be set using any reasonable method that takes into consideration the criteria set forth in 40 CFR 125.3.

For the Existing Effluent Quality, the statistical methods utilized are in accordance with TOGS 1.2.1 and the USEPA, Office of Water, Technical Support Document For Water Quality-based Toxics Control, March 1991, Appendix E. Statistical calculations were not performed for parameters with insufficient data. Generally, ten or more data points are needed to calculate percentiles (See TOGS 1.2.1 Appendix D). Two or more data points are necessary to calculate an average and a maximum. Non-detects were excluded in the statistical calculations.

Monitoring data collected during the following time period of 10/1/08 to 11/30/11 was used to calculate statistics and these data were taken from Discharge Monitoring Reports.

Water Quality Based Effluent Limits (WQBEL)

Ambient Water Quality Criteria (AWQC) and guidance values specified in "Water Quality Regulations" New York State Codes, Rules and Regulations Title 6, Chapter X, Parts 700-705 and TOGS 1.1.1 were applied to the following pollutants identified in the facilities discharge. Water Quality Based Effluent Limits (WQBEL's) were calculated by applying the TMDL process for each pollutant.

TABLE 1

Outfall # 001 Main Outfall – Condenser cooling water for units 10, 20 & 30 plus discharge outfalls 01A, 01C, 01D, 01E, 01F, 01G and 01H

Effluent Parameter (Units) (concentration units - mg/l, ug/l or ng/l; mass units - lbs/d or g/d)	Existing Effluent Quality – (EEQ)				Technology Based Effluent Limit – (TBEL)					Water Quality Based Effluent Limit				Permit Basis (T or WQ)
	concentration		mass					PQL		AWQC	Effluent			
	Avg/Max	95% 99%	Avg/Max	95% 99%	conc.	mass	Type	conc.	Basis	conc.	conc.	mass	Type	
Flow Rate (MGD)	Average	538	Maximum	1390	Monitor			NA						
pH (su)	Minimum	7.1	Maximum	7.6	6.0 – 9.0		Range		BCT, 40 CFR Part 423.12(b)(1)	6.5-8.5	Apply TBEL			T
Temperature (deg. F)	75.9	97.9			104.2		Max		6NYCRR Part 704	6NYCRR Part 704	See text			
Intake/Discharge Temperature Difference (deg. F)	14.8	20.5			23		Max		BPJ – existing limit	No stnd/guidance value				T
Net Addition of Heat (BBTU/hr)	4.34	9.5			10.7		Max		BPJ – existing limit	No stnd/guidance value				T
Total Chlorine Residual (mg/l)	0.07	0.07			0.2		Max		BCT, 40 CFR Part 423.13(b)(1)	7.5	0.075	------	Max	WQ

Notes: Outfalls 01A, 01C, 01D, 01E, 01F, 01G & 01H all combine with condenser cooling water to discharge via Outfall 001

TRC Application is 2 hours per unit, with 3 units total, use Aquatic Chronic A(C) standard of 7.5 ug/l Default Dilution 10:1 from TOGS 1.3.1

TABLE 2

Outfall # 01A - Floor Drains and Fuel Oil Heating System Condensate

Effluent Parameter (Units) (concentration units - mg/l, ug/l or ng/l; mass units - lbs/d or g/d)	Existing Effluent Quality				Technology Based Effluent Limit					Water Quality Based Effluent Limit				Permit Basis (T or WQ)
	concentration		mass					PQL		AWQC	Effluent			
	Avg/Max	95%/99%	Avg/Max	95%/99%	conc.	mass	Type	conc.	Basis	conc	conc	mass	Type	
Flow Rate (MGD)	Average	8.3	Maximum	8.3	Monitor			NA		NA - Internal Outfall				
pH (su)	Minimum	5.3	Maximum	7.9	6.0 – 9.0		Range		40 CFR Part 423.12(b)(1)					T
Total Suspended Solids (mg/l)	11.2	28			30/100		Avg/Max		40 CFR Part 423.12(b)(3)					T
Oil & Grease (mg/l)	5.2	8.6			15/15		Avg/Max		BPJ, existing limit and 40 CFR Part 423.12(b)(3)					T/WQ

TABLE 3

Outfall # 01D – Boiler Blowdown, Reverse Osmosis Concentrate, Unit 40 stormwater, air cooled condenser wash water & ion exchange regeneration discharge

Effluent Parameter (Units) (concentration units - mg/l, ug/l or ng/l; mass units - lbs/d or g/d)	Existing Effluent Quality				Technology Based Effluent Limit					Water Quality Based Effluent Limit				Permit Basis (T or WQ)
	concentration		mass					PQL		AWQC	Effluent			
	Avg/Max	95%/99%	Avg/Max	95%/99%	conc.	mass	Type	conc	Basis	conc.	conc.	mass	Type	
Flow Rate (GPD)	Average	6000	Maximum	6000	Monitor			NA		NA - Internal Outfall				
pH (su)	Minimum	6.1	Maximum	9.3	6.0 – 9.0		Range		40 CFR Part 423.12(b)(1)					T
Total Suspended Solids (mg/l)	17.6	136			30/100	Avg/Max			40 CFR Part 423.12(b)(3)					T
Oil & Grease (mg/l)	5.2	8.6			15/15	Avg/Max			40 CFR Part 423.12(b)(3)					T/WQ
Ammonia, (mg/l)	0.3	1.8			Monitor only	Max			BPJ					T

TABLE 4

Outfall # 01E - Boiler Make-up Water Carbon Filter Backwash

Effluent Parameter (Units) (concentration units - mg/l, ug/l or ng/l; mass units - lbs/d or g/d)	Existing Effluent Quality				Technology Based Effluent Limit					Water Quality Based Effluent Limit				Permit Basis (T or WQ)
	concentration		mass					PQL		AWQC	Effluent			
	Avg Max	95%/99%	Avg/Max	95%/99%	conc.	mass	Type	conc.	Basis	conc.	conc.	mass	Type	
Flow Rate (GPD)	Average	2297	Maximum	2910	Monitor			NA		NA - Internal Outfall				
Total Suspended Solids (mg/l)	11.5	68			30/100		Avg/Max		40 CFR Part 423.12(b)(3)					T
Oil & Grease (mg/l)	< 5	< 5			15/15		Avg/Max		40 CFR Part 423.12(b)(3)					T/WQ

Note: Municipal water receives additional treatment for boiler make-up water

TABLE 5

Outfall # 01F – Pre Filter Backwash

Effluent Parameter (Units) (concentration units - mg/l, ug/l or ng/l; mass units - lbs/d or g/d)	Existing Effluent Quality				Technology Based Effluent Limit					Water Quality Based Effluent Limit				Permit Basis (T or WQ)
	concentration		mass					PQL		AWQC	Effluent			
	Avg/Max	95%/99%	Avg/Max	95%/99%	conc	mass	Type	conc.	Basis	conc.	conc	mass	Type	
Flow Rate (GPD)	Average	8157	Maximum	10500	Monitor			NA		NA - Internal Outfall				
Total Suspended Solids (mg/l)	10	10			30/100		Avg Max		40 CFR Part 423.12(b)(3)					T
Oil & Grease (mg/l)	< 5	< 5			15/15		Avg Max		40 CFR Part 423.12(b)(3)					T/WQ

Note: Municipal water receives additional treatment for boiler make-up water

TABLE 6

Outfall # 01G - Units 10, 20 & 30 Boiler Blowdown

Effluent Parameter (Units) (concentration units - mg/l, ug/l or ng/l; mass units - lbs/d or g/d)	Existing Effluent Quality				Technology Based Effluent Limit					Water Quality Based Effluent Limit				Permit Basis (T or WQ)
	concentration		mass					PQL		AWQC	Effluent			
	Avg/Max	95%/99%	Avg/Max	95%/99%	conc	mass	Type	conc.	Basis	conc.	conc.	mass	Type	
Flow Rate (GPD)	Average	24055	Maximum	68763	Monitor			NA		NA - Internal Outfall				
Total Suspended Solids (mg/l)	10.5	29			30/50*		Avg Max		40 CFR Part 423.12(b)(3)					T
Oil & Grease (mg/l)	5	5			15/15		Avg/Max		BPJ, existing limit and 40 CFR Part 423.12(b)(3)					T/WQ
Ammonia (mg/l)	0.16	1.0			Monitor				BPJ					T

Note: "*" Existing TSS daily maximum permit limit of 50 mg/l.

TABLE 7

Outfall # 01H – Demineralizer Regeneration

Effluent Parameter (Units) (concentration units - mg/l, ug/l or ng/l; mass units - lbs/d or g/d)	Existing Effluent Quality				Technology Based Effluent Limit					Water Quality Based Effluent Limit				Permit Basis (T or WQ)
	concentration		mass					PQL		AWQC	Effluent			
	Avg/Max	95%/99%	Avg/Max	95% 99%	conc.	mass	Type	conc	Basis	conc.	conc.	mass	Type	
Flow Rate (GPD)	Average	16616	Maximum	37066	Monitor			NA		NA - Internal Outfall				
Total Suspended Solids (mg/l)	10	10			30/100		Avg/Max		40 CFR Part 423.12(b)(3)					T
Oil & Grease (mg/l)	< 5	< 5			15/15		Avg/Max		40 CFR Part 423.12(b)(3)					T/WQ

TABLE 8

Outfall # | 004 – Rainy Tank Farm – Underground Fuel Oil Tank Containment Vault

Effluent Parameter (Units) (concentration units - mg/l, ug/l or ng/l; mass units - lbs/d or g/d)	Existing Effluent Quality				Technology Based Effluent Limit					Water Quality Based Effluent Limit				Permit Basis (T or WQ)
	concentration		mass					PQL		AWQC	Effluent			
	Avg/Max	95%/99%	Avg/Max	95%/99%	conc	mass	Type	conc.	Basis	conc	conc	mass	Type	
Flow Rate (GPD)	Average	7200	Maximum	7200	Monitor			NA						
pH (su)	Minimum	7.0	Maximum	8.0	6.0 – 9.0		Range		BCT, existing limit	6.5-8.5	Apply TBEL			T
Total Suspended Solids (mg/l)	11.6	58			50				BPJ, existing limit	Narrative standard		Apply TBEL		T
Oil & Grease (mg/l)	5.1	7.8			15				BPJ, existing limit for visible sheen – narr.std	Narrative standard		Apply TBEL		T
Aroclor 1254 (ug/l)	< 0.065	< 0.065	< 0.002	< 0.002	Removed									
Aroclor 1260 (ug/l)	< 0.065	< 0.065	< 0.002	< 0.002	Removed									
Benzene (ug/l)	< 0.7	< 0.7			50				BPJ, existing limit	10 H(FC)	100	-----	Max	T
Ethylbenzene (ug/l)	< 1.0	< 1.0			50				BPJ, existing limit	4.3 A(C)	45	-----	Max	WQ
Toluene (ug/l)	< 1.0	< 1.0			50				BPJ, existing limit	92 A(C)	920	-----	Max	T
Xylene, Total (ug/l)	< 3.0	< 3.0			50				BPJ, existing limit	19 A(C)	190	-----	Max	T

Note: A(C) Aquatic Chronic Standard
H(FC) Human Consumption of Fish Standard
Default 10:1 dilution used per TOGS 1.3.1

TABLE 9

Outfall # 006 – Stormwater from Gas Turbine Site Secondary Containment & Roof Drains

Effluent Parameter (Units) (concentration units - mg/l, ug/l or ng/l; mass units - lbs/d or g/d)	Existing Effluent Quality				Technology Based Effluent Limit					Water Quality Based Effluent Limit				Permit Basis (T or WQ)
	concentration		mass					PQL		AWQC	Effluent			
	Avg/Max	95%/99%	Avg/Max	95%-99%	conc	mass	Type	conc.	Basis	conc	conc	mass	Type	
Flow Rate (GPD)	Average	1600	Maximum	1600	Monitor			NA						
pH (su)	Minimum	6.1	Maximum	8.0	6.0 – 9.0		Range		BCT, existing limit	6.5-8.5	Apply TBEL			T
Total Suspended Solids (mg/l)	26.5	116			50				BPJ, existing limit	Narrative standard		Apply TBEL		T
Oil & Grease (mg/l)	5.0	5.3			15				BPJ, existing limit for visible sheen – narr.stnd	Narrative standard		Apply TBEL		T
Benzene (ug/l)	< 0.7	< 0.7			50				BPJ, existing limit	10 H(FC)	100	-----	Max	T
Ethylbenzene (ug/l)	< 1.0	< 1.0			50				BPJ, existing limit	4.5 A(C)	45	-----	Max	WQ
Toluene (ug/l)	< 1.0	< 1.0			50				BPJ, existing limit	92 A(C)	920	-----	Max	T
Xylene, Total (ug/l)	4.2	16.1			50				BPJ, existing limit	19 A(C)	190	-----	Max	T

Note: A(C) Aquatic Chronic Standard
H(FC) Human Consumption of Fish Standard
Default 10:1 dilution used per TOGS 1.3.1

TABLE 10

Outfall # 007 – Stormwater from Old Settling Pond

Effluent Parameter (Units) (concentration units - mg/l, ug/l or ng/l; mass units - lbs/d or g/d)	Existing Effluent Quality				Technology Based Effluent Limit					Water Quality Based Effluent Limit				Permit Basis (T or WQ)
	concentration		mass					PQL		AWQC	Effluent			
	Avg Max	95% 99%	Avg/Max	95%/99%	conc.	mass	Type	conc	Basis	conc.	conc.	mass	Type	
Flow Rate (GPD)	Average	28800	Maximum	28800	Monitor			NA						
Total Suspended Solids (mg/l)	10.3	11			50				BPJ, existing limit	Narrative standard		Apply TBEL		T
Oil & Grease (mg/l)	< 5.0	< 5.0			15				BPJ, existing limit for visible sheen – narr. stnd	Narrative standard		Apply TBEL		T
Benzene (ug/l)	< 0.7	< 0.7			50				BPJ, existing limit	10 H(FC)	100	-----	Max	T
Ethylbenzene (ug/l)	< 1.0	< 1.0			50				BPJ, existing limit	4.5 A(C)	45	-----	Max	WQ
Toluene (ug/l)	< 1.0	< 1.0			50				BPJ, existing limit	92 A(C)	920	-----	Max	T
Xylene, Total (ug/l)	< 3.0	< 3.0			50				BPJ, existing limit	19 A(C)	190	-----	Max	T

Note: A(C) Aquatic Chronic Standard
H(FC) Human Consumption of Fish Standard
Default 10:1 dilution used per TOGS 1.3.1

TABLE 11

Outfall #	011 -- Stormwater from East Side of Units 10 & 20

Effluent Parameter (Units) (concentration units - mg/l, ug/l or ng/l; mass units - lbs/d or g/d)	Existing Effluent Quality				Technology Based Effluent Limit					Water Quality Based Effluent Limit				Permit Basis (T or WQ)
	concentration		mass					PQL		AWQC	Effluent			
	Avg/Max	95%/99%	Avg Max	95%/99%	conc	mass	Type	conc	Basis	conc.	conc.	mass	Type	
Flow Rate (GPD)	Average	No data	Maximum	No data	Monitor			NA						
Total Suspended Solids (mg/l)	No data – stormwater outfall not yet completed				50				BPJ	Narrative standard	Apply TBEL			T
Oil & Grease (mg/l)					15				BPJ, limit for visible sheen – narr. std	Narrative standard	Apply TBEL			T