Response to Comments
DG Fairhaven, LLC
Biomass Renewable Energy Facility
WDID No. 1B85026RHUM
Order No. R1-2012-0027

Three comment letters were received regarding the February 9, 2012, draft Waste Discharge Requirements/NPDES permit for the DG Fairhaven, LLC, (DGF) Biomass Renewable Energy Facility (Facility). The letters were received from:

A. *State Water Resources Control Board (State Water Board) in a February 29, 2012 email from Dominic Gregorio, Environmental Program Manager, Division of Water Quality.*
B. *United States Environmental Protection Agency (US EPA) in a March 7, 2012, email from Amelia Whitson, NPDES Permits Office, Region IX.*
C. *DGF in a March 9, 2012, letter signed by Bob Marino, General Manager.*

A. State Water Board – Email Dated February 29, 2012

Comment 1. Section III.C.8.d of the Ocean Plan only applies to once-through cooling (OTC) power plants. It was intended to address OTC power plants, which have extremely large flows (often with low concentrations). It was not intended to address power plants with cooling towers and modest flows, such as Fairhaven's Recirculated water from cooling towers, and the eventual blowdown from those systems is prone to concentrated levels of minerals and metals, including copper. The 6-month median and daily maximum concentration limitations for Cu from Table B should not be excluded from the permit. The mass emission limits should be applied to the gross effluent waste stream (not to just the in-plant waste streams).

Response: With this comment, the State Water Board provided useful insight regarding the intention of this section of the Ocean Plan. Accordingly, this section was inappropriately implemented in the draft Order and the following changes have been made to ensure that this Order correctly implements the Ocean Plan:

Table 7. Effluent Limitations at Discharge Point 001 (Gross Effluent Monitoring Location M-001)

Parameters	Units	Effluent Limitations			
		6-Month Median	Daily Maximum	Instantaneous Minimum	Instantaneous Maximum
Copper, Total Recoverable	µg/L	118	1162	--	3200
	lb/day	0.172	1.698	--	4.749
pH	s.u.	--	--	6.0	9.0
Chronic Toxicity	TU_c	--	115	--	--

Table 8. Effluent Limitations at Discharge Point 010 (Low Volume Waste Streams)

Parameter	Units	Effluent Limitations				
		6-Month Median	30-Day Average	Daily Maximum	Instantaneous Minimum	Instantaneous Maximum

Table E-2. Gross Effluent Monitoring – Location M-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Copper, Total Recoverable	µg/L	Flow weighted 24-hour Composite	Monthly	40 CFR Part 136
	µg/L	Grab	Monthly	40 CFR Part 136
	lbs/day	Calculation[1]	Monthly	Calculation
	lbs/day	Calculation[2]	Monthly	Calculation

Table E-3. Low Volume Waste Monitoring – Location M-010

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method

On Page F-37 of the Fact Sheet the following changes have been made in response to this comment:

As such, flow weighted mass-based effluent limitations for total recoverable copper of 0.172 lbs/day, 1.698 lbs/day, and 4.749 lbs/day are applied to the gross effluent waste stream as a 6-month median, a daily maximum, and an instantaneous maximum respectively, at Monitoring Location M-010. An instantaneous maximum effluent limitation of 3200 µg/L is applied to the combined final effluent at Monitoring Location M-001. By not including mass emission limits, the previous permit incorrectly implemented provision III.C of the Ocean Plan. This permit correctly implements provision III.C of the Ocean Plan by including mass emission limits. Replacement of the previous concentration limits with mass limits does not constitute backsliding because the mass limits are more restrictive under all historic and foreseeable flows.

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1 Calculation of the mass emission rates in lbs/day shall be performed using the resulting concentration from a grab sample multiplied by the instantaneous flow at M-001.

2 Calculation of the mass emission rates in lbs/day shall be performed using the resulting concentration from a flow weighted 24-hour composite sample multiplied by the 24-hour average flow at M-001.

Table F-16. Table B Mass-based Effluent Limitations

Parameter	Units	6-Month Median	Daily Maximum	Instantaneous Maximum
Copper, Total Recoverable	lbs/day	0.172	1.698	4.749

Table F-17. Final WQBELs for Ocean Plan Table B Pollutants for Gross Effluent Waste (Monitoring Location M-001)

Parameter	Units	6-Month Median	Daily Maximum	Instantaneous Maximum
Copper, Total Recoverable	µg/L	118	1162	3200[3]
Copper, Total Recoverable	lbs/day	0.172	1.698	4.749

B. US EPA – Email Dated March 7, 2012

Comment 1. Please provide a basis for the removal of existing effluent limits for lead and zinc. You must demonstrate in the permit Fact Sheet that the removal of these effluent limits complies with anti-backsliding requirements in Section 402(o) of the Clean Water Act.

Response. The following changes have been made to the Final Effluent Limitations Satisfaction of Anti-Backsliding Requirements A.1 paragraph 2 on page F-39 of the Fact Sheet to provide a basis for the removal of existing effluent limits for lead and zinc in response to this comment:

> This Order correctly implements provision III.C of the Ocean Plan by including mass emission limits on the gross effluent discharge, which are new and more stringent than the previous permit. The instantaneous maximum concentration for copper has been retained at 3200 µg/L from the previous permit in order to satisfy antibacksliding rather than modify the limit to 3250 µg/L as determined in the reasonable potential analysis.
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> The previous permit contained effluent limitations for lead and zinc which were based on the CTR criteria for the protection of marine and aquatic life. Following the protocol in the Ocean Plan, the most stringent effluent

[3] The previous permit contained a limit of 3200 µg/L, which is retained here because the calculated WQBEL of 3250 µg/L would have required an antidegradation analysis to support a finding for backsliding. Since no analysis was performed, the existing limitation is retained. [4] The minimum sampling frequency for this constituent may be reduced to quarterly upon six consecutive monitoring results in compliance with the respective effluent limitation, however, if at any time monitoring results show an exceedance of the respective effluent limitation, the minimum sampling frequency shall be reduced to monthly.

concentration limits for lead and zinc would be the 6-Month Median values of 232 and 1400 µg/L, respectively. The MECs for lead and zinc were 50 and 720 µg/L, respectively, based on 34 samples collected between November 2002, and September 2011. As shown in Table F-13, these maximum effluent concentrations after initial dilution are calculated at 0.43 and 6.26 ug/L for Lead and Zinc, respectively, which are both below the respective Water Quality Objectives of 2 and 20 ug/L, resulting in no reasonable potential for these constituents. The lack of reasonable potential for lead and zinc constitutes new information, which permits the removal of effluent limitations consistent with CWA section 402(o)(2)(B). As a result of the RPA, effluent limitations for lead and zinc are not included in the proposed Order and anti-backsliding requirements are satisfied.

Comment 2. Section III.C.8.d of the California Ocean Plan states that, for power plant discharges, effluent concentration limits shall be converted to mass emission limitations and applied to all inplant waste streams taken together which discharge into the plant's cooling water flow.

"Effluent concentration values (Ce) shall be determined through the use of equation 1 considering the minimal probable initial* dilution of the combined effluent (in-plant waste streams plus cooling water flow). These concentration values shall then be converted to mass emission limitations as indicated in equation 3. The mass emission limits will then serve as requirements applied to all inplant waste* streams taken together which discharge into the cooling water flow, except that limits for total chlorine residual, acute* (if applicable per Section (3)(c)) and chronic* toxicity and instantaneous maximum concentrations in Table B shall apply to, and be measured in, the combined final effluent, as adjusted for dilution with ocean water."

As there is no cooling water flow discharged from the facility, applicable effluent limits for copper based on Ocean Plan Table B Water Quality Objectives should be applied as mass emission limits to the combined effluent at Outfall 001 (in addition to applicable concentration-based water quality-based effluent limits at Outfall 001 for copper). These mass- and concentration-based effluent limits should be applied as 6-month median limits, daily maximum limits, and instantaneous maximum limits based on the corresponding Table B Water Quality Objectives for copper.

Response. This comment is effectively equivalent to Comment 1 by the State Water Board. See response above to the State Board comment.

C. DGF – Letter Dated March 9, 2012

Comment 1 (a). If the RWQCB does intend to require acute toxicity testing, the effluent limitations in this section [IV.A.1.a], as applicable for the discharger, would

need to reference the acute toxicity effluent limitations for saltwater aquatic organisms as set forth in the 2005 Ocean Plan, rather than the limitations for freshwater organisms as presented in the draft permit. The freshwater limitations as presented do not account for the mixing at the point of discharge.

If acute toxicity testing is required, the discharger would like an opportunity to discuss appropriate test procedures and applicable effluent limitations specific for this discharge rather than accept the standard effluent limitations as currently set forth in the permit.

Comment 1 (b). As applicable, Table 7 needs to include reference to the effluent limitations for acute toxicity. Table B in the Ocean Plan sets forth a daily maximum of 0.3 acute toxicity toxic units (TUa) for acute toxicity. Using the process outlined in the Ocean Plan for determining the mixing zone for the acute toxicity testing objective, the effluent limitation for the acute toxicity objective would be 3.75 TUa, based on the minimum initial dilution factor of 115.

Comment 1 (c). The definitions for acute toxicity toxic units (TUa) and chronic toxicity toxic units (TUc) need to be included in the definitions in Attachment A.

Response 1 (a, b and c). This effluent limitation was carried over from the current permit and there is insufficient data to justify removal of the limit. However, the effluent limitation in the current permit reflects an inland surface water limitation and staff concur with Comment 1 (b) that the applicable effluent limitation should be 3.75 TUa in accordance with the Ocean Plan procedure for calculating such a limitation. On March 29, 2012, staff discussed the appropriate test procedures with DGF and concur with DGF's Comment 1 (a) that the effluent limitations need to reference saltwater aquatic organisms as set forth in the Ocean Plan. Staff have also inserted the definitions for acute and chronic toxicity units directly from the Ocean Plan in Attachment A, in response to comment 1(c).

Staff have made the following changes to the draft Order in response to these comments:

A. Final Effluent Limitations

1. Final Effluent Limitations – Discharge Point 001

Table 7. Effluent Limitations at Discharge Point 001 (Gross Effluent Monitoring Location M-001)

Parameters	Units	Effluent Limitations			
		6-Month Median	Daily Maximum	Instantaneous Minimum	Instantaneous Maximum
Acute Toxicity	TU_a	--	3.75	--	--

Table E-2. Gross Effluent Monitoring – Location M-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Acute Toxicity	TUa	Grab	Semi-Annually	See Acute Toxicity Monitoring Requirements Section IV.
Chronic Toxicity	TUc	Grab	Quarterly[8]	See Chronic Toxicity Monitoring Requirements Section IV.

Acute Toxicity: This parameter shall be used to measure the acceptability of waters for supporting a healthy marine biota until improved methods are developed to evaluate biological response.

a. Acute Toxicity

Expressed in Toxic Units Acute (TUa)

$$TUa = \frac{100}{96\text{-hr LC } 50\%}$$

b. Lethal Concentration 50% (LC 50)

LC 50 (percent waste giving 50% survival of test organisms) shall be determined by static or continuous flow bioassay techniques using standard marine test species as specified in Appendix III, Chapter II of the Ocean Plan. If specific identifiable substances in wastewater can be demonstrated by the discharger as being rapidly rendered harmless upon discharge to the marine environment, but not as a result of dilution, the LC 50 may be determined after the test samples are adjusted to remove the influence of those substances.

When it is not possible to measure the 96-hour LC 50 due to greater than 50 percent survival of the test species in 100 percent waste, the toxicity concentration shall be calculated by the expression:

$$TUa = \frac{\log (100-S)}{1.7}$$

where:

S = percentage survival in 100% waste. If S>99, TUa shall be reported as zero.

Chronic Toxicity: This parameter shall be used to measure the acceptability of waters for supporting a healthy marine biota until improved methods are developed to evaluate biological response.

a. Chronic Toxicity (TUc)

Expressed as Toxic Units Chronic (TUc)

$$TUc = \frac{100}{NOEL}$$

b. No Observed Effect Level (NOEL)

The NOEL is expressed as the maximum percent effluent or receiving water that causes no observable effect on a test organism, as determined by the result of a critical life stage toxicity test listed in Ocean Plan Appendix III, Table III-1.

Comment 1 (d). Section IV.A.3 of the monitoring and reporting program (MRP) refers to the use of freshwater organisms for the test species for acute WET testing. This section needs to be updated to reference the correct saltwater test species in accordance with the comments above, if saltwater acute toxicity testing methods are selected for this discharge.

Response 1(d). DGF correctly identified this discrepancy, which was been amended in the proposed Order as follows:

B. Acute Toxicity Testing

The Discharger shall conduct acute whole effluent toxicity (WET) testing to determine compliance with the effluent limitation for acute toxicity established by section IV.A.1.a of the Order.

1. **Test Frequency**. The Discharger shall conduct acute WET testing in accordance with the schedule established by this MRP, as summarized in Table E-2, above, when discharging to the Pacific Ocean.

2. **Sample Type**. For 96-hour static renewal or 96-hour static non-renewal testing, the effluent samples shall be 24-hour composite samples representative of the volume and quality of the discharge from the Facility, collected at Monitoring Location M-001. For toxicity tests requiring renewals, 24-hour composite samples collected on consecutive days are required.

3. **Test Species**. Test species for acute WET testing shall be conducted using an approved test, and test species, as described by Table III-1 of the Ocean Plan and presented below in Table E-5. Initial testing for the first suite of tests shall be conducted with a vertebrate, an invertebrate, and a plant species, and thereafter, monitoring can be reduced to the most sensitive species. At least once every 5 years, the Discharger shall re-screen with the two species described above and continue routine monitoring with the most sensitive species.

Comment 1 (e). Consistent with the other changes noted above, references to the acute toxicity testing requirements in the fact sheet need to be updated to reflect the requirements for saltwater vs. freshwater test species and the appropriate effluent limitations.

Response 1(e): Consistent with the other changes referenced above, staff have made the following changes to the Fact Sheet with regards to Acute Toxicity:

Paragraph 4 of the Final Effluent Limitations Satisfaction of Anti-Backsliding Requirements A.1 on page F-40 of the Fact Sheet has been added to provide a basis for the removal of the acute toxicity effluent limitation in response to this comment:

The previous permit contained effluent limitations for acute toxicity of aquatic organisms in a format inconsistent with the applicable Ocean Plan procedure for developing such limitations. The previous permit did not contain monitoring requirements for acute toxicity and the one sample that the Discharger took in 2011 is insufficient to justify removal of the limitation. Instead, this Order correctly implements the Ocean Plan procedure for calculation of effluent limitations in terms of acute toxicity units (TUa) and this Order replaces the previous limitation with 3.75 TUa and anti-backsliding requirements are satisfied.

Finding IV.B.3 of the Fact Sheet on page F-46 has been changed as follows:

Semi-annual monitoring for acute toxicity is included to determine compliance with the respective effluent limitation.

Comment 2. DGF is requesting a reduction in the proposed chronic toxicity sampling frequency from quarterly to semi-annually.

Table E-2 in the MRP refers to the requirement for the discharger to conduct quarterly chronic toxicity monitoring. We request semi-annual monitoring instead of quarterly monitoring. The existing permit requires only annual monitoring and historical results have been in compliance with the effluent limitation for chronic toxicity (TUc <115). The MRP is now requiring four times the amount of existing sampling without clear justification for the increase in frequency, given there was no exceedance of the limitation for this constituent. Other ocean dischargers in the region have only semi-annual or annual chronic toxicity testing requirements.

Response 2: The draft Order has increased the monitoring frequency for chronic toxicity relative to the current permit from annually to quarterly to collect sufficient toxicity data to support a more robust reasonable potential analysis in the next permit renewal. DGF did not comply with the monitoring requirements for chronic toxicity in the current permit, which inhibited an statistically powerful analysis of the potential for the discharge to cause toxicity in the receiving waters. The draft Order included a footnote, which automatically allows for a reduction in the chronic toxicity monitoring frequency to semi-annually after three consecutive years of quarterly monitoring results demonstrating compliance with the chronic toxicity effluent limitation. During discussions with staff, DGF clarified this comment and requested a reduction in the three year trigger for reduced monitoring based on the number of deficient samples from the previous permit term. As a result of discussions with staff regarding this comment, DGF submitted a summary of chronic toxicity sample results, which included three samples from 2008, 2009 and 2011, respectively. These data did not include the results from a 2004 sample. After reviewing the four chronic toxicity data points, the reasonable potential analysis was redone and resulted in Endpoint 1 (reasonable potential for chronic toxicity) rather than Endpoint 3 (insufficient data to justify removal of the existing effluent limitation). This reasonable potential is the direct result of having such a small data set for the parametric statistical analysis.

Since the previous permit required annual chronic toxicity monitoring, or ten samples from 2002 through 2011, but only four samples were taken, the trigger has been reduced from three years (twelve samples) to eighteen months or six quarterly samples to accommodate this comment.

As a result of the new RPA, staff made a minor modification to the draft Order in Table F-13 on page F-26 of the proposed Order as shown in Response 4 on Page 12 below.

The following change has been made to Footnote 8 of the quarterly minimum sampling frequency for Chronic Toxicity in Table E-2 of the proposed Order as follows:

> Footnote 8: The Discharger may reduce the monitoring frequency for chronic toxicity from quarterly to semi-annually after six consecutive quarterly monitoring results demonstrating compliance with the chronic toxicity effluent limitation. If an exceedance of the chronic toxicity effluent limitation is detected, monitoring shall return to quarterly for the remainder of the permit term.

Comment 3. Section IV.8.5 sets for the test dilutions for WET testing as consisting of the following dilution series: 3.4, 1.75, 0.87, 0.45, and 0.25 percent effluent. There is no reference for how the test dilutions were determined. Recent testing (October 2011) has included test dilutions of 0.25, 0.5, 1, 2, and 4 percent effluent. Please clarify how the test dilutions were determined and whether the recent test dilution as noted above may be used.

Response 3: This Order also establishes a new dilution series for WET testing of 3.4, 1.75, 0.87, 0.45, and 0.25 because the instream waste concentration (IWC) is approximately 0.87% wastewater and this dilution series brackets the IWC better than the existing Order, which will provide more accurate WET tests. This is consistent with US EPA Regions 9 and 10 Guidance For Implementing Whole Effluent Toxicity Testing Programs, which states in Appendix D "A series of at least five effluent dilutions and a control shall be tested. <u>At minimum</u>, the dilution series shall include and bracket the IWCs." (Emphasis original).

This response has been included in the Fact Sheet at page F-39 verbatim.

Comment 4: Table F-13 in section rv.C.3.e.ii summarizes the Ocean Reasonable Potential Analysis (RPA) Results. This section also refers to the dilution ratio of 115:1 as being considered during the RPA. However, based on review of the data shown in Table F-13, it does not appear that the maximum effluent concentrations included in the table were adjusted for each constituent based on the dilution factor and/ or adjusted for background saltwater concentrations where applicable. For example, the maximum effluent concentration listed in the table for copper is 990 micrograms per Liter (ug/L). This is the same value as the highest instantaneous maximum shown in Table F-4 for copper. The notes for Table F-13 indicate that the maximum effluent concentration is the expected concentration after complete mixing. In accordance with the reasonable potential procedure outlined in Appendix VI of the Ocean Plan, the maximum effluent concentrations shown in the table, and used for the RPA, need to be adjusted for the background saltwater concentration of each constituent (where applicable) and the minimum initial dilution credit granted for the discharge.

Response 4: Regional Water Board staff agrees that the data in Table F-13 should represent the expected concentration after complete mixing and, therefore, the table

has been amended to be consistent with the footnote. The nondetect maximum effluent concentration values in Table F-13 have also been changed to read "ND" as this will eliminate any potential confusion regarding dilution and nondetect data. The amended table is as follows:

Table B Pollutant	Most Stringent WQO (µg/L)	No. of Samples	No. of Non-Detects	Max Effluent Conc. (µg/L)	RPA Result, Comment
Objectives for Protection of Marine Aquatic Life					
Arsenic	8	2	2	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Cadmium	1	2	2	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Chlorinated Phenolics	1	2	2	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Chromium (VI)	2	20	20	ND	Endpoint 2- An effluent limitation is not required for this pollutant. Monitoring may be required as appropriate.
Copper	**3**	**33**	**18**	**10.52**	**Endpoint 1- An effluent limitation must be developed for this pollutant. Monitoring is required.**
Cyanide	1	2	2	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Total Chlorine Residual	2	30	27	1.72	Endpoint 2- An effluent limitation is not required for this pollutant. Monitoring may be required as appropriate.
Acute Toxicity	0.3 (TUa)	1	0	0.08	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Chronic Toxicity	1 (TUc)	4	0	0.43	**Endpoint 1- An effluent limitation must be developed for this pollutant. Monitoring is required.**
Ammonia (as N)	600	1	1	ND	Endpoint 3- RPA is inconclusive. Less than 3

Table B Pollutant	Most Stringent WQO (µg/L)	No. of Samples	No. of Non-Detects	Max Effluent Conc. (µg/L)	RPA Result, Comment
					detects or greater than 80% ND.
Endosulfan	0.009	3	3	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Endrin	0.002	3	3	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
HCH	0.004	3	3	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Lead	2	33	31	0.43	Endpoint 2- An effluent limitation is not required for this pollutant. Monitoring may be required as appropriate.
Mercury	0.04	3	3	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Nickel	5	2	1	15	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Non-chlorinated Phenolics	30	4	4	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Selenium	15	2	2	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Silver	0.7	2	2	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Zinc	20	32	23	14.14	Endpoint 2- An effluent limitation is not required for this pollutant. Monitoring may be required as appropriate.
Objectives for Protection of Human Health – Noncarcinogens					
1,1,1-Trichloroethane	540,000	2	2	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.

Table B Pollutant	Most Stringent WQO (µg/L)	No. of Samples	No. of Non-Detects	Max Effluent Conc. (µg/L)	RPA Result, Comment
2,4-Dinitrophenol	4	1	1	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
2-Methyl-4,6-Dinitrophenol	220	1	1	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Acrolein	220	1	1	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Antimony	1,200	2	2	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Bis(2-Chloroethoxy) Methane	4.4	1	1	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Bis(2-Chloroisopropyl)Ether	1,200	1	1	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Chlorobenzene	570	2	2	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Chromium (III)	190,000	2	2	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Dichlorobenzenes	5,100	4	4	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Diethyl Phthalate	33,000	1	1	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Dimethyl Phthalate	820,000	1	1	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Di-n-Butyl Phthalate	3,500	1	1	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Ethylbenzene	4,100	2	2	ND	Endpoint 3- RPA is

Table B Pollutant	Most Stringent WQO (µg/L)	No. of Samples	No. of Non-Detects	Max Effluent Conc. (µg/L)	RPA Result, Comment
					inconclusive. Less than 3 detects or greater than 80% ND.
Fluoranthene	15	1	1	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Hexachlorocyclopentadiene	58	1	1	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Nitrobenzene	4.9	1	1	0.0082	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Thallium	2	3	3	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Toluene	85,000	2	2	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Tributyltin	0.0014	NA	NA	NA	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Objectives for Protection of Human Health – Carcinogens					
1,1,2,2-Tetrachloroethane	2.3	2	2	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
1,1,2-Trichloroethane	9.4	2	2	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
1,1-Dichloroethylene	0.9	2	2	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
1,2-Dichloroethane	28	2	2	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
1,2-Diphenylhydrazine	0.16	1	1	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
1,3-Dichloropropylene	8.9	2	2	ND	Endpoint 3- RPA is

Table B Pollutant	Most Stringent WQO (µg/L)	No. of Samples	No. of Non-Detects	Max Effluent Conc. (µg/L)	RPA Result, Comment
					inconclusive. Less than 3 detects or greater than 80% ND.
1,4 Dichlorobenzene	18	2	2	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
TCDD Equivalents	3.9×10^{-9}	2	1	1.2×10^{-10}	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
2,4,6-Trichlorophenol	0.29	1	1	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
2,4-Dinitrotoluene	2.6	1	1	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
3,3'-Dichlorobenzidine	0.0081	1	1	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Acrylonitrile	0.1	1	1	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Aldrin	0.000022	3	3	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Benzene	5.9	2	2	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Benzidine	0.000069	1	1	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Beryllium	0.033	1	1	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Bis(2-Chloroethyl)Ether	0.045	1	1	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Bis(2-Ethylhexyl)Phthalate	3.5	2	1	0.16	Endpoint 3- RPA is inconclusive. Less than 3

Table B Pollutant	Most Stringent WQO (µg/L)	No. of Samples	No. of Non-Detects	Max Effluent Conc. (µg/L)	RPA Result, Comment
					detects or greater than 80% ND.
Carbon Tetrachloride	0.9	2	2	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Chlordane	0.000023	3	3	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Chlorodibromomethane	8.6	2	1	0.0034	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Chloroform	130	1	1	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
DDT	0.00017	9	9	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Dichlorobromomethane	6.5	2	1	0.011	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Dieldrin	0.00004	3	3	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Halomethanes	130	3	3	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Heptachlor	0.00005	3	3	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Heptachlor Epoxide	0.00002	3	3	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Hexachlorobenzene	0.00021	1	1	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Hexachlorobutadiene	14	2	2	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than

Table B Pollutant	Most Stringent WQO (µg/L)	No. of Samples	No. of Non-Detects	Max Effluent Conc. (µg/L)	RPA Result, Comment
					80% ND.
Hexachloroethane	2.5	1	1	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Isophorone	730	1	1	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Methylene Chloride	450	2	2	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
N-Nitrosodimethylamine	7.3	1	1	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
N-Nitrosodi-n-Propylamine	0.38	1	1	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
N-Nitrosodiphenylamine	2.5	1	1	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
PAHs	0.0088	11	11	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
PCBs	0.000019	3	3	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Tetrachloroethylene	2	2	2	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Toxaphene	0.00021	3	3	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Trichloroethylene	27	2	2	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Vinyl Chloride	36	1	1	ND	Endpoint 3- RPA is inconclusive. Less than 3 detects or greater than 80% ND.

Table B Pollutant	Most Stringent WQO (µg/L)	No. of Samples	No. of Non-Detects	Max Effluent Conc. (µg/L)	RPA Result, Comment

Notes to Table F-12:
ND indicates that the pollutant was not detected.
NA indicates that data was not available.
Minimum probable initial dilution for this discharger is 115:1.
The Maximum Effluent Concentration is the expected concentration after complete mixing, in accordance with reasonable potential procedure in Appendix VI of the Ocean Plan.

Comment 5 (a): Table F-16 in section IV.C.3.e.iii summarizes the mass-based limitations for total recoverable copper. These mass limitations were based on the "highest six-month median flow" of 0.146 million gallons per day (MGD). Mass-based limits were not included in the previous permit and the fact sheet provides some justification for why mass-based limits are being included during this permit cycle.

DGF requests that the mass-based limits be set using the facility maximum design flow of 0.350 MGD, rather than the referenced highest six-month median flow. Once these limits are set, any proposed increase will be subject to anti-degradation requirements: it is important to set the limits based on anticipated maximum process flows so that when the facility is discharging process flows at the maximum flow capacity, appropriate limits are in place. Note these are process-based flows and the discharger should not be held to lower mass limits when discharging at an allowable process flow rate greater than the referenced six-month median flow.

Response 5(a): Production-based effluent limitations are required by 40 CFR 122.45 (b)(2)(i) to be based “not upon the designed production capacity but rather upon a reasonable measure of actual production of the facility.” Since the mass emissions at the Facility are a function of the operation of the Facility and of the amount of energy produced, these limits have been calculated using the highest six-month median flow. This flow value is consistent with the most stringent mass-based effluent limitation from Table B of the Ocean Plan, which is based on a 6-month median concentration. It is important to note here that the mass-based effluent limitations are functions of both flow and concentration and, therefore, increases in flow alone will not necessarily cause an exceedance of the mass-based effluent limitation. However, usage of the maximum design flow of 0.35 mgd as requested by DGF in this comment would make this limitation completely redundant with the concentration-based limitations (i.e. the mass limits would be exceeded if and only if DGF discharges in excess of the concentration limits while operating at maximum flows of 0.35 mgd).

The flow used in calculation of the mass-based limitations is based on existing flow data, but is intended to be a best estimate of actual flows under current operations (i.e. with no significant increase in production). According to the September 2010 US EPA NPDES Permit Writers’ Manual, up to a 20 percent fluctuation in production is considered to be within the range of normal variability. Therefore, staff used best professional judgment (BPJ) in response to this comment by increasing the flow value in

the calculation of the mass-based limitations by 20 percent. The draft Order uses a flow of 0.146 MGD, but the proposed Order now contains a flow value of 0.1752 MGD that results in the following mass-based limitations for copper:

Parameters	Units	Effluent Limitations			
		6-Month Median	Daily Maximum	Instantaneous Minimum	Instantaneous Maximum
Copper, Total Recoverable	lb/day	0.172	1.698	--	4.749

Comment 5 (b). We understand that based on recent correspondence from the State Water Resources Control Board, it appears that section III.C.8.d of the Ocean Plan applies to only once through cooling (OTC) power plants and does not apply specifically for this discharge. Based on this finding, it appears all references to the copper limitations and mass-based loadings for the low-volume waste stream should be removed from the permit. Furthermore, the plumbing at the facility does not lend itself to low-volume flow monitoring. In accordance with the Ocean Plan requirements, compliance with the copper limitations, for example, can be assessed through the monitoring of the gross effluent and it is unclear why additional monitoring of copper in the internal process waste streams would be required.

Response 5(b): Staff concur with DGF that the correct interpretation of Section III.C.8.d of the Ocean Plan requires elimination of the copper effluent limitations on the low-volume waste stream. Monitoring of copper in the cooling tower blowdown will only be required if copper is contained in the cooling tower maintenance chemicals. Monitoring of copper in the low volume waste streams has been eliminated in response to this comment.

Comment 6: The discharger requests that the references to the two-hour limitation on chlorine discharges be removed from the permit, the MRP, and the fact sheet. The discharger has asked the water treatment chemical provider for the facility to provide the supporting information that demonstrates that the discharger cannot operate at or below the current level of chlorination. A copy of the letter from the water treatment chemical provider is included as Attachment 1.

Response 6: The two-hour limitation on chlorine discharges has been removed from the permit in response to this comment based on the new evidence provided in the letter from Watercare, which was attached to DGF's comments. 40 CFR Part 423.12 (b)(8) places the burden of proof on the Discharger to demonstrate that limitations on the duration of chlorine discharge are infeasible. The Watercare letter provides sufficient justification to remove the effluent limitation of the duration of chlorine discharges. The following changes have been made to the draft Order:

Table F-21. Discharge Point 020 (while discharging to Pacific Ocean) Summary of Final Effluent Limitations at Discharge Point 020

Parameters	Units	Effluent Limitations						Basis
		30-Day Average	Maximum Daily	Average	Maximum	Instantaneous Minimum	Instantaneous Maximum	

Comment 7: The discharger requests that the permit include reference to two types of bottom ash material being stored at the facility: one consisting of raw bottom ash and one consisting of processed bottom ash that has been washed and is ready for reuse. Furthermore, the discharger requests that the storage of processed bottom ash not be subject to Title 27 storage requirements and those proposed obligations be removed. We understand the industry-wide handling of bottom ash calls for a discussion that extends well beyond this permit. The discharger is prepared to discuss mutually agreeable best management practices.

Response 7: DGF has correctly identified that the waste classification of processed bottom ash is currently being reviewed by staff and that the Solids Disposal and Handling Requirements, as included in the draft Order, insufficiently recognize this distinction. Staff have revised the finding to allow for operational flexibility in the future, as follows:

Solids Disposal and Handling Requirements.

i. By July 1, 2013, Bottom and Fly Ash generated at the Facility shall be stored in a Title 27 compliant area with an impermeable cover or in a manner approved by the Executive Officer, until it can be either disposed at a solid waste facility for which waste discharge requirements have been prescribed by a Regional Water Board or disposed in a manner approved by the Regional Water Board.

Comment 8: The discharger requests that a revised flow diagram (see Attachment 2) be used in place of the flow schematic currently shown in Figure C-I.

Response 8: Staff concur with DFG's comment and have replaced the flow schematic in the draft Order with the revised flow diagram provided by DFG in its comments.

Comments 9, 10 and 11: Table E-2 in the MRP refers to the requirement for the discharger to conduct monthly testing for total recoverable copper, chromium, and zinc at the gross effluent. The discharger requests quarterly monitoring instead of monthly monitoring. However, if an effluent limitation is exceeded for a specific constituent, then that constituent would be sampled on a monthly basis. The existing permit only requires quarterly sampling of these constituents and historical results have been in compliance with the effluent limitations for all three constituents with the exception of the 6-month median for copper. As for the 6-month copper effluent limitation please refer to Comment 5.

Table E-3 in the MRP refers to the requirement for the discharger to conduct monthly testing for Total Suspended Solids, Oil and Grease at the low volume waste. The discharger requests quarterly monitoring instead of monthly monitoring. However, if an effluent limitation is exceeded for a specific constituent, then that constituent would be sampled on a monthly basis. The existing permit only requires quarterly sampling of these constituents and historical results have been in compliance with the effluent limitations for both constituents. Total recoverable copper has been added to Table E-3. Please refer to Comment 5 for our request to remove copper monitoring from the low volume waste.

Table E-4 in the MRP refers to the requirement for the discharger to conduct monthly testing for total recoverable Chromium and Zinc at the cooling tower blow down. The discharger requests quarterly monitoring instead of monthly monitoring. However, if an effluent limitation is exceeded for a specific constituent, then that constituent would be sampled on a monthly basis. The existing permit only requires quarterly sampling of these constituents and historical results have been in compliance with the effluent limitations for both constituents.

Responses 9,10 and 11: This draft Order has increased the monitoring frequencies from quarterly to monthly, in part, because the previous sample locations were inappropriately sited to accurately represent low volume wastes separate from cooling tower blowdown and, in part, because quarterly sampling does not provide enough data to effectively calculate a 6-month median. DGF's claim that historical results have been in compliance does not account for the fact that compliance determinations were inhibited by the commingling of the cooling tower blowdown and the low volume waste streams prior to sampling. Staff are willing to reduce sampling frequencies from monthly to quarterly if the data collected from appropriately sited, representative monitoring points indicate consistent compliance with the effluent limitations, with the exception of copper and pH because DGF has demonstrated reasonable potential to exceed the water quality objectives for these parameters. To accommodate this request, staff have made the following modifications to the draft Order:

Table E-2. Gross Effluent Monitoring – Location M-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Chromium, Total Recoverable	µg/L	Grab	Monthly[4]	Part 136
Zinc, Total Recoverable	µg/L	Grab	Monthly[9]	Part 136

[4] The minimum sampling frequency for this constituent may be reduced to quarterly upon six consecutive monitoring results in compliance with the respective effluent limitation, however, if at any time monitoring results show an exceedance of the respective effluent limitation, the minimum sampling frequency shall be reduced to monthly.

Table E-3. Low Volume Waste Monitoring – Location M-010

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Total Suspended Solids	mg/L	Grab	Monthly[9]	Std Method 2540D
Oil and Grease	mg/L	Grab	Monthly[9]	Std Method 5520

Table E-4. Cooling Tower Blowdown Monitoring – Location M-020

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Chromium, Total Recoverable	mg/L	Grab	Monthly[9]	40 CFR Part 136
Zinc, Total Recoverable	mg/L	Grab	Monthly[9]	40 CFR Part 136

Table F-11. TBELs at Monitoring Location M-020

Parameter	Units	Effluent Limitations					
		30-Day Average	Maximum Daily	Average	Maximum	Instantaneous Minimum	Instantaneous Maximum
Free Available Chlorine	mg/L	--	--	0.2	0.5	--	--

OTHER MINOR CHANGES TO DRAFT ORDER:

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Process Water Gross Effluent combined discharge (including: Low Volume Wastes and Cooling Tower Blowdown) following all treatment processes prior to contact with receiving water (Pacific Ocean).	40° 49' 10" N	124° 13' 32" W	Pacific Ocean
010	Low volume wastewater (screw and bearing cooling process water, boiler blowdown, demineralizer back flush, and reverse osmosis concentrate) prior to commingling with cooling tower blowdown.	40° 47' 57.2" N	124° 12' 10.9" W	Pacific Ocean
020	Cooling tower blowdown process wastewater prior to commingling with low volume wastewaters.	40° 47' 57.3" N	124° 12' 11.5" W	Pacific Ocean

Section IV.C.3.a.iii of the Fact Sheet

i. WQBEL Calculations

Based on results of the RPA, performed in accordance with methods of the Ocean Plan for discharges to the Pacific Ocean, the Regional Water Board is establishing a WQBEL for total recoverable copper and chronic toxicity for the wastewater discharged through Discharge Point 001. Further, because ELGs have been established for total recoverable chromium, total recoverable zinc, and total chromium, WQBELs for these parameters must be calculated to ensure the technology-based effluent limitations do not allow for exceedances of water quality objectives.

Table F-14. Background Seawater Concentration – Ocean Plan

Parameter	Background Seawater Concentration (µg/L)
Arsenic	3
Copper	2
Mercury	0.0005
Silver	0.16
Zinc	8
Chronic Toxicity	0

Table F-15. Table B Water Quality Objectives

Parameter	Units	6-Month Median	30-Day Average	Daily Maximum	Instantaneous Maximum
Copper, Total Recoverable	µg/L	3	--	12	30
Chromium, Total Recoverable	µg/L	2	--	8	20
Lead	µg/L	2	--	8	20
Zinc, Total Recoverable	µg/L	20	--	80	200
Chronic Toxicity	TUc	--	--	1	--

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<u>Chromium</u>

Ce = 2 + 115 (2 – 0) = 232 µg/L (6-Month Median)
Ce = 8 + 115 (8 – 0) = 928 µg/L (Daily Maximum)
Ce = 20 + 115 (20 – 0) = 2,320 µg/L (Instantaneous Maximum)

<u>Lead</u>

Ce = 2 + 115 (2 – 0) = 232 µg/L (6-Month Median)
Ce = 8 + 115 (8 – 0) = 928 µg/L (Daily Maximum)
Ce = 20 + 115 (20 – 0) = 2,320 µg/L (Instantaneous Maximum)

<u>Chronic Toxicity</u>

Ce = 1 + 115 (1 - 0) = 116 TUc (Daily Maximum)

Section IV.D.1 of the Fact Sheet

Satisfaction of Anti-Backsliding Requirements

The effluent limitation for Chronic Toxicity in the previous permit was the result of a miscalculation and represented the 115:1 dilution factor directly as a limit of 115 TUc. This Order correctly calculates the Chronic Toxicity limitation using the Ocean Plan procedure, which results in an effluent limitation of 116 TUc. This minor change to the limitation does not affect the determination of reasonable potential and therefore satisfies antibacksliding requirements.

Table 7. Effluent Limitations at Discharge Point 001 (Gross Effluent Monitoring Location M-001)

Parameters	Units	Effluent Limitations			
		6-Month Median	Daily Maximum	Instantaneous Minimum	Instantaneous Maximum
Chronic Toxicity	TU_c	--	116	--	--