Response to Comments

The City of Redondo Beach
Seaside Lagoon
Tentative Order No. R4-2010-XXXX
NPDES Permit No. CA0064297, CI No. 8034

#	Comment	Agree	Disagree	Reply	Action Taken
Letter dated August 30, 2010 from Ms. Maggie Healy, Acting Director – Recreation & Community Services, City of Redondo Beach					
1	The City requests a continuance of the October 7, 2010, hearing date and the opportunity to submit further comments based on additional testing. The City respectfully seeks one year to study the presence of heavy metals in influent and effluent water at Seaside Lagoon, particularly because the City's preliminary heavy metals monitoring results suggest that heavy metals levels in local ocean water far exceed the limits proposed in the 2010 Order.		X	The current permit (Order No. R4-2005-0016) expired on February 10, 2010. The terms and conditions of the current Order as per 40 CFR Part 122.6 remain in effect until the Regional Board adopts a new permit. The Regional Board is required to review and renew the permit in a timely fashion. Therefore, your request for continuance is denied. However, the permit has been revised to provide time to study metals concentrations in the influent and effluent. The study will provide the required data to determine reasonable potential and the applicability of intake credits or other permit conditions as necessary. The renewed permit may be re-opened on or before March 31, 2013 if data from this study justifies a change to the exiting	None necessary

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				permit.	
2	Heavy metals should not be included in the permit. The City is particularly concerned with the inclusion in the 2010 Order of effluent limitations for the following heavy metals: 1) arsenic; 2) cadmium; 3) copper; 4) nickel; 5) selenium; 6) silver; 7) thallium; and 8) zinc (hereinafter collectively referred to as "Heavy Metals"). These Heavy Metals have not historically been included in the Seaside Lagoon NPDES Permit.	X		The effluent limitations must protect the beneficial uses of the receiving water (King Harbor). The process of developing water quality criteria includes analysis of the contaminant concentrations detected to determine levels that are protective of human health and the environment. A Reasonable Potential Analysis (RPA), based on procedures outlined in the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy or SIP) was conducted on the sampling data submitted by the City. The analysis of the data indicates reasonable potential for eight metals to cause or contribute to an exceedance of applicable water quality criteria. However, Regional Board staff acknowledges that the data set is very small, five data points. Since the data set is small and in most cases only one sample exceeded the applicable water quality criteria and there is uncertainty regarding the representativeness of the samples for conducting reasonable potential analysis, and calculating possible interim limitations and/or intake credits. Regional	Effluent limits for metals have been deleted from the permit. A requirement for the Work Plan is included in the revised-tentative WDR, MRP and the Fact Sheet.

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				Board staff agree that additional sampling is required. The revised-tentative permit will be modified to include a requirement for the City of Redondo Beach to conduct a special study, initiated with the requirement for a work plan to be developed and submitted to the Regional Board for review and approval by the Executive Officer. After Executive Officer approval, the Discharger will implement the work plan. Reasonable Potential Analysis will be performed on the data submitted under the study to determine which metals, if any, require limitations as well as the possibility of intake credits or interim effluent limitations.	
2.a	Background regarding City's preliminary heavy metal testing. By way of background, there are four bodies of water that were the subjects of the City's preliminary monitoring: 1) Effluent that is discharged from the Seaside Lagoon; 2) Influent that is discharged into the Seaside Lagoon, 3) Ocean water that, during periods when the AES power plant is operating, provides the source of water for the Seaside Lagoon influent, and 4) King Harbor water that, during periods when the AES Power Plant is not operating, provides the	- -	- -	Since the issuance of the tentative permit the City of Redondo Beach has conducted additional sampling. The data, submitted as an attachment to the comments, continues to demonstrate considerable variability. Some of the graphs suggest that the Lagoon is actually removing metals from the intake water. Since the facility operations does not include any of treatment it is not likely that the use of the water in the Lagoon is resulting in a reduction in the amount of metals present.	None necessary.

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	source of water for the Seaside Lagoon influent. Samples were taken from the four locations two times per week from July 12, 2010 through August 27, 2010. Each of the four locations was sampled in the morning between 8:00 a.m. to 11:00 a.m. A fifth sample was taken from Location A in the afternoon approximately seven hours after the first sample. This sample was taken to compensate for the lag time between when water enters the lagoon and when it leaves the Lagoon.				
2.b	The Heavy Metals monitoring results, did not demonstrate that Seaside Lagoon was adding any Heavy Metals to the effluent. The monitoring results for concentrations of Heavy Metals in the Seaside Lagoon's influent and effluent indicate there is a substantial amount of temporal variability (i.e., standard deviations as high as 114% and 92% of the mean concentration for individual metals sampled in the influent and effluent, respectively). Not only did water samples collected from the same locations on different days frequently display large differences in metal concentrations, but effluent water samples	X		The procedures for determining the need for effluent limits is prescribed in Section 1.4.1 of the SIP. The monitoring data collected for metals showed temporal variability in the collected influent and effluent sample results. The water samples collected from the same locations on different days displayed large differences in metal concentrations and effluent samples collected at different times during the same day also displayed considerable variability. The City will be required to conduct additional sampling as part of a Special Study that will provide a more robust and representative data	See Response to Comment #2.

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	collected at different times during the same day also displayed considerable variability. This observation suggests that additional consideration of the sampling schedule is warranted. Further investigating the correlation between influent and effluent metal concentrations could reveal the timing -of sample collection from the two locations that could be most accurately applied to influent credits when this method of complying with effluent limitations is applicable. In addition to the variability in metals concentrations observed for the Seaside Lagoon's influent and effluent water, the preliminary data indicate similar standard deviations for Heavy Metals sampled at shallow depths within King Harbor and overlying the AES Power Plant's ocean intake. Moreover, mean values for some of the Heavy Metals are higher in the harbor or ocean water than in either the Seaside Lagoon's influent or effluent water. This observation absolutely warrants further			set. The objectives of the Work Plan and the associated Special Study are to: 1. develop and implement an accelerated monitoring plan (weekly sampling, at a minimum) for measuring metals in the influent and effluent, 2. refine sampling protocols (grab versus composite) 3. refine data collection points, 4. refine data collection timing in order to have the best data set for determining reasonable potential, intake credits and other permit provisions, 5. examine sampling and laboratory protocols to insure adequate QA/QC. A focus on gathering more representative samples of the influent and effluent will provide some assurance that an accurate measure of the metal concentrations is occurring. The required Work Plan as specified in the Special Provisions Section of the MRP may include a component with composite sampling to average the detected metal concentrations over the entire discharge day.	

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	investigation			The need for effluent limitations for metals as well as the possible application of intake credits will be evaluated using the sampling results provided from the study. Statistical analyses will be performed on the monitoring data, and if necessary, the permit will be reopened for Board's consideration.	
2.c	Additional reasons for excluding heavy metals in the permit Pursuant to a previously issued TSO, in 2007, the City commissioned CDM to conduct a study identifying a cause of TSS exceedences in the Seaside Lagoon. This October 1, 2007 CDM report, concluded that effluent TSS was highly correlated with influent TSS and that the suspended solids were most likely dominated by inorganic particulates. The low turbidity and TOC levels measured in water samples supported their conclusion. Considering the tendency of metals to adsorb to particulate matter in the water column, it is possible that effluent Heavy Metals concentrations are similarly correlated with influent metals concentrations. As such,	- -	- -	Please see Response to Comment above for the need to collect additional data to characterize the discharge and to determine the best way to account for discharge variability. Effluent limits contained in NPDES permits have to be expressed as total metals. The CTR's preamble (Federal Register Volume 65, No. 97, Thursday, May 18, 2000, pg. 31690) states the fact that the U.S. EPA's NPDES regulations require limits in permits for metals to be expressed as total recoverable, clarifies why this is a scientifically preferable solution, refers to the use of metals translators and the U.S. EPA's metals translator guidance	See Response to Comment #2.

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	researching and documenting the concentrations of influent metals would seem to be an important prerequisite for setting effluent standards. At minimum, the 2010 Order should be revised to be limited to an analysis of only dissolved metal concentrations. The proposed effluent limitations call for the analysis of total recoverable metals, which includes both dissolved and particulate bound metals. As the particulate-bound metals are influenced by the variable TSS concentrations, dissolved metal concentrations may be a more stable indicator for monitoring purposes. Whereas both soluble and adsorbed metals have been shown to affect marine organisms, soluble metals are generally considered more bioavailable. This fact is yet another reason why the Regional Board should continue the October 7, 2010 hearing to allow for additional testing to determine whether the inclusion of Heavy Metals in the 2010 Order truly is warranted			document, and provides guidance for California Regional Water Quality Control Boards to use the metals translators. To conduct an RPA, effluent concentrations must be compared meaningfully to water quality objectives (WQOs). Since NPDES permit limits must be expressed as total recoverable metals, effluent data need to be expressed as total recoverable metals for compliance monitoring. Therefore, it is more efficient to convert the dissolved WQOs to total metals using appropriate translators, as described in Section 1.4.1 of the SIP.	
3	Evidence shows that TSS testing in saline environment is not reliable. The Regional Board should continue the			This comment references the general permit adopted by the San Francisco Regional Board, (Order No. R2-2008-0011) Discharges of	

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	October 7, 2010 hearing on the 2010 Order because evidence shows that TSS testing in a saline environment is not reliable because salinity interferes with the results. In Order No. R2-2006-0038, hereto, the Regional Water Quality Control Board for the San Francisco Bay region ("San Francisco Board") rescinded the waste discharge requirement for TSS from two NPDES permits (NPDES Permit Nos. CA0030139 and CA0030147) based on evidence (in a study entitled *"Evaluation of the Accuracy and Reliability of EPA Test Method 160.2 to Measure Total Suspended Solids in Effluent from Marine Sand Processing Facilities, June 1, 2005")* that showed that the analytical method for TSS is not reliable for saline samples because salinity interferes with the results. Based on the evidence, the San Francisco Board found that it was appropriate to waive monitoring for compliance of TSS not only in the General Permit for that particular discharger's facilities, but in other facilities that process sand from saline environments in the Bay Area region. TSS testing in a saline environment is not reliable because salinity interferes with the			Process Wastewater from Aggregate Mining, Sand Washing and Sand Offloading Facilities. Following is a description of the Marine Sand Washing operations and the Aggregate Mining Facilities described in that permit: "Sand dredged from various locations in San Francisco Bay is transported by barges and offloaded by conveyor belts to these facilities. Wet sand is stock piled at the facility on the ground or stored in settling ponds. The majority of the reclaimed sand is screened and sold for construction uses. Discharges from sand washing facilities normally consist of a combination of bay water that has drained from sand piles during drying and water used for sand washing. The discharged water has less TSS than the dredged water." The TSS requirement has been waived for these facilities. Aggregate Mining Facilities: "The San Francisco Regional Board general permit covers Aggregate Mining Facilities. These facilities are generally aggregate mining and processing facilities, which produce various grades of aggregates for construction." The monthly average TSS discharge limit included	

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	results. Accordingly, the TSS testing in Seaside Lagoon, King Harbor or the Pacific Ocean just outside Seaside Lagoon is also unreliable because Seaside Lagoon, King Harbor and the Pacific Ocean are saline environments. It behooves the Regional Board to further investigate this issue and reevaluate the requirement for TSS monitoring for saline environments such as the Seaside Lagoon and King Harbor.			in Order R2-2008-0011 is 30 mg/L which is more stringent than the TSS limit in the current Order (50 mg/L for monthly average) or the tentative permit. Within the comments the City referred to a report titled "*Technical Report, Evaluation of the Accuracy and Reliability of EPA Test Method 160.2 to Measure Total Suspended Solids (TSS) in Effluent from Marine Sand Processing Facilities*", prepared by Barry Keller (PhD, RG, CHG) in 2005 for Hanson Aggregates Marine Sand Processing Facilities (hereafter referred to as the Hanson Report). • The Report cited evaluates the precision and accuracy of the test method used on effluent from Hanson Aggregates sand washing facilities only. It did not evaluate the precision and accuracy of the test method with marine samples in general. There are statements throughout the report that clearly indicate this. In addition, the author refers to small particle size, in addition to salinity, as being a potential factor for variability. In the second paragraph on page 10, they loosely	

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				suggest that salinity may play a role; however, the study was not designed to isolate salinity as a variable. It would be inaccurate to apply the results of this study to marine samples in general. Furthermore, since physiochemical dissimilarities of sand washing effluent and Seaside Lagoon effluent may exist, the results of the Hanson study are not transferable to the Seaside Lagoon Facility. • As indicated in method 160.2, salinity is known to cause interference; however, extra filter washing can minimize the potential interference. The Hanson Report describes variability in filter washing techniques that occur among personnel and laboratories, which may cause high or low bias of results; however, this aspect of the method was not tested or evaluated and is therefore, theoretical. • When the San Francisco Regional Water Board waived the TSS monitoring in the General Permit for Aggregate Mining, Sand Washing, and Sand Offloading Facilities (R2-2008-011), it required the Facility to work towards developing an acceptable	

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				method for monitoring TSS in the Sand Washing effluents. The General Permit under Special Conditions, section C.10.d requires Hanson to conduct a special study to characterize TSS in the discharge using alternative methods and to develop filter rinsing protocols "*to remove dissolved solids to a level where Method SM2540 will yield TSS results reliable for use in permit compliance monitoring*". Regional Board staff does not believe that the Hanson study invalidates TSS monitoring of Seaside Lagoon effluent using Method 160.2.	
4	The proposed intake credits do not address the City's concerns. While the City appreciates the availability of intake water credits for pollutants that already exist in the intake water, unfortunately, the intake water credits do not sufficiently address the City's concerns regarding the feasibility of complying with the 2010 Order. The City's understanding of the intake credits is that if the influent water exceeds a given permit limitation, the City would only receive credit to the extent of the value of the influent. This means the City could not			The City was given intake credit to account for the concentration of TSS present in the intake water. The proposed study will provide information regarding the best sampling protocols, locations, and/or timing in order to have the best data set for determining the applicability of intake credits for TSS. In the interim, the Seaside Lagoon facility will be operating under a (Time Schedule Order) TSO that was issued on May 5, 2010. The TSO includes interim effluent limitations for TSS of 120 and 60 mg/L for daily maximum and monthly average limitations, respectively.	

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	contribute even one mg/L of a given pollutant to the effluent. This is especially alarming given that TSS testing in saline environments is highly variable and, thus, unreliable as a permit limit. In addition, the intake credit methodology does not allow for any variations in the Seaside Lagoon, King Harbor or the ocean. The intake credit should instead allow for credit for the City to discharge pollutants using an appropriate delta measurement (i.e., a measure of the proportional change between the influent water and the effluent) based on further study that accounts for water variability and testing method standard deviation. Seaside Lagoon is a unique body of water that requires practical solutions.			The definition of intake credit as it appears in Section 1.4.4of the SIP does not provide for the inclusion of a "delta measurement" in the compliance determination for the intake credit. If the contamination concentration in the intake water exceeds the water quality limitation, which is developed to protect the beneficial uses of the water body, there is no assimilative capacity of the water body for that contaminant. Consequently, it would be inappropriate to allow any discharger to discharge more of that contaminant to the water body. There is a potential for Seaside Lagoon to contribute to TSS loading from the trash and other pollutants disposed off by Lagoon users, as well as agitation of sediment from swimmers. A TSO was issued to the City that includes a requirement to develop and implement a work plan that provides the mechanism to come into compliance with the final TSS limits by September 13, 2013.	
5	The Regional Board mistakenly included the incorrect daily effluent limitations for TSS in		X	The TSS limits in the existing permit (Order No. R4-2005-0016) are correct and no mistake or	None necessary.

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	the 2005 (existing) permit The Regional Board mistakenly included an incorrect, higher daily effluent limitation for TSS in the 2005 Permit. The Fact Sheet in the 2005 Permit indicates that the Regional Board intended to set the daily effluent limitation for TSS at 150 mg/L. In the 2005 Fact Sheet, the Regional Board stated that TSS daily effluent limitation was "based on limitations specified in the City's existing permit." The existing permit's requirement for TSS was 150 mg/L, not 75 mg/L. Therefore, the City requests that the Regional Board correct the TSS effluent limitation from 75 mg/L to 150 mg/L, as set forth in the original permit. The City contends that the Regional Board made a technical mistake in the 2005 Permit by setting the TSS limitation at 75 mg/L, when the Fact Sheet indicates it should have been set at the then-existing level of 150 mg/L. It is precisely this type of typographical, technical mistake that permits the Board to modify the 2010 Order to correct the TSS effluent limitation back to 150 mg/L. More accurately, the City is not requesting a less stringent limitation for			typographical error was made. The existing permit and fact sheet are clear that the monthly average limitation is 50 mg/L and the daily maximum limitation is 75 mg/L. These existing limits were based on the TSS limits in the previous permit (Order No. 99-057) and best professional judgment (BPJ). The existing monthly average TSS limit was based on the previous permit and the daily maximum TSS value of 75 mg/L was based on best professional judgment (BPJ). Regional Board staff acknowledges that it inadvertently omitted the BPJ rationale for the existing daily maximum limit of 75 mg/L. Nevertheless, the existing daily maximum limit of 75 mg/L is correct and is specified in both the permit and the fact sheet. BPJ is a method used to develop technology-based NPDES permit conditions using all reasonably available and relevant data. Authorization for BPJ limits is found under Section 402 (a) (1) of the Clean Water Act and under 40 CFR 125.3. The Water Quality Control Plan Los Angeles Region includes narrative criteria for solid,	

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	TSS; it is merely asking for the Board to correct the typographical mistake in the 2005 Permit by setting the TSS effluent limitation back to the Regional Board's intended level of 150 *mg/L.*			suspended or settleable materials. The criteria read "Waters shall not contain suspended or settleable material in concentrations that cause nuisance or adversely affect beneficial uses." The summary also indicates that excessive deposition of sediments can destroy spawning habitat, blanket benthic (bottom dwelling) organisms, and abrade the gills of larval fish. The TSS daily maximum limitation of 75 mg/L included in the permit is based on the Gold Book and it is designed to protect benthic communities that live in and on the sediments on the floor of water bodies.	
6	The Regional Board is equitably estopped from imposing a TSS limitation of 75 mg/L Furthermore, because the 2005 Fact Sheet provided that the requirements for TSS were "based on limitations specified in the City's existing permit," the City relied, to its detriment, on the Regional Board's representation to this effect and believed itself to be complying with the 150 mg/L TSS limitation. Consequently, the Regional Board is now equitably estopped from imposing the 75 mg/L TSS limitation. Consequently, the		X	As noted in response to Comment 5 above, the TSS daily maximum limit of 75 mg/L is correct and was not the result of a mistake or typographical error. The 75 mg/L daily maximum limit is clearly specified in both the existing permit and fact sheet. Accordingly, the City's allegations concerning equitable estoppel are unfounded and inapplicable.	None necessary.

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	Regional Board is now equitably estopped from imposing the 75 mg/L TSS limitation. *See City of Long Beach v. Mansell*, 3 Cal. 3d 462,496-497 (1970) (California Supreme Court holding that the government may be bound by equitable estoppel): see also J.*H.McKnight Ranch, Inc. v. Franchise Tax* Board, 110 Cal.App. 4th 978, 991 (2003).				
	The 2010 tentative Order imposes requirements that are prohibitively expensive and burdensome The 2010 Order's requirements are prohibitively expensive and burdensome. This issue of the economic infeasibility of this 2010 Order is especially significant given the current economic recession, the effects of which have been extraordinarily difficult on local governmental agencies such as the City. In addition to the thousands of dollars spent on annual monitoring, the City has also spent substantial sums of money on Seaside Lagoon. For example, to comply with the 2007 TSO, the City spent approximately $158,000 on the Seaside Lagoon TSO Source Identification Report prepared by CDM		X	TSS and other specified limitations, including the monitoring requirements are for the protection of the beneficial uses of the receiving water (King Harbor). Discharge of pollutants that exceed the specified limitation in the proposed NPDES permit may cause or contribute to impairment of King Harbor and result in it's inclusion in the 303 (d) List. Three TSO's have been issued to the City (dating back to 2007) to provide the Discharger with time to come into full compliance with the final TSS limitations included in the permit. This permit also provides the requested time for the Discharges to design and conduct a study that will:	

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	(Exhibit D). Additionally, the City spent $30,000 on two separate conceptual studies regarding the feasibility of achieving zero discharge for Seaside Lagoon. The results of the studies indicated preliminary estimates of the costs to the City for a zero discharge facility in the approximate range of $8,000,000 to $12,000,000.			1. develop and implement an accelerated monitoring plan (weekly sampling, at a minimum) for measuring metals in the influent and effluent, 2. refine sampling protocols (grab versus composite) 3. refine data collection points, 4. refine data collection timing in order to have the best data set for determining reasonable potential, intake credits and other permit provisions, 5. examine sampling and laboratory protocols to insure adequate QACC. A focus on gathering more representative samples of the influent and effluent will provide some assurance that an accurate measure of the metal concentrations is occurring. The required Work Plan as specified in the Special Provisions Section of the MRP may include a component with composite sampling to average the detected metal concentrations over the entire discharge day.	