CITY OF SIGNAL HILL

2175 Cherry Avenue • Signal Hill, California 90755-3799

January 20, 2011

Jeanine Townsend
Clerk to the Board
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

Subject: **Comment Letter – Policy for Toxicity Assessment and Control**

Dear Ms. Townsend:

The City of Signal Hill appreciates the opportunity to comment upon the State's proposed draft Policy for Toxicity Assessment and Control. We recognize and appreciate the effort that State Board staff has put into the development of the proposed Draft Policy for Toxicity Assessment and Control (the Draft Policy). However, we have serious concerns about the Draft Policy and its application to stormwater and urban discharges.

The Draft Policy is primarily based on a new USEPA's Test of Significant Toxicity (TST) method. The Draft Policy establishes numeric effluent limitations for toxicity in MS4 discharge. The Draft Policy requires whole effluent toxicity (WET) test using chronic sub-lethal toxicity endpoints (i.e., non-survival endpoints such as reproduction and growth) to be included in each SWMP or MS4 permit.

Under the Draft Policy, a MS4 permittee will be required to conduct a reasonable potential analysis (RPA) using three different species in order to determine if a discharge has the reasonable potential to cause or contribute to toxicity in receiving waters. The Draft Policy, however, gives the regional boards the discretion to apply numeric effluent limitations for toxicity in these permits, and we believe that it is all but certain that numeric effluent limitations for toxicity will be included in MS4 permits if the Draft Policy is adopted in its current form.

If applied as numeric effluent limitations, cities will be required to conduct compliance monitoring consisting of four toxicity tests per year (i.e., two tests for wet weather conditions and two tests for dry weather conditions) using the most sensitive species identified via the RPA. If the city fails a single compliance monitoring test, the failure will be considered a violation of the permit and will trigger accelerated monitoring

requirements consisting of six toxicity tests within 12 weeks and a toxicity reduction evaluation (TRE).

Because the MS4 permit that currently regulates our discharges includes monitoring for toxicity, the Draft Policy requires use of the TST method and specifies that future permits would not include a compliance schedule. Rather, any numeric effluent limitations adopted pursuant to the Draft Policy would become immediately applicable upon adoption and placement in the MS4 permit.

The expansion of the WET testing to the purpose of MS4 permitting is invalid. The Draft Policy was primarily designed for wastewater dischargers, which have a long history of conducting WET tests and which have substantial datasets. However, the Draft Policy would expand the requirements for WET testing to stormwater and non-stormwater MS4 discharges, which differ significantly from wastewater discharges in several important respects. First, stormwater discharges are far more variable, both in volume/flow rate and in constituent concentrations, than are wastewater discharges. Second, the treatment processes that are commonly applied to wastewater discharges (e.g., secondary and tertiary treatment processes) are not applicable to stormwater discharges, both because of differences in chemical characteristics (e.g., stormwater discharges have far lower biological oxygen demand (BOD) and organic matter concentrations) and because of differences in flows/timing (i.e., wastewater flows are continuous and relatively steady, while stormwater discharges are intermittent and treatment processes are often dry for the majority of the year). Third, MS4 permittees have little control over the flows and pollutants that are transported into their system from other sources, including diffuse sources such as atmospheric deposition.

But most importantly, the WET methods proposed for use by the Draft Policy have not been tested or validated for application to urban and stormwater discharges. Neither USEPA nor the State Board has conducted any studies or data collection to describe WET testing methods or results in stormwater. Nor has either agency provided any evidence to support the expansion of the WET testing methods and numeric effluent limitations to the MS4 permitting context.

There is very little evidence to indicate that the WET results provide a meaningful measure of biological integrity in ephemeral or effluent-dependent ecosystems, which are common in California. USEPA stated in response to a Freedom-of-Information Act request that it has "no information" to demonstrate that whole effluent toxicity test endpoints are correlated with biological conditions in effluent-dominated streams, stormwater channels or agricultural drains.[1] We are unaware of any additional evidence or data obtained subsequent to this request; in fact, as far as we are aware, the

[1] USEPA. Response to Freedom of Information Act request (submitted 5/28/96 and resubmitted 7/24/96). Letter to Mark Pifher, attorney of record for Western Coalition of Arid States. September 11, 1996.

evidence contained in this letter constitutes the first example of the application of the TST method of the Draft Policy to stormwater discharges.

As a result, the Draft Policy provides no guidance for MS4 permittees and leaves many significant details to the Regional Board's discretion; almost no detail is provided regarding the monitoring requirements or the procedures to be followed in determining compliance with the Draft Policy and associated numeric effluent limitations. One of many concerns is the testing of stormwater samples; the chronic sublethal toxicity tests require a change of test water every day with new effluent samples for a minimum of seven days. It will be extremely difficult, if not impossible, for cities to collect a sufficient volume of stormwater samples everyday for the duration of the chronic testing, because stormwater discharges frequently last only several hours or a few days.

Further, the chemical composition of stormwater samples frequently varies significantly during the course of a storm flow event, such that one of the fundamental assumptions underlying the chronic toxicity test methods—i.e., that effluent characteristics and exposures in the environment are relatively constant—is violated. It is unknown how cities in southern California will be able to collect a sufficient volume of samples for the dry-weather testing twice per year required for the compliance monitoring, when there may be neither significant nor consistent flow.

This problem will be exacerbated if an effluent limitation is exceeded, as the Draft Policy would require collection and analysis of six (6) accelerated tests within the 12-week period following the initial exceedance; this would be all but impossible to do. The Draft Policy, in these circumstances, would also require that a toxicity reduction evaluation (TRE) be conducted following a test failure, even though it is highly unlikely that whatever agent or compound caused the test failure would be present in samples collected for follow-up testing.[2] The application of the Draft Policy to MS4 permittees is both scientifically unsound and will lead to significant increase in enforcement actions and related appeals.

Financial burden on small cities will be tremendous. Our estimates show that the cost of WET testing for small cities will be tremendous. Small cities, like Signal Hill, may be regulated by numeric effluent limitations without the benefit of a principal permittee or coordinated monitoring program. Signal Hill has a population of approximately 11,000 residents and has a $17 million General Fund budget. Costs for NPDES and TMDL Program compliance continue to increase for our community, including participation in the Los Angeles River Trash TMDL, the Los Angeles River Metals TMDL and the Los Angeles River Bacteria TMDL. We also drain into the Los Cerritos Channel and are regulated under an USEPA adopted Metals TMDL for this

[2] As noted below, the rate of false violations is unacceptably high with the proposed Draft Policy. However, the Draft Policy provides no method for distinguishing between false violations (i.e., a finding of toxicity in a sample that is, in reality, not toxic) and actual violations (i.e., a finding of toxicity in sample that is actually toxic).

waterbody. The costs for water quality monitoring, participation in scientific studies, implementation of NPDES Permit requirements and the TMDL implementation plans now exceed $500,000 annually for our small community. Additional unproven toxicity testing will only add to our financial burden.

A single violation will trigger the accelerated monitoring and TRE requirements of the Draft Policy. TREs alone can be extremely expensive, and the costs of TRE studies typically exceed by an order of magnitude or more the cost estimates contained in the Draft Staff Report that accompanies the Draft Policy. For instance, our consultants indicate that the City of San Bernardino spent more than $100,000 on accelerated monitoring and preliminary Toxic Identification Evaluations (TIEs) over the last 10 years. In every instance, it appears that the initial failure of the chronic sub-lethal toxicity test using *Ceriodaphnia dubia* (*C. dubia*; freshwater flea) for reproduction was due to routine (annual) culture crashes at the analytical laboratory. Similarly, the Inland Empire Utilities Agency (Chino, CA) spent more than $300,000 on a TIE/TRE in 1997-98 to address sporadic failures of the chronic sub-lethal toxicity test using *C. dubia* for reproduction.

The Water Board's staff's cost and environmental analysis grossly underestimate the economic and environmental impacts of the Draft Policy. The economic analyses contained in the Staff Report for the Draft Policy underestimate the likely monitoring costs, but—more importantly—both the economic and environmental impact analyses fail to consider the reasonably foreseeable costs of compliance. A number of treatment processes can be considered "reasonably foreseeable," ranging from construction of treatment facilities, use of activated carbon to reduce concentrations of organic compounds, or application of reverse osmosis (RO) to reduced hardness and alkalinity and concentrations of total dissolved solids (TDS), which can contribute to toxicity test failures. All of these treatment methods are expensive, consume significant amounts of energy, generate greenhouse gases, have significant construction impacts, and generate additional waste streams that will require disposal.

Small cities like Signal Hill are already under enormous financial pressure and have been cutting staff, imposing furloughs and pay cuts, and otherwise reducing their budgets. We anticipate that cuts to essential services will be required in order to afford to comply with the proposed Draft Policy.

The use of USEPA's TST method and its implementation as numeric effluent limitations are invalid.

- The TST method inappropriately reverses the presumption of innocence: The TST method was released as guidance in June, 2010 by USEPA (i.e., NPDES TST Implementation Document) and has not been through the public review and comment process. The TST method assumes that an effluent is toxic unless testing is able to demonstrate that the effluent is in fact not toxic—a reversal of

the "presumption of innocence," and a significant departure from traditional practice.

- False violation error rates are likely to be unacceptably high using the TST method: To evaluate the TST method, our consultants applied it to USEPA WET blank data, which by definition are non-toxic. These evaluations showed that the TST method falsely indicated toxicity in these non-toxic samples at a rate of 15 % for chronic toxicity tests using *C. dubia* for reproduction (see Table 1 in Attachment). This rate of finding false violations is unacceptably high, and would lead to findings of permit violations and accelerated testing/TRE requirements even when no toxicity is present in effluent samples. Our consultants also applied the TST method to other datasets and found a significantly higher rate of toxicity than with methods currently in use to interpret the WET results (e.g., NOEC, IC25). These toxicity findings are most likely due to inherent variability in the toxicity test methods, to inter-laboratory differences, to variability caused by sample matrices (e.g., hardness, pH, TDS of receiving water), and variability inherent in the hypothesis testing in the TST method —***not*** to actual toxicity in the samples themselves.

- We also found that rates of toxicity for *C. dubia* in "real world" stormwater datasets are similar to those for USEPA blank data: Table 2 in the Attachment to this letter presents the summary of an evaluation of the application of the TST method (*C. dubia*, reproduction endpoint) to stormwater samples collected by the County of Los Angeles. This dataset included 123 receiving water samples collected from 2005 through 2010. As shown in Table 2, the TST method found toxicity in 12% of samples, and the methods of the Draft Policy would have led to findings of reasonable potential in 15% of the samples in this dataset. These rates of toxicity are comparable to the rates of toxicity in the USEPA blank dataset (see Table 1 in Attachment) and are higher than the rates of toxicity found by the NOEC and IC25 methods (4% and 7%, respectively) when applied to the same dataset. These data indicate that it is likely that the rate of apparent toxicity of the TST method as applied to "real world" samples will be similar to the rate of apparent toxicity in non-toxic blank samples, and higher than the rates of toxicity in the NOEC and IC25 methods approved by USEPA.

These data highlight the need to evaluate the TST method for various species and toxicity endpoints both in ambient samples, particularly stormwater samples, and in non-toxic blank samples. Due to the scarcity of data for other species and endpoints in ambient samples, evaluating the TST method will require the collection of additional data for conditions ranging from stormwater to ephemeral/effluent-dominant dry weather conditions, species, and endpoints, and evaluating the relationship between the sublethal methods and environmental effects. It is premature to apply the TST method before the evaluation of additional data and before substantial additional evaluation of the method as applied to urban runoff and stormwater.

The analyses discussed above clearly indicate that the use of the TST method will lead to unacceptably high numbers of false violations (i.e., determining that an effluent sample is toxic when the effluent is, in truth, not toxic). This, in turn, will lead to the unnecessary expenditure of significant State and Regional Water Board and MS4 dischargers' resources to respond to non-toxic, false indications of toxicity, including unnecessary and unjustified 303(d) listings and development of TMDLs for non-existent problems.

The reasonable potential analysis (RPA) of the Draft Policy will result in unnecessary application of effluent limitations. The Draft Policy results in a finding of reasonable potential (i.e., the determination that a discharge has the potential to cause or contribute to an excursion above a water quality standard, and thus requires an effluent limitation) under either of two conditions: (1) if an effluent sample fails the TST method or (2) if the percent effect (i.e., the difference between responses of the effluent sample and the control) is greater than 10%. Because of the variability inherent in toxicity testing, particularly for sublethal, chronic toxicity endpoints, the second threshold is frequently exceeded. Our analyses demonstrate that the false failure rate of the RPA is 25% for chronic toxicity tests using *C. dubia* for reproduction, using USEPA WET blank data (see Table 1 in the Attachment). This false failure rate is far too high and will result in the unnecessary application of numeric effluent limitations.

The proposed Draft Policy should be adopted through a formal rule-making process. The proposed Draft Policy must be adopted through a formal rule-making process, and the State Board must comply with the requirements in California Water Code Sections 13241 and 13242. This is particularly important since the TST method upon which the Draft Policy is based has not been adopted through a public process.

We strongly recommend that the State Board not adopt the Draft Policy for the purpose of MS4 permitting, because neither the State Board, nor USEPA have conducted the studies and data collection that we believe would be essential to support the application of the Draft Policy (and TST methods) to discharges regulated by MS4 permits. We believe that a single test failure using a single surrogate species should never be construed to constitute a permit violation.

We look forward to working with the State Water Board and its staff on future revisions to the Draft Policy. Please contact me at kfarfsing@cityofsignalhill.org if you have any questions regarding the information provided in this letter.

Sincerely,

Kenneth C. Farfsing
City Manager

cc: Mayor & Council
City Attorney
Deputy City Manager
Public Works Director

Attachment

ATTACHMENT

Table 1. Summaries of *Ceriodaphnia dubia* reproduction "blank" data from the USEPA Inter-Laboratory Validation Study. Samples that were determined invalid by USEPA were not included.

Row #	Sample ID	Analysis Using the Proposed New TST Method					Current 40 CFR 136 Method	
		Mean Control Response	Mean Sample Response	% Effect	TST Results	Discharger has Reasonable Potential (RP) according to Draft Policy for Toxicity Assessment and Control	NOEC	IC 25
1	9330	25.4	25.0	1.5	Non-Toxic	No	100	>100
2	9332	16.6	16.3	1.8	Non-Toxic	No	100	>100
3	9337	20.1	19.4	3.5	Non-Toxic	No	100	>100
4	9338	24.2	21.3	12.0	Non-Toxic	**Yes**	100	>100
5	9340	15.3	19.8	-29.4	Non-Toxic	No	100	>100
6	9341	23.5	21.3	9.4	Non-Toxic	No	100	>100
7	9344	11.1	17.0	-53.2	Non-Toxic	No	100	>100
8	9349	30.8	30.3	1.6	Non-Toxic	No	100	>100
9	9350	29.5	22.9	22.4	**Toxic**	**Yes**	100	>100
10	9356	24.1	22.4	7.1	Non-Toxic	No	100	>100
11	9367	22.2	16.7	24.8	Non-Toxic	**Yes**	100	>100
12	9371	19.9	21.3	-7.0	Non-Toxic	No	100	>100
13	9376	20.4	17.8	12.7	Non-Toxic	**Yes**	100	>100
14	9379	24.9	26.8	-7.6	Non-Toxic	No	100	>100
15	9381	26.5	25.6	3.4	Non-Toxic	No	100	>100
16	9382	26.1	25.7	1.5	Non-Toxic	No	100	>100
17	9384	15.5	18.7	-20.6	Non-Toxic	No	100	>100
18	9402	16.0	16.2	-1.3	Non-Toxic	No	100	>100
19	9409	22.2	26.3	-18.6	Non-Toxic	No	100	>100
20	9410	24.8	22.8	8.1	Non-Toxic	No	100	>100
21	9429	31.0	31.1	-0.3	Non-Toxic	No	100	>100
22	9432	17.0	18.2	-7.1	Non-Toxic	No	100	>100
23	9436	28.1	31.8	-13.2	Non-Toxic	No	100	>100
24	9439	18.9	12.1	36.0	**Toxic**	**Yes**	100	>100
25	9445	23.6	22.4	5.1	Non-Toxic	No	100	>100
26	9446	22.2	18.3	17.6	**Toxic**	**Yes**	100	>100
27	9450	19.4	4.1	78.9	**Toxic**	**Yes**	25	15.9
Summary Statistics	N	27	27	27			27	27
# of Blank Samples Incorrectly Declared Toxic or Triggering Reasonable Potential					**4**	**7**	**1**	**1**
Error Rate for Non-Toxic Blank Samples					**14.8**	**25.9**	**3.7**	**3.7**

Table 2. Los Angeles County Stormwater WET data of *Ceriodaphnia dubia* Chronic reproduction toxicity from 2005-2010. Total number of samples = 123.

Row #	Sample ID	Analysis Using the Proposed New TST Method					Current 40 CFR 136 Method	
		Mean Control Response	Mean Sample Response	% Effect	TST Results	Discharger has Reasonable Potential (RP) according to Draft Policy for Toxicity Assessment and Control	NOEC	IC25
1	PW9528-08	16.6	22.7	-37	Non-Toxic	No	100	>100
2	PW9527-08	16.6	20.5	-23	Non-Toxic	No	100	>100
3	PW9526-08	16.3	25.5	-56	Non-Toxic	No	100	>100
4	PW9525-08	15.8	7.8	51	**Toxic**	Yes	**50**	**72.15**
5	PW9524-08	16.3	22	-35	Non-Toxic	No	100	>100
6	PW9523-08	16.3	11.7	28	**Toxic**	Yes	100	**30.87**
7	PW4810-06	14	31.8	-127	Non-Toxic	No	100	>100
8	PW4809-06	16.7	15.6	7	Non-Toxic	No	100	>100
9	PW4808-06	19.3	35.2	-82	Non-Toxic	No	100	>100
10	PW4807-06	16.9	37.5	-122	Non-Toxic	No	100	>100
11	PW4806-06	17.9	33.8	-89	Non-Toxic	No	100	>100
12	PW4805-06	18	12.2	32	**Toxic**	Yes	100	**32.3**
13	PW4804-06	17	17.5	-3	Non-Toxic	No	100	>100
14	PW14212-05	17.1	21	-23	Non-Toxic	No	100	>100
15	PW14211-05	17.1	6.6	61	**Toxic**	Yes	**56**	**73.3**
16	PW14210-05	19	22.9	-21	Non-Toxic	No	100	>100
17	PW14209-05	19.2	24.8	-29	Non-Toxic	No	100	>100
18	PW14208-05	24.8	28.8	-16	Non-Toxic	No	100	>100
19	PW14207-05	17.1	23.6	-38	Non-Toxic	No	100	>100
20	PW14206-05	17.1	25.4	-49	Non-Toxic	No	100	>100
21	PW13346-07	19.2	23.7	-23	Non-Toxic	No	100	>100
22	PW13335-07	18.2	32.9	-81	Non-Toxic	No	100	>100
23	PW13334-07	23.9	23.5	2	Non-Toxic	No	100	>100
24	PW13333-07	22.6	17.9	21	**Toxic**	Yes	100	>100
25	PW13332-07	20.1	25.4	-26	Non-Toxic	No	100	>100
26	PW13331-07	18.7	29.9	-60	Non-Toxic	No	100	>100
27	PW13324-07	18.9	33.7	-78	Non-Toxic	No	100	>100
28	PW13196-07	15.1	15.3	-1	Non-Toxic	No	100	>100
29	PW13060-07	15.3	17.9	-17	Non-Toxic	No	100	>100
30	PW13059-07	15.3	20.3	-33	Non-Toxic	No	100	>100
31	PW13058-07	22.1	20	10	Non-Toxic	No	100	>100
32	PW13053-07	19.6	18.7	5	Non-Toxic	No	100	>100
33	PW13052-07	19.6	22.7	-16	Non-Toxic	No	100	>100

34	PW12725-06	18.9	24.2	-28	Non-Toxic	No	100	>100
35	PW12469-06	22.3	14.3	36	**Toxic**	Yes	100	**6.8**
36	PW12468-06	15.9	16.4	-3	Non-Toxic	No	100	>100
37	PW12467-06	15.9	10.9	31	**Toxic**	Yes	100	**39.88**
38	PW12466-06	15.9	15.2	4	Non-Toxic	No	100	>100
39	PW12465-06	19.5	26.4	-35	Non-Toxic	No	100	>100
40	PW12464-06	19.5	25.9	-33	Non-Toxic	No	100	>100
41	PW12310-06	17.4	19.8	-14	Non-Toxic	No	100	>100
42	PW10715-07	17	25.6	-51	Non-Toxic	No	100	>100
43	PW10714-07	17	18.8	-11	Non-Toxic	No	100	>100
44	PW10713-07	17	24.1	-42	Non-Toxic	No	100	>100
45	PW10712-07	17	13.1	23	**Toxic**	Yes	100	>100
46	PW10711-07	17.1	25.7	-50	Non-Toxic	No	100	>100
47	PW10710-07	22	3.3	85	**Toxic**	Yes	**25**	**23.38**
48	PW10709-07	18.3	22.4	-22	Non-Toxic	No	100	>100
49	PW1018-06	17.8	40.5	-128	Non-Toxic	No	100	>100
50	PW1017-06	18.8	32.6	-73	Non-Toxic	No	100	>100
51	PW1016-06	17.3	23.8	-38	Non-Toxic	No	100	>100
52	PW1015-06	26.2	37.1	-42	Non-Toxic	No	100	>100
53	PW1014-06	31.3	34.8	-11	Non-Toxic	No	100	>100
54	PW1-06	38.2	32.6	15	Non-Toxic	Yes	100	>100
55	PW-6749-07	24.1	27.1	-12	Non-Toxic	No	100	>100
56	PW-6748-07	25.6	19.5	24	**Toxic**	Yes	100	>100
57	PW-6640-07	17.6	18.3	-4	Non-Toxic	No	100	>100
58	PW-6639-07	15.8	25.2	-59	Non-Toxic	No	100	>100
59	PW-6638-07	15.8	20.6	-30	Non-Toxic	No	100	>100
60	PW-4450-07	16.9	16.4	3	Non-Toxic	No	100	>100
61	PW-3797-07	21.1	22.3	-6	Non-Toxic	No	100	>100
62	PW-3796-07	21.5	22.5	-5	Non-Toxic	No	100	>100
63	PW-3553-07	18.7	23.1	-24	Non-Toxic	No	100	>100
64	PW-3418-07	23.5	27.5	-17	Non-Toxic	No	100	>100
65	PW-3417-07	27.4	27.4	0	Non-Toxic	No	100	>100
66	PW-3416-07	22.2	27.4	-23	Non-Toxic	No	100	>100
67	PW-3360-07	17.9	20	-12	Non-Toxic	No	100	>100
68	PW-2077-07	20.7	16.2	22	**Toxic**	Yes	100	>100
69	PW-2076-07	20.7	26.6	-29	Non-Toxic	No	100	>100
70	PW-2073-07	20.7	26.5	-28	Non-Toxic	No	100	>100
71	PW-2063-07	18.4	30.3	-65	Non-Toxic	No	100	>100
72	PW-1808-07	15.8	19	-20	Non-Toxic	No	100	>100
73	PW-17384-05	35.2	38.2	-9	Non-Toxic	No	100	>100
74	PW-17383-05	31.4	37.1	-18	Non-Toxic	No	100	>100
75	PW-17382-05	26.7	38.1	-43	Non-Toxic	No	100	>100

76	PW-17381-05	34.3	35.9	-5	Non-Toxic	No	100	>100
77	PW-15997-05	17.4	21.6	-24	Non-Toxic	No	100	>100
78	PW-15996-05	17.7	6.6	63	**Toxic**	Yes	**50**	**67.7**
79	PW-15995-05	16.5	16.2	2	Non-Toxic	No	100	>100
80	PW-15994-05	20	16.9	16	**Toxic**	Yes	100	>100
81	PW-15993-05	15.2	14.1	7	Non-Toxic	No	100	>100
82	PW-15992-05	12.6	11.9	6	Non-Toxic	No	100	>100
83	PW-15991-05	15.5	4.1	74	**Toxic**	Yes	**50**	**60.6**
84	PW-1529-07	15.2	25.9	-70	Non-Toxic	No	100	>100
85	PW-1527-07	18.6	38.5	-107	Non-Toxic	No	100	>100
86	PW-1526-07	22.5	32.8	-46	Non-Toxic	No	100	>100
87	PW-15206-05	18.5	36.2	-96	Non-Toxic	No	100	>100
88	PW-15205-05	23.4	38.1	-63	Non-Toxic	No	100	>100
89	PW-13982-06	17.4	15.3	12	Non-Toxic	Yes	100	>100
90	PW-13978-06	15.3	17.3	-13	Non-Toxic	No	100	>100
91	PW-13977-06	15	22.4	-49	Non-Toxic	No	100	>100
92	PW-13976-06	15	13.7	9	Non-Toxic	No	100	>100
93	PW 302-09	20.4	24.6	-21	Non-Toxic	No	100	>100
94	PW 301-09	18.9	16.8	11	**Toxic**	Yes	100	>100
95	PW 234-09	17.7	19.7	-11	Non-Toxic	No	100	>100
96	E1000628003	27.1	31.2	-15	Non-Toxic	No	100	>100
97	E1000628002	26.9	35.4	-32	Non-Toxic	No	100	>100
98	E1000628001	23.4	25.9	-11	Non-Toxic	No	100	>100
99	E1000626001	20.8	26.1	-25	Non-Toxic	No	100	>100
100	E1000616002	20.7	24.7	-19	Non-Toxic	No	100	>100
101	E1000616001	23.4	25.4	-9	Non-Toxic	No	100	>100
102	E1000604001	23.9	35.6	-49	Non-Toxic	No	100	>100
103	E1000142001	25.2	21.7	14	Non-Toxic	Yes	100	>100
104	E1000141001	18.8	23.9	-27	Non-Toxic	No	100	>100
105	E1000117001	17.9	25.6	-43	Non-Toxic	No	100	>100
106	E0900760004	28.9	32.4	-12	Non-Toxic	No	100	>100
107	E0900760003	28.9	30.4	-5	Non-Toxic	No	100	>100
108	E0900760002	28.9	34.9	-21	Non-Toxic	No	100	>100
109	E0900760001	28.9	28.1	3	Non-Toxic	No	100	>100
110	E0900758003	28.9	30.7	-6	Non-Toxic	No	100	>100
111	E0900758002	28.9	28.4	2	Non-Toxic	No	100	>100
112	E0900758001	28.8	26	10	Non-Toxic	No	100	>100
113	E0900419003	19.3	19.5	-1	Non-Toxic	No	100	>100
114	E0900419002	15.5	28.7	-85	Non-Toxic	No	100	>100
115	E0900419001	21.6	24.9	-15	Non-Toxic	No	100	>100
116	E0900418003	22.2	28.8	-30	Non-Toxic	No	100	>100
117	E0900418002	19.9	27.5	-38	Non-Toxic	No	100	>100

118	E0900418001	25	25.6	-2	Non-Toxic	No	100	>100
119	E0900417001	20.7	34.5	-67	Non-Toxic	No	100	>100
120	2677	14.3	14.7	-3	Non-Toxic	No	100	>100
121	2675	18	16.5	8	Non-Toxic	No	100	>100
122	2673	18	18.1	-1	Non-Toxic	No	100	>100
123	2671	26.3	26.5	-1	Non-Toxic	No	100	>100
Summary Statistics	N	123	123	123				
	Min	12.6	3.3	-127.5				
	Max	38.2	40.5	85.0				
	Median	18.8	24.2	-16.1				
	Mean	20.3	24.0	-19.5				
	# of Samples Declared Toxic				**15**	**18**	**5**	**9**
	Rate for Toxic Samples				**12**	**15**	**4**	**7**