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Edmund G. Brown Jr.
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March 21, 2014

Ms. Margaret Rosegay
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San Francisco, California 94105-2228

RE: COMMENTS RECEIVED BY DTSC ON THE DRAFT AUTO SHREDDER RESIDUE TREATABILITY STUDY - SEPTEMBER 26, 2013

Dear Ms. Rosegay:

Thank you for the submission of the California Chapter Institute of Scrap Recycling Industries' (ISRI), *Draft Auto Shredder Residue Treatability Study Workplan* (Draft Workplan) dated September 26, 2013. The Department of Toxic Substances Control (DTSC) appreciates ISRI's and your continued cooperation and assistance in gathering the information DTSC needs to re-evaluate its past decisions regarding Metal Shredder Residues. DTSC believes that the implementation of a well-designed treatability study will provide a significant set of the data that DTSC has identified as essential in its re-evaluation.

As you are aware, DTSC hosted workshops in both Northern and Southern California, with one set of workshops exclusively with government regulatory agencies and another set that also included interested members of the public and other stakeholders. The participants in these workshops provided feedback and comments on the Draft Workplan. A compilation of these comments is provided for your reference and consideration in the Enclosure.

Although DTSC suggests that you consider the comments offered in the workshops and incorporate changes where appropriate, at a minimum, prior to its implementation, the final work plan must incorporate the following specific changes and considerations:

1. DTSC staff must be present during all sample collection events to ensure the quality and usability of the data.
2. Replicates or splits of all samples collected (including split samples of each discreet half-hour sample collected, as well as splits of each composite sample prepared) must be made available to DTSC during sample collection events to allow DTSC the opportunity to independently verify and validate the data being developed.
3. The amount of sample collected during each sample collection event must be sufficient to not only provide the needed replicate samples or split samples identified above, but also in sufficient quantity so as to allow all required analytical tests to be performed on each sample.

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4. The analytical testing performed on the collected samples must yield, at a minimum, the quantification of: the concentration of all contaminants identified section 261.24, title 40, Code of Federal Regulations, including mercury using the federal Toxicity Characteristic Leaching Procedure (TCLP); the soluble and total concentrations of all inorganic and organic contaminants identified subdivisions (a)(2)(A) and (a)(2)(B) in section 66261.24, title 22, California Code of Regulations using the identified test methods; acute aquatic toxicity as specified in subdivision (a)(6) in section 66261.24 of the California Code of Regulations using the identified test method; and any other characteristic of hazardous waste anticipated to be exhibited by the waste, such as ignitability (see, Cal Code Regs., sec. 66261.21), corrosivity (see, Cal Code Regs., sec. 66261.22), reactivity (see, Cal Code Regs., sec. 66261.23), or any other aspect of toxicity (see, Cal Code Regs., sec. 66261.24).
5. A knowledgeable, reputable, independent third-party contractor with demonstrated ability and experience in conducting Treatability Study for the federal, state, or private sector should conduct the Treatability Study on behalf of ISRI.
6. A quality assurance/quality control plan for the sampling and analytical efforts under the study must be prepared in accordance with the US EPA requirements found in EPA QA/R-5, EPA Requirements for Quality Assurance Project Plans, EPA/240/B-01/003, March 2001.

As you know, DTSC has established a goal of developing a set of recommendations to present to the DTSC Director and Executive Staff by November 2014. We anticipate these recommendations to be largely based on the information that is gathered through the implementation of the treatability study. In order to meet this goal, we request that you provide a final work plan, as described above, within 30 days. We recognize that the timelines originally presented in the Draft Plan anticipated its implementation occurring sooner than is now possible. In addition to the above changes, as part of the final plan we ask that you also submit a revised project timeline so that DTSC can better understand the timing considerations and any revisions to the anticipated completion date.

I look forward to sharing more details on DTSC's re-evaluation as they become available and to working with you, your clients, and other stakeholders as we move forward on this critical and time sensitive evaluation. If you have any additional questions, please feel free to contact Mr. Tyrone Smith of my staff at (916) 445-5658 or Tyrone.Smith@dtsc.ca.gov.

Sincerely,

Rick Brausch, Chief
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Enclosure

cc: See next page.

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COMMENTS RECEIVED BY DTSC'S ON THE
DRAFT AUTO SHREDDER RESIDUE TREATABILITY STUDY
(September 26, 2013)

ENCLOSURE: Comments received by DTSC from the workshops with government agencies and public stakeholders. *(All comments are provided verbatim.)*

1. Bay Area stormwater programs are very concerned that DTSC's evaluation should consider the water quality impacts of MSR that are triggered well below the narrow definition of "hazardous waste" which is only based on direct human exposure.

2. Per the federal Clean Water Act and CA Water Code, SFBRWQCB has established a TMDL clean-up plan for PCBs in SF Bay, based on food web bioaccumulation that makes sport fish unsafe for consumption. The TMDL set a sediment target of 2.5 ug/kg (PPB) which is four orders of magnitude below the 50 mg/kg (PPM) hazardous waste threshold for PCBs.

3. TMDL requires municipal stormwater managers to reduce PCB discharges by 90%, which will entail an array of costly new or enhanced management measures currently being piloted in a few locations; these include identifying ongoing sources from public and privately owned facilities that are dispersed but generally concentrated in industrial areas.

4. Stormwater programs and RWQCB staff have worked to develop guidelines for referring such facilities to DTSC for clean-up and for chemical analytical methods that will provide appropriate PCB detection levels for soil and sediment at these facilities (the recommended detection level for sum of PCB congeners is 1 PPM or less).

5. PCBs at the concentrations for TMDL compliance have been found in MSR, and also in and around MSR-generating facilities. MSR may also contain other Pollutants of Concern that have been identified as water quality problems in the SF Bay region, such as flame retardants, although dischargers haven't been assigned specific targets for load reduction for those. This is an opportunity for Cal-EPA agencies to evaluate the MSR-generating process with respect to contaminants other than the list on which the original exemption was based, and identify ways to address problems at the source.

6. DTSC should work with the Regional Water Quality Control Board to incorporate water quality considerations in its fact-finding process and develop policies and regulations consistent with present-day regulatory priorities for both agencies.

7. Section 1.1, Description of Auto Shredder Residue. This section contains the following statement; "In contrast, ASR consists primarily of foam, fabric, plastics, rubber, tires, and glass, wood, and debris materials, along with minute amounts of remaining metallic material that is too small to be economically separated and removed from the aggregate". The use of the term "minute" is misleading as DTSC sampling data indicates that this material frequently fails California Hazardous Waste Criteria.

8. Section 1.1, Description of Auto Shredder Residue. This section contains the following statement; "Other state toxicity characteristics (e.g., aquatic toxicity) are not exhibited by treated or untreated ASR". How often, and under what conditions has this statement been validated?

9. Facility track-in and track-out. This has a potential impact to surface water, groundwater, and community air concerns surrounding the shredder/recycling facilities.

10. Air Emissions. Fugitive emissions (pH, silica(tes), heavy metals, etc. may present health concerns to:
    - Workers at the shredder/recycling facilities
    - Non-Occupational receptors living in proximity to shredder/recycling facilities
    - Transporter personnel
    - Workers at landfills
    - Non-Occupational receptors living in proximity to landfills
    - Consequently, it would be prudent for DTSC to work closely with ARB and local air districts to quantify potential fugitive emissions to non-occupational receptors living in close proximity to shredder/recycling facilities and landfills.

    Furthermore, it would be prudent to also work with Cal-OSHA to determine the nature of occupational exposure to relevant "Chemicals of Concern" (see worker-classifications above).

11. A review of the historical documentation on the DTSC MSR website portal reveals a couple of issues. First, the discussion of disposal in other than a Class I landfill, involved "disposal", not use as Alternative Daily Cover. There is nothing in the record to show that its use as ADC was ever considered by DHS when it was classified as non-hazardous by the f letters. Secondly, by using it as ADC, you are maximizing the potential for dispersal by the wind, especially after it's been dried by the sun and run over numerous times by heavy earth moving equipment. A study of the potential release of fugitive emissions to the air should be conducted at the working faces, and around the perimeters of the landfills, in particular on windy days, such as when the Santa Ana winds are blowing.

12. One occupational exposure study at a landfill involved heavy equipment operators working inside an air conditioned and air filtered cab, and not the landfill spotters, who direct traffic near the working face and tell incoming trucks where to dump their loads of trash, as well as treated MSR. Occupational exposure studies should be conducted on landfill spotters.

13. DTSC should consider working closely with DPH Rad Health in reviewing ionizing radiation screening protocols at these sites. Attention should be paid to how such concerns are quantified, sensitivity of screening protocols, operational parameters, and maintenance schedules and whether screening for potential ionizing radiation is performed beyond the entry/egress points at each Site.

14. The issue of compressed gas cylinders needs to be addressed. These items not only present a quandary from a waste classification storage perspective, but perhaps more importantly, may present significant life safety issues to individuals who work in close proximity to them.

15. In conducting an evaluation that is scientifically sound it is important to consider the potential harm to the environment through all media. This evaluation must include air pollution impacts at the shredder facilities and at the landfills where the wastes are disposed. This is so important. Lead fallout from the shredders was found during the 2008 investigation. Particulate emissions must be measured at both the shredders and the landfills. This to protect site workers and people living and working around the facilities.

16. It is critical that all the waste streams that may be present in MSR's be evaluated. The following is a list of potential wastes that may be in MSR's. The testing cannot be limited to metals.

    - Bromine: Associated with the use of brominated flame retardants, BFRs are added to plastics in order to impart fire resistance, but they are released into the environment over the life of the vehicle. Heat and UV-ray exposure in cars can accelerate the breakdown of these chemicals and possibly increase their toxicity. Some BFRs have been associated with thyroid problems, learning and memory impairment, decreased fertility, behavioral changes, and other health problems.

    - Chlorine: Associated with the use of polyvinyl chloride, PVC is a widely used type of plastic that is of concern to the environment and public health during all phases of its life cycle. PVC contains chemicals called phthalates, some of which have been associated with decreased fertility, pre-term deliveries, and damage to the liver, testes, thyroid, ovaries, kidneys, and blood. There is also evidence that phthalates can pass from mothers to babies through the placenta and through breast milk.

    - Lead: Lead is sometimes used as an additive in automotive plastics. Exposure can lead to a number of potential health effects including brain damage, and problems with the kidneys, blood, nerves, and reproductive system. It can also cause learning and behavioral problems.

    - Other chemicals that may be present in MSR's include antimony, arsenic, chromium, cobalt, copper, mercury, nickel, and tin. The substances in this category are allergens, carcinogens, or cause other adverse health impacts depending on the concentrations and exposure levels.

17. Why is ASR noncompliance with total metals limits being ignored when studies to show that exposure to hazardous waste totals of total metals from the management and use of ASR does not cause harm to auto shredder employees, landfill employees, ASR truck drivers, people living near ASR facilities, and the environment?

18. In 2008 inspections were conducted in response to a series of citizen complaints filed with DTSC. The inspections resulted in concerns regarding adequate treatment of the shredder wastes before they were placed in landfills. In August 2008 a warrant was served at the S & A recycling facility in San Pedro. Numerous violations of environmental laws were cited as a result of this investigation. A September 2011 DTSC press release announced a joint settlement with S & A Recycling by the Los Angeles County District Attorney's Office and DTSC resolving violations of hazardous

waste and air pollution laws. The S & A Shredder equipment in San Pedro was enclosed as a requirement of this settlement. The company is required to also have operating air pollution control equipment. The improvements made to this facility and other auto shredders as a result of this enforcement case provide a clear demonstration of the value of inspections. The auto shredder facilities should be routinely inspected by DTSC, the Air Pollution Control Districts and the Regional Water Control Boards. Any modifications of DTSC Policies or regulations should not limit environmental inspection authorities.

19. The benefit of the decisions made as a result of this effort will be minimized if the new regulatory or policy decisions are not enforceable. Segregation of waste streams and the recycling of materials presently being shredded is one option to be seriously considered. Setting goals for reducing MSRs is important. Waste reduction goals for MSR should be established by DTSC. Auto Shredders should be required to comply with these goals.

20. Surface soil at the shredders must be sampled. If contamination is found it must be mitigated. Storm water runoff at both the shredders and the landfills must be considered. It is relevant to note that USEPA, Region 9 inspectors conducted an inspection at the Sims Metal Management's Port of Redwood City facility in August 2011. The purpose of the inspection was to determine the company's compliance with their Storm Water Permit. During the inspection evidence of discharges into Redwood Creek were observed. In August 2011 samples of debris and soils were taken. Analysis of the samples showed elevated levels of PCP's, mercury, lead, copper and zinc.

21. There is nothing in the record to show that a Health Risk Assessment (HRA) was ever conducted on the use of treated ASR as ADC. Subsequent approval for use as ADC by Cal-Recycle and the Water Boards appears to be based strictly on the fact that DHS classified it as "non-hazardous." Having a complete set of analysis for all regulated metals (as well as testing for other constituents, i.e., PDBE's and phthalates) will be important should the Department require that a HRA be performed on using treated MSR as ADC.

22. Identifying all of the contaminants in MSR is of critical importance. All the fluids used in automobiles and appliances must be included in the testing. Previous assumptions regarding what contaminants are in MSR must be reevaluated. The goal of identifying options and alternatives that are viable, legally defensible and enforceable is also important.

23. We live in a throw away culture. When the products we use wear out, are out of date or just don't make us happy anymore we throw them out and get new ones. Products are no longer repaired. As a result our generation is creating large accumulations of "waste" that future generations will inherit. This is wrong. I strongly believe that product manufacturers, retailers and the consumers that use these products must consider the life cycle of the product when it is produced, purchased and used. It must be everyone's responsibility. When a car is produced the manufacturers must

be required to maximize the recycling options to be used when the car is no longer being driven. When it is sold the retailer should be required to pay fees to cover the cost of recycling or disposal. This fee will certainly be shared by the consumer. The options implemented must involve the highest level of environmental protection possible. It is the right thing to do and it matters.

24. Description of Auto Shredder Residue "limits are established for 17 metals" – define whether these are descriptive of the CAM -17, or are they more specifically defined for concentrations of inorganic constituents that are listed in Title 22, section 66261.24(a)(2)(A).

25. Regulatory Framework "A standard of 50 mg/L for lead was established as sufficient for declassification of TASR, given the common occurrence of lead in roadside dirt at an extractable concentration greater than the STLC (5 mg/L) and the fact that under the conditions found in most solid waste landfills, the solubility of lead would be less than 5 mg/L, as demonstrated by modified WET testing using landfill leachate or deionized water." How is the term "common" defined here? Regarding the issue that "the solubility of lead would be less than5 mg/L, as demonstrated by modified WET testing using landfill leachate or deionized water"

26. Section 1.2, Regulatory Framework Most of the "F" letters do not specify 50 mg/l, so what documents are the basis for the establishment of the 50 mg/l limit?

27. Section 1.4, Unique characteristics affecting auto shredder industry This section contains the following statement; "Shredder facilities do not add any hazardous substances to the materials they process, and the companies participating in this study each implement rigorous scrap acceptance policies to ensure that hazardous materials are not inadvertently accepted into the yard". Polysilicates (depending on form) might be considered to be a hazardous material. Silica, (see T8 5155 Table AC-1, Cal-OSHA PEL's: http://www.dir.ca.gov/Title8/5155table_ac1.html, list a number of PEL's for silica and silicates), might also have a potential to be an occupational and non-occupational hazard to workers and non-occupational receptors impacted by shredder and landfill activities. DTSC has noted multiple events where hazardous materials have been accepted by shredders and recyclers (e.g., physically damaged batteries, compressed gas cylinders, etc.).

28. Section 1.4, Unique characteristics affecting auto shredder industry Material Safety Data Sheets and analytical information should be provided for materials used for the treatment process (silicate solutions, alkaline activators, etc.)

29. As stated in Section 5.2, "the TTLC/STLC limits apply to elemental metals only in a friable, powdered, or finely divided state." However, the sample preparation method 3050B for metals analysis listed in SW-846 calls for the use of USS #10 sieve (2000 microns) to which can be used to contradict the 100-micron rule.

30. Section 1.62, The particle size should be addressed uniformly in this treatability study, regardless of size fractions, to properly document the existence of metals in a powdered or finely divided state (100 microns).

31. Section 1.6.5, Curing. Does DTSC have access to the sample data referenced within this section? Is a protocol in place by which the samples are collected in a consistent manner and timeframe and can be readily replicated?

32. Section 2, Goals of the Treatability Study Text within this section indicates; "that historical data shall not be used as part of the study." However, the same section indicates that "recent data will be limited to the timeframe January 2011 to the present". Clarification of this statement would be helpful. DTSC will not accept treatability study data outside of the scope and operation of the current study plan.

33. One way to do this would be to sample MSR at the landfill after its been used as ADC. Consider boring and sampling to study effects of time and pressure on treated MSR.

34. Section 3.5, Solubility/Extractability of Metals in TASR under Landfill Conditions. Does DTSC have access to leachate data from landfills which receive ASR? If so, has that data been reviewed to determine if uncontained leachate might pose a threat to groundwater?

35. Section 3.0, Needed Information What effects, if any, are there on the solubility of the metals once it's been dried in the sun, compacted by heavy earth moving equipment, and dried in the sun some more. This is best answered by sampling the treated ASR after it's been applied as ADC at the landfills. One may even consider taking core samples of treated ASR that has been used as ADC at the landfills to see how time and pressure affect the solubility of the metals of concern. This data would be far more valuable than any theoretical results that could be obtained from the Multiple Extraction Procedure discussed in the Workplan.

36. Section 4.3, This statement seems to contradict section 2.2, which states "Determine whether TASR exhibits any state toxicity characteristic other than exceedance of TTLCs or STLCs for metals, specifically (i) the presence of organic persistent and bio accumulative toxic substances (e.g., PCBs), and (ii) aquatic toxicity." The purpose of this step is to confirm that TASR does not contain other hazardous constituents that would render the waste hazardous for reasons other than metals."

37. Section 4.3, While text within this section indicates "The treatment process is inapplicable to other constituents (e.g., PCBs) that may be contained in ASR". However there should be analysis for other constituents (e.g., PCBs, mercury, VOCs, sVOCs, PAH, TPH, dioxins, etc.,)

38. Section 4.3, Testing for total and soluble mercury should be done on all samples taken as part of this treatability study. The Workplan calls for eliminating the analysis of some metals if they are not detected in some of the initial samples, but since this is a treatability study, the full range of metals, total, soluble and TCLP should be analyzed for all samples.

39. Section 5.1, Sample Collection Method If sampling equipment is to be reused, then decontamination and equipment blank producers need to be specified.

40. Section 5.1, Sample Collection Method DTSC should oversee the sample collection and concurrently obtain split samples for analysis at DTSC Environmental Chemistry Laboratory (ECL).
41. Section 5.1, Sample Collection Method Why are not discreet samples being collected instead of compositing the samples into a 55-gallon drum? This waste stream is non-homogenous and industry should not try to make it homogenous as this is not representative of the waste stream.
42. Section 5.2, Sample Preparation Specifics regarding these methods should be provided in a detailed sampling and analysis plan (SAP).
43. Section 5.2, Sample Preparation How will the 150-gram sample be collected from the 10,000g aliquot on the clean plastic sheet once separated by the cone & quartering method? Also does clean refer to dedicated plastic sheet? Or will the sheet be cleaned? If so, then an equipment-blank should be collected for this as well.
44. Section 5.3, Required Number of Samples There are no provisions for notice, oversight, onsite observations or sharing of samples with DTSC.
45. Section 5.3, Required Number of Samples DTSC will request a split of each discreet sample collected before composting. This will affect the amount of sample collected at the half hour intervals as planned and need to be specified in the Sampling and Analysis Plan.
46. Section 5.3, Required Number of Samples The purpose for discreet samples by DTSC is to gather a sufficient amount of data points to compare against data provided from compositing by industry.
47. Section 5.4, Extraction and Test Methods This workplan should include a SAP, providing information regarding:
    - Sample containers
    - Shipping
    - Preservation
    - Labeling
    - Field documentation
    - Chain of custody
    - Laboratory controls (i.e., instrument blanks, matrix spikes, and duplicates)
48. A quality assurance/quality control plan should also be prepared, in accordance with EPA QA/R-5, EPA Requirements for Quality Assurance Project Plans, EPA/240/B-01/003, March 2001.
49. Section 5.4, Extraction and Test Methods Table 1. "Extraction with municipal solid waste leachate (MSWL)" This is a non-standard method. Details should be provided regarding how the homogeneity of the leachate will be ensured during the duration of the study. How will the potential presences of contaminants of concern in the leachate be assessed and managed? Who will provide this and what are the protocols for handling, storage, testing before use?

50. Section 5.4, Extraction and Test Methods Does each facility propose to use MSWL from their dedicated landfills?

51. Section 5.4, Extraction and Test Methods PCBs and Aquatic Toxicity Bioassay is not included in Table1 or Table 2?

52. Section 6.2., 95% ($\alpha = 0.05$) is more commonly used (see Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, March 2009, EPA 530/R-09-007)

53. Section 7.1, Untreated Material Untreated should be analyzed for PCBs, Mercury, sVOCs, VOCs, PAH, and TPH.

54. Section 7.1, Untreated Material A 150-gram sample size is not a sufficient amount to cover TTLC/STLC/TCLP/SPLP metals, PCBs and fish bioassay analyses. CalScience Labs should be contacted for guidance

55. Section 7.2, Laboratory Analysis Split aliquots sent to another laboratory are more correctly called "replicates". Duplicates are pairs of blind splits analyzed by a single laboratory. In addition to replicate samples, duplicate samples should also be run to check laboratory consistency.

56. Section 7.2, Laboratory Analysis Duplicates should not be analyzed by a separate laboratory. Variability of the concentrations could prove your sample collection methods inaccurate and therefore disprove all treatability study efforts. Instead, simply keep the identity of the duplicate sample hidden from the laboratory (e.g. sequential sample number) to avoid any bias.

57. Section 7.2, Laboratory Analysis Presumably both laboratories are California and NELAP- certified (should be) – need to specify.

58. Section 7.33, Further Treatability Studies More data should be collected initially from untreated samples to avoid treatability data that is not relevant due to the lack of number of samples. Perhaps schedule an agency sampling event at the five MSR facilities to provide good initial data. Moreover, more data will be required if other relevant constituents (e.g. metals and PCBs) are ultimately included in the treatability study

59. Section 7.34, Additional Extractions Discussion only identifies treatment combinations resulting in lead levels under 5 mg/l, being able to meet regulatory levels for zinc (250 mg/l) and other metals should be addressed that provide results as close to nonhazardous.