



Matthew Rodriguez
Secretary for
Environmental Protection



Department of Toxic Substances Control

Barbara A. Lee, Director
8800 Cal Center Drive
Sacramento, California 95826-3200



Edmund G. Brown Jr.
Governor

June 17, 2015

Mr. Thomas Strang, V.P.
Exide Technologies
Environmental Health & Safety – Americas
Building 200
13000 Deerfield Parkway
Milton, Georgia 30004

NOTICE OF DEFICIENCY FOR CLOSURE PLAN, EXIDE TECHNOLOGIES, VERNON, CALIFORNIA; EPA ID. NO. CAD097854541

Dear Mr. Strang:

The Department of Toxic Substances Control (DTSC) has reviewed the Closure Plan dated May 15, 2015. The Closure Plan was prepared by Advanced Geoservices on behalf of Exide Technologies. The Closure Plan was submitted as required by Paragraph 4.5 of the Stipulation and Order Amending 2014 Vernon Stipulation and Order, HWCA No.: 2014-6489.

Enclosed are Memorandums from DTSC staff that have reviewed the Closure Plan and identified issues which must be addressed before DTSC notices the Closure Plan for public comment. Please address all of the identified issues and comments in each Memorandum. Additionally, please address the following comments:

1. Please provide an Executive Summary in the beginning of the Closure Plan that adequately summarizes the entire Closure Plan.
2. Section 1.1 states, "This revised Closure Plan is submitted in accordance with 22 CCR 66265.112(c)(3). . . ."; however, DTSC has never approved a closure plan for Exide. Section 66265.112(c)(3) applies to owners or operators with an approved closure plan. DTSC requires the submission of the closure plan in accordance with section 66265.112(d). Please revise the text to clarify the applicable regulation citations.

3. Section 1.1 states that the plan has been developed to meet the closure requirements of regulations that are either not applicable or are non-existent. California Code of Regulations, title 22, sections 66265.178, 1103 and 603 do not relate to closure requirements. Please revise the text to include the appropriate regulations specifying the closure requirements.
4. Section 1.1 states, "Upon approval of the Closure Plan by DTSC, Exide will have up to 90 days to begin implementation." This statement is inconsistent with Paragraph 7.1 of the amended 2014 Vernon Stipulation and Order which requires that "Within 30 days of notification by the Department of its approval of the Closure/Post Closure Plan for the Vernon Facility pursuant to California Code of Regulations, title 22, section 66265.112(d)(5), Exide will begin implementation of closure of the Vernon Facility according to the terms of the Closure/Post Closure Plan." Please revise this section to comply with the amended 2014 Vernon Stipulation and Order.
5. Section 2.7.1 indicates that partial closure of units 11, 15 to 23, 26 to 30, 38, 39, 64 and 65 was completed in 2008 and 2009. DTSC has not received certification of closure for these units as required by section 66265.115; therefore, partial closure was not completed. Please revise section 2.7.1 to reflect the closure status of these units. DTSC expects that subsurface soil verification sampling will be conducted for all hazardous waste management units at the facility.
6. Section 2.8.3.3 indicates that the Closure Plan anticipates use of the Stormwater System after Closure. The Stormwater Management System is ancillary to unit 46 and must be closed in accordance with California Code of Regulations, title 22, section 66265.197. The system must meet the closure performance standards specified in that section or be managed as hazardous waste. Please revise the Closure Plan to include the procedures that will be used to close the Stormwater System in accordance with section 66265.197.
7. Section 2.8.3.5 states "... lead within the refining and receiving kettles at the time of ceasing operations may be re-melted and cast into molds for transport to an off-site recycling facility prior to closure." This activity is no longer permitted; any plans to include operations as part of closure must be proposed in the closure plan.
8. Section 2.9 includes the Closure Plan Certification from Mr. John S. Hogarth. California Code of Regulations, title 22, section 66270.11, requires the certification be signed by a responsible corporate officer or a duly authorized

representative. Please submit either a certification statement signed by a responsible corporate officer or an authorization for a duly authorized representative from a responsible corporate officer.

9. Table 3.1 indicates performance standards and confirmatory sampling criteria for tanks, equipment and deconstruction material that differ depending on whether the items are destined for a location within or outside of California. Additionally, the table shows "clean debris surface" and "visually clean of residue" as proposed performance standards. California Code of Regulations, title 22, section 66265.197 requires "At closure of a tank system, the owner or operator shall remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated soils, and structures and equipment contaminated with waste, and manage them as hazardous waste, unless section 66261.3(d) of this division applies." Therefore, DTSC requires the tanks, equipment and deconstruction material to be managed as a hazardous waste unless the waste meets the criteria in section 66261.3(d). To demonstrate that the waste does not exhibit a hazardous waste characteristic in accordance with section 66261.3(d)(1), sampling methods must conform to "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" of SW-846 as required by 66261.20(c). The performance standards, confirmation sampling procedures and management actions identified in Table 3.1 are not consistent with the requirements. Please revise the table to conform to the requirements of section 66265.197.
10. Section 3.2 describes closure performance standards; however, most of the section is devoted to clean up levels. Closure performance standards requirements are specified in section 66265.111. Also, section 66265.114 requires ". . . all contaminated equipment, structures and soil shall be properly disposed of, or decontaminated by removing all hazardous waste and residues, unless specified otherwise in sections 66265.197, 66265.228, 66265.258, 66265.280, or 66265.310." These sections refer to closure standards for different types of units and require the owner or operator to remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated soils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste, unless section 66261.3(d) applies. Section 66261.3(d) excludes waste that meets criteria including "the waste does not exhibit any of the characteristics of hazardous waste identified in article 3 of this chapter . . ." Therefore, all such residues, components, soils, structures and equipment must be managed as hazardous waste unless it can be shown through sampling procedures consistent

with Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) that such items do not exhibit any of the characteristics of hazardous waste. Please revise the Closure Plan to specify closure performance standards consistent with closure standards for each type of unit.

11. Section 3.2.1 describes cleanup levels for soils. The section is listed under Closure Performance Standards. Contaminated soil under hazardous waste management units must be managed as hazardous waste unless it can be shown that they do not exhibit characteristics of hazardous waste in accordance with California Code of Regulations, title 22, chapter 11, article 3 beginning with section 66261.20. Proposed cleanup levels for soils are appropriate for corrective action for subsoils; the cleanup levels provided are not acceptable closure performance standards. Please revise the Closure Plan to specify the closure performance standard for soils under hazardous waste management units. DTSC expects the closure standard to apply to soils down to 5 feet below surface.
12. Section 3.2.2 describes cleanup levels for containment areas. The section is listed under Closure Performance Standards. Section 66265.1102 requires contaminated concrete under containment units must be managed as hazardous waste unless it can be shown that they do not exhibit characteristics of hazardous waste in accordance with title 22, chapter 11, article 3 beginning with section 66261.20. Please revise the Closure Plan to specify the closure performance standard for concrete under containment units. DTSC expects the closure standard to be consistent with section 66265.1102, with Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) and with the thresholds specified as characteristics of hazardous waste in article 3.
13. Section 3.2.3 describes cleanup levels for containers, tanks and ancillary equipment. The section states that containers, tanks and equipment destined for reuse or recycling will have a "clean debris surface" pursuant to the requirements of the USEPA Debris Rule (40 CFR 268.45). 40 CFR 268.45 and California Code of Regulations, title 22, section 66268.45 refer to treatment standards prior to landfilling; the sections do not describe closure performance standards. Requirements for closure performance standards for tanks are specified in California Code of Regulations, title 22, section 66265.197. Section 66265.197 requires tank systems must be managed as hazardous waste unless it can be shown that they do not exhibit characteristics of hazardous waste in accordance with California Code of Regulations, title 22, chapter 11, article 3 beginning with section 66261.20. Requirements for closure performance standards for

containers and ancillary equipment are specified in regulations associated with the hazardous waste management unit they are derived from. Please revise the Closure Plan to specify the closure performance standard for tanks. DTSC expects the closure standard to be consistent with section 66265.197, with Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) and with the thresholds specified as characteristics of hazardous waste in article 3. Please revise the Closure Plan to specify the closure performance standards for containers and ancillary equipment consistent with the closure standards for the units they are derived from.

14. Section 3.2.3 also states "Scrap metal intended for recycling is not subject to regulation as a hazardous waste as noted in CCR 66261.6(3)(b)." Section 66261.6(3)(b) requires that scrap metal does not exhibit any other hazardous waste characteristic; contaminated scrap metal must be managed as a hazardous waste. Please revise this section to clarify the requirements.
15. Section 3.2.4 describes cleanup levels for surface impoundments. The section is listed under Closure Performance Standards. Section 66265.228 requires the owner or operator to "remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless section 66261.3(d) applies; or (2) close the impoundment and provide postclosure care . . ." Contaminated liners must be managed as hazardous waste unless it can be shown that they do not exhibit characteristics of hazardous waste in accordance with title 22, chapter 11, article 3 beginning with section 66261.20. Please revise the Closure Plan to specify the closure performance standard for surface impoundments. DTSC expects the closure standard to be consistent with section 66265.228, with Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) and with the thresholds specified as characteristics of hazardous waste in article 3.
16. Section 3.2.6 describes cleanup levels for treatment equipment other than tanks. The section is listed under Closure Performance Standards. The section indicates that "visually clean of residue" is the proposed closure performance standard for small pieces of equipment. Requirements for closure performance standards for tanks are specified in California Code of Regulations, title 22, section 66265.197. Section 66265.197 requires tank systems must be managed as hazardous waste unless it can be shown that they do not exhibit characteristics of hazardous waste in accordance with California Code of Regulations, title 22, chapter 11, article 3 beginning with section 66261.20.

Requirements for closure performance standards for containers and ancillary equipment are specified in regulations associated with the hazardous waste management unit they are derived from. Please revise the Closure Plan to specify the closure performance standard for treatment equipment other than tanks. DTSC expects the closure standard to be consistent with section 66265.197, with Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) and with the thresholds specified as characteristics of hazardous waste in article 3. Please revise the Closure Plan to specify the closure performance standards for containers and ancillary equipment consistent with the closure standards for the units they are derived from.

17. Section 3.2.7 describes cleanup levels for groundwater. The section is listed under Closure Performance Standards. The text indicates that Exide will choose a remedy. Cleanup levels for groundwater must be determined after investigation of groundwater contamination is complete. It is not appropriate to propose cleanup levels as closure performance standards. DTSC expects a Corrective Measures Study will be prepared after investigation is complete that presents the feasible alternatives available to clean up groundwater. DTSC will select a draft remedy and cleanup standards from the Corrective Measures Study to present for public comment. Please move section 3.2.7 from the Closure Performance Standards section to the contingent post closure section. Please revise the text to accurately describe the requirements for selection of a remedy and cleanup levels through the corrective action process.
18. Section 3.2.8 describes cleanup levels for VOCs in Soil Vapor. The section is listed under Closure Performance Standards. The text indicates that Exide will choose a remedy. Cleanup levels for VOCs in soil vapor must be determined after investigation of soil and groundwater contamination is complete. It is not appropriate to propose cleanup levels as closure performance standards. DTSC expects a Corrective Measures Study will be prepared after investigation is complete that presents the feasible alternatives available to clean up contaminated soil. DTSC will select a draft remedy and cleanup standards from the Corrective Measures Study to present for public comment. Please move section 3.2.8 from the Closure Performance Standards section to the contingent post closure section. Please revise the text to accurately describe the requirements for selection of a remedy and cleanup levels through the corrective action process.

19. Section 3.2.9 describes cleanup levels for the stormwater management system. The section is listed under Closure Performance Standards. The section proposes that the closure performance standard be "visually clean and rinsate sample results for total recoverable metals shall meet the LA River Interim wet-weather WLAs for general stormwater and the USEPA Benchmarks for the industrial stormwater sector." The stormwater management system is ancillary to Unit 46. Requirements for closure performance standards for tanks and ancillary equipment are specified in California Code of Regulations, title 22, section 66265.197. Section 66265.197 requires tank systems must be managed as hazardous waste unless it can be shown that they do not exhibit characteristics of hazardous waste in accordance with California Code of Regulations, title 22, chapter 11, article 3 beginning with section 66261.20. Please revise the Closure Plan to specify the closure performance standard for the stormwater management system. DTSC expects the closure standard to be consistent with section 66265.197, with Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) and with the thresholds specified as characteristics of hazardous waste in article 3.
20. Section 3.4.1 describes permitting and regulatory requirements with DTSC. The section indicates that the facility will be subject to regulation as a large quantity hazardous waste generator. Exide remains subject to applicable requirements under the Hazardous Waste Control Law and requirements for interim status, including, but not limited to closure and post-closure requirements in accordance with California Code of Regulations, title 22, section 66265.1. Please revise the text to include the additional regulatory requirements.
21. Section 3.4.2.4 indicates that a permit to operate will be obtained from SCAQMD for temporary equipment including a concrete crusher. Staff from DTSC and SCAQMD expressed concern about this proposal on May 21, 2015 during a presentation of an overview of the closure plan from your consultant. DTSC received a letter from the consultant dated June 2, 2015, which stated that Exide is changing the proposed method for managing concrete generated during closure to characterization and off-site disposal. The Closure Plan must be revised to include this proposed change. Please remove all references to concrete crushing from the Closure Plan and include provisions for off-site disposal.
22. Section 3.8.1 states "Following completion of the Phase 1 activities noted in the Closure Plan, the stormwater system will remain active as a traditional stormwater management system to manage non-hazardous stormwater at the

facility.” Because the stormwater management system is an ancillary to unit 46, DTSC expects it to be closed in accordance with California Code of Regulations, title 22, section 66265.197, which requires the system to be removed and managed as hazardous waste unless verification is provided that it is not a hazardous waste in accordance with section 66261.3(d). The Closure Plan does not provide such verification. Please revise the Closure Plan to include proposed sampling and analysis procedures to verify that the stormwater management system elements do not exhibit characteristics of hazardous waste. Please also include proposed procedures to remove the management system and contaminated soils surrounding the management system if the sampling and analysis indicates that the system does exhibit characteristics of hazardous waste.

23. Section 3.8.3 provides discussion of the CL-14 Trench Drain and states “Exide will analyze the liquid at CL-14 once per month to confirm liquids continue to be non-hazardous.” DTSC has provided direction on this issue in a letter dated May 13, 2015. Sample analysis of the accumulated liquids must be conducted prior to the start of each removal in accordance with the Temporary Leak Detection System Operating Procedure dated January 24, 2014. DTSC expects continued adherence to the operating procedures specified in that document. Please revise the language in this section to conform to the requirements included in the Temporary Leak Detection System Operating Procedure dated January 24, 2015.
24. Section 3.13 proposes shipping procedures that will be used during general closure activities. Shipping procedures used in the past to ship feed material have included checklists to verify requirements such as trailers were in good operating condition and visible dust was removed. Please include a proposed checklist in the revised Closure Plan. The checklist should include verification that trucks leaving the facility and the truck wash are dry.
25. Table 2.4 describes a closure summary by area and includes performance standards for each area. Most of the performance standards listed in this table propose to use the lower value of the Industrial Soil CHHSLs or Nov 2011 Industrial Soil EPA RSLs for concrete chip samples. These are not appropriate closure standards and do not conform to the requirements of California Code of Regulations, title 22, sections 66265.111, 66265.197, 66265.228, 66265.258, 66265.310, 66265.381, 66265.404 and 66265.1102. The regulations require that the owner remove units, waste residues, contaminated components, contaminated soils, and contaminated structures and manage them as

hazardous waste unless section 66261.3(d) applies. DTSC expects such items to be removed and managed as hazardous waste unless waste characterization sampling and analysis procedures consistent with California Code of Regulations, title 22, chapter 10, article 3 verify that the item does not exhibit characteristics of hazardous waste. DTSC also anticipates removal of concrete and soils 5 feet below ground surface at these units unless sampling and analysis clearly show that it does not exhibit hazardous waste characteristics. No such plan for sampling and analysis has been provided for these units in the Closure Plan. Please revise Table 2.4 and any discussions of closure performance standards to be consistent with requirements of California Code of Regulations, title 22, section 66265.111, et seq.

26. Section 4.0 proposes the Phase 1 closure sequence and provides a discussion of how units will be closed. The discussions for many of these units include procedures to decontaminate and remove but do not include procedures for sampling and analysis to verify units, structures, concrete or soils to verify that they do not exhibit characteristics of hazardous waste. DTSC expects such items to be removed and managed as hazardous waste unless waste characterization sampling and analysis procedures consistent with California Code of Regulations, title 22, chapter 10, article 3 verify that the item does not exhibit characteristics of hazardous waste. DTSC also anticipates removal of concrete and soils 5 feet below ground surface at these units unless sampling and analysis clearly show that it does not exhibit hazardous waste characteristics. No such plan for sampling and analysis has been provided for these units in the Closure Plan. Please revise section 4.0 to be consistent with requirements of California Code of Regulations, title 22, section 66265.111, et seq.
27. Section 4.3.6 includes a discussion of the proposed closure procedures for Unit 12. Regardless of whether the unit was ever used, Unit 12 must be closed in accordance with California Code of Regulations, title 22, section 66265.197. DTSC expects such items to be removed and managed as hazardous waste unless waste characterization sampling and analysis procedures consistent with California Code of Regulations, title 22, chapter 10, article 3 verify that Unit 12 does not exhibit characteristics of hazardous waste. DTSC also anticipates removal of concrete and soils 5 feet below ground surface at these units unless sampling and analysis clearly show that it does not exhibit hazardous waste

characteristics. No such plan for sampling and analysis has been provided for this unit in the Closure Plan. Please revise section 4.3.6 to be consistent with requirements of California Code of Regulations, title 22, section 66265.197, et seq.

28. Section 4.3.9 includes a discussion of the Smelter Building units and equipment and its relation to the closure sequence. Exide staff informed DTSC in the past that some of the kettles contain large amounts of lead slag that will be difficult to remove without heating the kettles; however, there is no discussion of this in the Closure Plan. Please include a discussion of the lead product remaining in the kettles and propose a plan for removing it.
29. Section 4.3.16 indicates that a concrete crusher will be mobilized and located in the Finished Lead Building. Staff from DTSC and SCAQMD expressed concern about this proposal on May 21, 2015 during a presentation of an overview of the closure plan from your consultant. DTSC received a letter from the consultant dated June 2, 2015, which stated that Exide is changing the proposed method for managing concrete generated during closure to characterization and off-site disposal. The Closure Plan must be revised to include this proposed change. Please remove all references to concrete crushing from the Closure Plan and include provisions for off-site disposal.
30. Section 4.3.21 indicates that the Finished Lead Building will be decontaminated but does not include a plan to deconstruct. Visual inspection of the interface between the Finished Lead Building and the Containment Building indicates that the two buildings are not isolated. The Finished Lead Building must be closed in accordance with section 66265.1102. Please revise section 4.3.21 to be consistent with the requirements listed in section 66265.1102.
31. Section 4.3.23 indicates that the asphalt paving at the Trailer Staging Area would be decontaminated and then concrete, soil and soil gas sampling would be conducted in accordance with sections 9 and 10. Section 10 does not refer to closure standards consistent with section 66265.114 which requires that contaminated asphalt paving be disposed as hazardous waste. DTSC expects closure of the Trailer Staging Area to include removal of asphalt paving and soils beneath the paving to a depth of 5 feet. Please revise section 4.3.23 to be consistent with requirements of section 66265.114.

32. The Closure Plan does not include any discussion on oversight for closure activities at the facility. The extensive set of requirements necessary for the closure of the facility in accordance with regulations and an approved Closure Plan establishes the need for an organizational plan for who will provide oversight and how oversight will be conducted. Please revise the Closure Plan to include a proposal for how oversight of requirements and activities will be conducted and identify the positions with statement of qualifications that will be utilized. Also, please include a plan to provide weekly progress updates to DTSC.
33. The Closure Plan does not include a concise summary of closure performance standards for each unit. Please include a table that identifies the closure performance standards that will be used for each unit. The closure performance standards must be consistent with the standards required in California Code of Regulations, title 22, section 66265.111.
34. Please include a table listing each unit that identifies a relative schedule for inventory removal, decontamination, confirmation sampling, removal of unit, building decontamination, confirmation sampling for the building, soil and soil gas sampling and building deconstruction. The schedule should also include methods that will be used for decontamination and confirmation sampling.
35. Section 11.3.3 and Appendix G proposes to construct a windbreak on outside walls by securing plastic sheeting on scaffolding or building structural elements. Please include covering the roofs of buildings during deskinning in these plans.
36. Please include a transportation plan in the revised Closure Plan that proposes the exact routes that trucks will take for each destination.

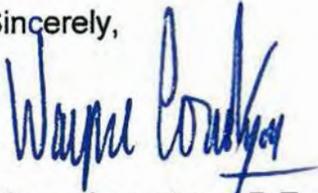
Please submit for DTSC approval a revised Closure Plan that addresses all of the comments listed above and all of the comments in the enclosed Memorandums by July 1, 2015. Please provide 7 hard copies and a digital copy prepared in files no larger than 30 megabytes each. DTSC will review the revised Closure Plan for conformance with regulatory requirements. DTSC will solicit public input on the revised Closure Plan before making its determination.

SCAQMD has jurisdiction over air quality issues related to the Closure Plan and they will be submitting a separate letter with their comments. If you have any questions, please contact Mohsen Nazemi @ mnazemi1@aqmd.gov.

Mr. Thomas Strang, V.P.
June 17, 2015
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If you have any questions regarding this letter please call me at (916) 255-3883.

Sincerely,

A handwritten signature in blue ink that reads "Wayne Lorentzen". The signature is written in a cursive style with a horizontal line underneath the name.

Wayne Lorentzen, P.E.
Permitting Division
Hazardous Waste Management Program

Enclosures (9)

cc: Sent Via Email

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Department of Toxic Substances Control

Matthew Rodriguez
Secretary for
Environmental Protection

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Edmund G. Brown Jr.
Governor

MEMORANDUM

TO: Wayne Lorentzen, P.E.
Project Manager
Hazardous Waste Permitting Program
Sacramento Office

VIA: Juan Koponen, Unit Chief
Engineering and Special Projects Office

FROM: Peter Gathungu, P.E., G.E.
Hazardous Substances Engineer
Engineering and Special Projects Office

SUBJECT: REVIEW OF CLOSURE PLAN FOR EXIDE TECHNOLOGIES, VERNON,
LOS ANGELES COUNTY, CALIFORNIA (SITE CODE:300214)

DATE: JUNE 15, 2015

[Handwritten signature] 6/15/2015

[Handwritten signature] 6/15/15



DOCUMENT REVIEWED

1. *Closure Plan, Exide Technologies, Vernon, California (EPA ID No. CAD 097854541) dated February 13, 2014 and Revised August 18, 2014, September 30, 2014, and May 15, 2015 (Closure Plan), prepared by Advanced Geoservices, West Chester, Pennsylvania for Exide Technologies, Vernon, California.*

INTRODUCTION

The Engineering and Special Projects Office (ESPO) of the Department of Toxic Substances Control (DTSC) has completed its review of the above listed document for Exide Technologies, Vernon, Los Angeles County. If you have any questions or comments regarding this memorandum, please contact me at (916) 255-6662 or via email at Peter.Gathungu@dtsc.ca.gov.

PROJECT SUMMARY

The Exide Technologies property is located on the northerly side of Bandini Boulevard in the City of Vernon, Los Angeles County. The approximate 15.5-acre property consists of two non-contiguous parcels separated by Indiana Street. The main office/administrative building is located easterly of Indiana Street. The battery recycling facility is located westerly of Indiana Street and is generally divided into three areas for reference: the North, West and South Yards.

A portion of the South Yard was used for secondary smelting and processing operations for aluminum, lead and zinc by Morris P. Kirk & Sons, Inc. from 1922 to 1953 when it was acquired by NL Industries (NL). The facility also recycled lead acid batteries and scrap metal. Facility operations expanded to the West Yard by 1946. Gould, Inc. (Gould) acquired the facility in 1979 and continued operations until 1983 when it sold the facility to GNB Technologies. The facility was modernized and reconstructed in the early 1980s, expanding into the North Yard, at which time it switched to lead recycling only. Most of the original structures in the South and West Yards were demolished as part of the modernization and reconstruction, and a lined rainwater retention pond was constructed in the South yard in 1984. GNB, including the Vernon facility, was acquired by Exide Technologies in September 2000. Exide Technologies continued lead recycling operations at the facility until March 2014 when operations ceased

The facility handled hazardous wastes in containers, tanks, containment buildings, a surface impoundment, or miscellaneous units. A total of 103 hazardous waste units were included in the facility's permit application

ESPO has the following review comments and recommendations.

COMMENTS AND RECOMMENDATIONS

Volume 1

1. Signature page. The Closure Plan is signed and stamped, but a signing/stamping date is not included. A signing/stamping date should be included as required by the California Business and Professions Code Sections 6735 and 7835.
2. It would be helpful to include a list of abbreviations and acronyms in the front portion of the document. Please revise the report to include a list of abbreviations and acronyms.
3. Section 2.8.2.6 Reverb Furnace Slag. The last sentence in the second paragraph states, "Slag produced prior to idling the facility in March 2014 has been or will be removed prior to closure and sent for recycling at another facility". This is vague; the text should clearly indicate whether the material has been removed, is in the process of being removed, or is yet to be removed for clarity and completeness.

4. Section 2.8.3.2 Blast Furnace Slag. The last sentence in this section states, "All Blast Furnace slag material generated prior to cessation of operations in March 2014 has been or will be removed from the facility prior to closure". This is vague; the text should clearly indicate whether the material has been removed, is in the process of being removed, or is yet to be removed for clarity and completeness.
5. Section 2.8.3.4 Battery Chips/Separator Material. The second sentence in the first paragraph states that battery cases are typically polyethylene. However, the first sentence in Section 2.8.3.3 Polypropylene, states, "the polypropylene battery case material" Please revise the text and indicate the correct battery case material; polypropylene or polyethylene.
6. Section 4.3.20 Building Deconstruction. The fourth sentence in the first paragraph states that lower levels of the smelter, blast furnace feed room, baghouse building and raw material processing system (RMPS) building will be backfilled in conjunction with deconstruction. We understand that Phase 2 will include removal of the upper portion of the subgrade including pavements and slabs. It therefore would be prudent to not backfill these areas during Phase 1 to facilitate the proposed excavation during Phase 2, by avoiding double handling materials, and expedite the schedule.
7. Section 16.3.3 Soil Removal and Management. The last sentence in the second paragraph states that excavations near structural building foundations may be required to be sloped away from the foundation to avoid undermining foundations. This would appear to indicate that contaminated soils will be left adjacent to foundations. Excavation options that would allow excavation of contaminated soils adjacent to foundations, such as shoring and slot cutting, or other measures should be considered and discussed.
8. Section 16.3.3 Soil Removal and Management. The second sentence in the fifth paragraph states that the most appropriate corrective action would be to leave foundations in place and place deed restrictions to restrict excavation. However, to facilitate grading when removing any concrete that may be contaminated, it would be prudent to remove foundations within ten feet below grade as required by the City of Vernon. In the event that leaving foundations in place is considered acceptable, then as-left (built) in place drawings should be prepared and included in the deed restrictions.
9. Section 16.3.5 Abandoned Stormwater Piping Removal. The second (last) sentence in the second paragraph states that the Closure Cost Estimate assumes that original/abandoned stormwater piping in the South yard will be left in place and capped as part of the South Yard Corrective Action activities. Abandoned/original stormwater piping should be removed or grouted (completely) in place to limit future settlement/ground collapse, especially for large diameter piping.

10. **Section 16.9 Contaminated Boundary Markers.** The text in the first paragraph states that fence posts will be installed to mark areas where contaminated soil is left in place. The text should be expanded to clearly indicate the type (material, paint type and color, if any), size (diameter/dimension), height, and embedment depth (foundation). It would be helpful to include a fence post detail in the report. We note that posts extending above finished grade could present a hazard/obstruction and could be damaged easily if the property will be paved and reused. Surface-finished markers, such as Christy boxes or well monuments, or other similar material, surface-finished or slightly elevated, such as concrete within asphalt concrete pavements would present less of an obstruction and likely would be more durable and easier to maintain.
11. **Section 16.11 Capping.** The text states that the uppermost portion of a cap proposed for installation in the North and South Yard areas will consist of a 4 inch thick asphalt top coat underlain by a 4 inch thick asphalt binder course over a 6 inch layer of crushed stone. The text should be revised to indicate whether the "Asphalt top" is asphalt concrete. In addition, the design basis/purpose of using a layer of asphalt binder is not clear. An asphalt binder layer likely will not have sufficient structural capacity for supporting traffic such as may be needed for routine cap inspection and maintenance, or for emergency vehicle access. The structural capacity of the asphalt binder layer will be further reduced during hot summer days and may lead to early failure when subjected to heavy traffic loads.
12. **Section 17.3 Phase 1 Schedule.** The last sentence in the first paragraph states that the sequence of building deconstruction is tentative and will be finalized following receipt of the Deconstruction Engineering Survey from the Contractor. The first sentence in the fourth paragraph states that Exide intends to conduct a constructability review of Phase 1 implementation prior to the Closure Plan public comment period. The text in the first paragraph should be expanded to indicate when the Deconstruction Survey will be completed.
13. **Section 20.1 Contractor Daily Report.** The second (last) paragraph states that a daily contractor report will be submitted electronically to Exide and the Resident Engineer by the end of the following day. The contractor daily report also should be provided to DTSC to facilitate proper regulatory oversight. Please revise the text to include DTSC in the list of contractor daily report recipients.
14. **Section 20.2 Closure Certification Report Requirements.** The bulleted list at the end of the second paragraph includes minimum items to be included in the Closure Certification Report. This list should be expanded to include a detailed description of all areas where contamination is left in place.
15. **Section 21.2 Amendment of Post-Closure Plan.** The last sentence states that the post-closure plan will be amended whenever unexpected events require

modifications. The post-closure plan also should be amended whenever there are changes in the as-built/closed condition of the site, whether unexpected or by intentional design, which change site operations. The text should be expanded to reflect this fact.

16. Section 21.3 Post-Closure Activities. The third sentence in the first paragraph states that post-closure does not anticipate that contaminated soils will remain in-place. However, Sections 16.9 and 16.11 of the Report indicate that contaminated soils will be capped. The text should be revised to be consistent with the other sections indicating that contaminated soils will be left in-place.
17. Section 21.3 Post-Closure Activities. The first sentence in the second paragraph states that surface run-off will be discharged. This text is vague and incomplete and should be revised to indicate how and where the surface run-off will be discharged. We note that item 4 in Section 21.1 Contents of the Post-Closure Plan states that stormwater will be discharged to the local sewer system.
18. Section 21.0 Post-Closure Plan. The first sentence in the third paragraph states that, "Post-Closure activities apply when contaminated soils are **NOT** left in-place". The text in Section 21.1 Contents of the Post-Closure Plan item (1) second sentence refers to "any remaining contaminated soil". This is contradictory, and the word NOT in Section 21.0 should be deleted.
19. Table 1.2 Waste Generated During Closure. The table uses a very small font and is barely readable. Please use a larger font for readability.
20. Table 2.2 Hazardous Waste Management Unit Descriptions. The descriptions for Unit 78 Stormwater Surface Impoundment, is shown with a structural certifications and permit status as "**Application pending**". Similar permit status is shown for units 79, 80, 87 and 89 through 103. In addition, Unit 79 structural certification is shown as, "tank certification to be prepared following installation". Also, Unit 87 structural certification is shown as, "Tank certification to be prepared following upgrades". We note that these features are slated for removal/closure and the text should reflect this fact.
21. Figure 16.1 Contingent Closure Cap. The cap detail is shown as 4" asphalt top coat underlain by 4" asphalt binder underlain by 6" crushed stone underlain by 12" structural fill underlain by single sided geocomposite underlain by 60 mil HDPE underlain by GCL underlain by 4" sand. The cap does not cover the Baghouse and Smelter Buildings which are slated for demolition. The cap detail should be revised to indicate whether the "Asphalt top" is asphalt concrete. In addition, the design basis/purpose of using a layer of asphalt binder is not clear. An asphalt binder layer likely will not have sufficient structural capacity for supporting traffic such as may be needed for routine cap inspection, or for emergency vehicle access. The same cap

configuration is shown for some of the units in Appendix D Unit Descriptions and Work Breakdown Structures.

22. Figure 16-2 Conceptual Excavation Plan shows areas to be excavated to a depth of five feet below bottom of "pavement" (0.8 feet). However, most of the proposed excavation areas are within existing building footprints (beneath floor slabs), and it is not clear that all floor slab concrete is 0.8 feet thick. The text should be revised to indicate that excavation will be both below pavement and building floor slabs. In addition, the text should indicate whether all pavements/floor slabs are 0.8 feet thick, or if not indicate existing pavement/floor slab thicknesses.

Volume 3

23. Appendix E Topographic Survey. Drawing Sheets 1 of 5 through 5 of 5 are dated February 28, 2006. These drawings are out of date; some of the features shown do not appear to represent existing conditions. Please revise/update the drawings to reflect current conditions.
24. Appendix G Engineering Controls. Section 3.3.2 Temporary Enclosures. The last sentence in the first paragraph states that work may be performed without use of enclosures if tests (concrete chip sampling) indicate that total lead concentrations are below 320 mg/kg. However, even lead concentrations below this value present a significant hazard to humans and the environment and effective dust control should be employed to prevent exposure.
25. Appendix G Engineering Controls. Section 3.4.1 General Methods. The text in the third bullet states that liquid runoff from wetted areas will be contained or directed into drains. This liquid may contain lead and other chemicals. It is not clear how the contaminated liquid would be recovered from the drains for disposal or treatment.
26. Appendix G Engineering Controls. Section 3.4.1 General Methods. The text in the seventh bullet states that wind speeds will be measured using a pocket Weather Tracker 4500NV. It would be prudent to use a stationary/mounted weather tracker/monitoring device for greater accuracy and consistency. However, a pocket Weather Tracker 4500NV or other equivalent could be used in addition to the stationary monitors.
27. Appendix G Engineering Controls. Section 3.4.1 General Methods. The text in the 15th (last) bullet states, "Records will be maintained for 5 years". It is not clear what records will be maintained and by whom. The text should be revised and expanded for clarity and completeness.
28. Appendix G Engineering Controls. Section 3.4.4 Drilling, Pavement Removal and Soil Activities. The first sentence in the third paragraph refers to grading of soils prior to pouring concrete or asphalt paving. However, it is not clear where the

pavement(s) is/are being constructed. In addition, the section title only refers to pavement removal.

29. Appendix G Engineering Controls. Section 3.4.4. Drilling, Pavement Removal and Soils Activities. The first sentence in the fourth paragraph states that dust control measures will be taken for soils with total lead concentrations exceeding 320 mg/kg. However, even lead concentrations below this level are a concern and dust control measures should be implemented for all lead contaminated soils.
30. Appendix G General Engineering Controls. Section 3.4.5.2 Truck Trailers. The text in the third bullet states that the end dump trailers shall be lined with a single 6-mil polypropylene liner. A 6-mil polypropylene liner is relatively thin and likely will not hold up to some of the proposed material such as concrete debris.
31. Appendix G Engineering Controls. Section 3.4.5.2 Truck Trailers. The text in the fourth bullet states , " After loading the material using industrial type duct tape". This text is confusing. Please revise for clarity.
32. Appendix G Engineering Controls. Section 3.5.10 Deconstruction. The text in the fifth paragraph states that deconstruction will be performed under an enclosure with negative pressure for total lead concentrations above 320 mg/kg. However, dust from areas with total lead concentrations below 320 mg/kg is still of a concern and dust control measures should be implemented in such areas.
33. Appendix G Engineering Controls. Section 3.5.12.2 Drill Site Preparation Outside Total Enclosure. The second sentence in the third paragraph states that the opening in paved areas will be large enough to accommodate the drill rig. This is confusing; it is not clear whether the reference is to the drill auger/stem, or the whole drill rig.
34. Appendix G Engineering Controls. Section 3.5.12.2 Drill Site Preparation Outside Total Enclosure. The text in the last half of the fourth paragraph appears to be repeated. Please revise for clarity and completeness.
35. Appendix G Engineering Controls. Section 3.5.12.2 Drill Site Preparation Outside Total Enclosure. The last sentence in the sixth paragraph describes cleanup on completion of drilling operations, but does not describe how the borings will be abandoned. The text should be expanded to describe how borings will be abandoned on completion of drilling operations.
36. Appendix G Engineering Controls. Section 3.5.12.2 Drill Site Preparation Outside Total Enclosure. Section 4.0 Oversight. The third sentence states that the name and qualifications of the third party consultant will be provided to DTSC and AQMD two days in advance of retaining the consultant. We would suggest that the text be expanded to include a minimum time frame between the retention of a consultant

and commencement of the work to facilitate proper regulatory oversight; we would suggest at least ten working days.

37. Appendix L Boring logs. This section includes numerous boring logs for borings advanced between 1984 and 2014. The borings dated prior to 2014 do not have location coordinates, but even with location latitude and longitude information shown for the 2014 borings, it is cumbersome to determine the location of the borings. This section should include a drawing/figure showing all the borings.



Department of Toxic Substances Control

Matthew Rodriguez
Secretary for
Environmental Protection

Barbara A. Lee, Director
9211 Oakdale Avenue
Chatsworth, California 91311

Edmund G. Brown Jr.
Governor

MEMORANDUM

TO: Suhasini Patel
Senior Environmental Scientist
Hazardous Waste Management Program
Office of Permitting - Sacramento

Wayne Lorentzen, P.E.
Senior Hazardous Substances Engineer
Hazardous Waste Management Program
Office of Permitting - Sacramento

FROM: Frank S. Parr, CIH, CSP
Senior Industrial Hygienist
Health and Safety Program (HSP)

DATE: June 16, 2015

SUBJECT: Exide Technologies Closure Plan
Vernon California

PCA Code: 24010 Site Number: 300214-50-43



BACKGROUND

The Hazardous Waste Management Program in Sacramento requested the HSP review the Closure Plan for the Exide Technologies Facility in Vernon, California. This document was developed by Advanced Geoservices and was last updated May 15th, 2015

The Site, located at 2700 South Indiana Street in Vernon, California, occupies an approximately 15-acre parcel. The Site is bordered by East 26th Street to the north and Bandini Avenue towards the south.

Land use in the immediate area surrounding the Site consists primarily of industrial-type activities. To a large extent, structures and various forms of paving cover the Site.

DOCUMENT REVIEWED

The HSP reviewed the "Closure Plan, Exide Technologies Vernon, California (EPA ID NO. CAD 097 854 541)", prepared by Advanced Geoservices. The Closure Plan was last updated on May 15, 2015 and was received by the HSP reviewer May 15th, 2015.

GENERAL COMMENTS

The Department of Toxic Substances Control (DTSC) HSP has reviewed specific sections of the above-referenced documents, focusing on occupational safety and health issues.

The DTSC is unable to foresee all the health and safety hazards in the work place by the review of the Work Plan. Continuous surveillance of the work-site and creation of an effective health and safety program by the employer will reduce work place injuries and reduce liability.

SPECIFIC COMMENTS

- 1) Page 6 of 26, Section 2.5, Operational History. Text within this section states that "Exide conducted a detailed cleaning of the facility by HEPA vacuuming in 2014". While HEPA vacuuming may have been done in portions of the facility, this statement is misleading to those reading it without having had the benefit of working in the Containment Building. Vast areas of the Containment Building are still covered with dust and detritus accumulated over years of operation. Rafters, mezzanines, cat-walks, and furnace areas do not appear to have been cleaned via any means.
- 2) Page 3 of 42, Section 4.2.3, Utilities. Please ensure that all sub-contractors installing excavations (initiating sub-surface activities) comply with the requirements to notify Regional Notification Centers a minimum of 2 working days prior to the initiation of sub-surface activities. [8 CCR 1541(b)(2)]. Please include the contact information "811". California Government Code 4216.
- 3) Page 17 of 42, Section 4.3.9, Smelter Building Units and Equipment. Will we have data to demonstrate that the insulating bricks associated with the refining kettles are non-ACM prior to their removal?
- 4) Page 21 of 42, Containment Building Decontamination. Please verify that the air-pollution control ducting will be assessed for residual content prior to attempting to dismantle them. Past experience on large-scale industrial demolition projects has demonstrated that large volumes of previously entrained solids settle out in elbows and junctions where air velocities typically drop. This can result in potentially large-scale build-up of particulates.

5) Page 1 of 4, Section 8.0, Decontamination Procedures for Containment Structures and Buildings. Please include language in the bid specifications indicating that the controlling employer (please refer to Article 4.5. Multi-Employer Worksites) will ensure that all pits, vaults, sumps, and floor-openings which previously held process equipment (e.g., kettles, etc.) are guarded in a manner consistent with provisions found within 8 CCR 3212. (Floor Openings, Floor Holes and Roofs).

6) Page "6 of 4", Section 8.6.2, Asbestos Removal. Will asbestos-containing materials be removed prior to any HEPA vacuuming or pressure washing activities might impact those materials?

7) Page 3 of 7, Section 11.3.2, Deconstruction Engineering Survey. Please include provisions to share the survey of the structure (required by 8 CCR Subchapter 4, Construction Safety Orders, Article 31 – Demolition) to determine the condition of the framing, floors, and walls, and the possibility of an unplanned collapse of any portion of the structure or any adjacent structures with DTSC and other entities who will have personnel on-site and who may be exposed to the hazards of the planned demolition activities.

8) Page 1 of 2, Section 18.0, Health and Safety. As California is a State-Plan State (having its' own State OSHA Program), all occupational safety and health regulations cited within the related Exide Closure Plan documents must reference California OSHA citations.

The Site – Specific Health and Safety Plans related to the Exide facility assessment, decontamination and demolition must comply with the provisions required by 8 CCR Sub-Chapter 4, Construction Safety Orders and 8 CCR Sub-Chapter 7, General Industry Safety Orders.

The HASPs must at a minimum address the following topics:

1. A safety and health risk or hazard analysis for each site task and operation found in the work plan.
2. Employee training assignments to assure compliance with subsection (e) of 8 CCR 5192.
3. Personal protective equipment (PPE) to be used by employees for each of the site tasks and operations being conducted as required by the personal protective equipment program in subsection (g)(5) of 8 CCR 5192.
4. Medical surveillance requirements in accordance with the program in subsection (f) of 8 CCR 5192.

5. Frequency and types of air monitoring, personnel monitoring, and environmental sampling techniques and instrumentation to be used, including methods of maintenance and calibration of monitoring and sampling equipment to be used.

6. Site control measures in accordance with the site control program required in subsection (d) of 8 CCR 5192.

7. Decontamination procedures in accordance with subsection (k) of 8 CCR 5192.

8. An emergency response plan meeting the requirements of subsection (l) of 8 CCR 5192 for safe and effective responses to emergencies, including the necessary PPE and other equipment.

9. Confined space entry procedures.

10. A spill containment program meeting the requirements of subsection (j) of 8 CCR 5192.

9) Page 2 of 2, Section 18.0, Health and Safety. Please note that it is feasible that some of the tasks listed in the closure estimate which are not anticipated to require level C PPE, may require level C when actual field conditions are assessed.

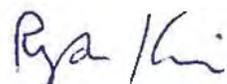
While there are recognized reductions in worker efficiency associated with utilizing higher levels of PPE, there are also recognized costs associated with occupational injuries and illnesses incurred as a result of improper selection and use of PPE. Consequently, there should also be a discussion of the importance of the need for perspective contractors to also give equal credence to adequately protecting workers

CONCLUSIONS AND RECOMMENDATIONS

The areas where the HSP has requested additional information and/or clarification must be corrected or clarified and resubmitted for further review.

Future changes in the document should be clearly identified.

The HSP is available to discuss this document and related issues. Should questions arise contact Frank Parr at (818) 717-6592.

PEER REVIEW BY: 
Ryan Kinsella, M.S., REHS, CIH
Senior Industrial Hygienist





Matthew Rodriguez
Secretary for
Environmental Protection



Department of Toxic Substances Control



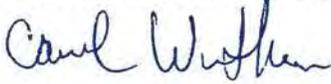
Barbara A. Lee, Director
Environmental Chemistry Laboratory
700 Heinz Avenue
Berkeley, California 94710-2721

Edmund G. Brown Jr.
Governor

MEMORANDUM

DATE: June 10, 2015

TO: Wayne Lorentzen; Senior Hazardous Substances Engineer, DTSC

FROM: Carol Wortham, 
Quality Assurance Officer
Environmental Chemistry Laboratory, DTSC

SUBJECT: Review of the Closure Plan for Exide Technologies Vernon, California
prepared by Advanced Geoservices, Revised May 15, 2015

This memo summarizes comments based on a review of the Closure Plan for Exide Technologies in Vernon, California prepared by Advanced Geoservices last revised on May 15, 2015. These comments focus on the laboratory related sections of the document only. The scope of the review was limited to sub-sections of the document that discuss laboratory analytical testing. The review did not address sampling or other aspects of the project beyond this scope. Based on the number of areas needing clarification it is recommended that Advanced Geoservices thoroughly review their document for accuracy and completeness in the context of the project's data quality objectives.

Closure Plan

1) Section 7.6 Analytical Test Methods

"Wipe samples, and equipment rinsate samples will be analyzed for total metals by USEPA SW-846 Methods 6010C and 7141 and 7470, and 7199."

Method 7141 does not exist; method 7470 is for liquid waste and does not apply to wipe samples.

2) Section 9.6 Analytical Test Methods

"Samples collected from building interiors, tank pedestals and secondary containment areas will be analyzed for total metals by USEPA SW-846 Methods 6010C and 7141 and 7470, and 7199. Chip samples collected from concrete sumps will be analyzed for metals and VOCs. Four chip samples from each of the Reverb Furnace, Blast Furnace and Blast Furnace Feed Room floor areas

will be analyzed for total metals, VOCs, PAHs by USEPA 8270C, and dioxins and furans (USEPA 8290)."

Method 7141 does not exist; method 7471 is for liquid waste samples and does not apply to solid samples.

3) Table 10.1

- Based on ELAP accreditation, some of the updated methods listed may not be able to be used because they have not been approved for use for Hazardous Waste Characterization based on Title 22 Division 4.5 Chapter 10 Section 66260.11.
- Method 7199 is mentioned in sections 7.6 and 9.6 but method 7196A is listed in this table. Is analysis of Hexavalent Chromium (Cr VI) required for this project? If it is required, which method should be used?
- Why is Method 6010B listed for water samples but method 6010C listed for solid samples?
- Why is pH method SM 4500 H+B listed rather than EPA Method 9040C for water samples?
- Based on this table, wipe samples are being analyzed for metals by ICP, mercury, and possibly hexavalent chromium. Each of these methods has their own sample preparation process for solid samples. Standard protocol is to provide a separate wipe for each analysis method requested. It is not clear in the document if additional wipe samples will be provided for each analysis. If only one wipe will be provided, there is no direction for how to split the wipe for analysis.
- Wipe, Soil, Concrete Chip/Core, Concrete Characterization Sample Types: Method 1311 (TCLP Leaching procedure) does not apply to total metals analysis; Method 7470 is for liquid waste samples not solid samples.
- Soil Sample Type: Method 0945D is not a pH method.
- Water Sample Type: No method is listed for Turbidity analysis and chlorinated herbicide analysis.
- Equipment Rinsate Sample Type: Method 1311 (TCLP) does not apply to total metals analysis.

4) Appendix A: Sampling and Analysis Plan

- Section 5.1.3 Chip Samples, 5.1.4 Core Samples, and 5.1.5 Soil Sample Analysis: "analyzed for Appendix IX VOCs (excluding herbicides, pesticides, and dioxin/furans)."

VOC testing does not usually include the compound classes mentioned. There are other SVOC compounds that are part of the Appendix IX list but are not included in the compound classes listed. Are these samples only to be analyzed for VOCs or are the other

SVOC compounds that are not herbicides, pesticides, or dioxin/furans to be analyzed? If a list of the specific chemicals of interest has not been developed from a thorough site history investigation, why are Tentatively Identified Compounds (TICs) reports being requested?

- Section 5.1.7 Soil Pore Water, 5.1.8 Surface Water: "include Appendix IX (total cyanide, Title 22 metals, VOCs, SVOCs, sulfate, turbidity, pH)"

Table 10.1 indicates that herbicides and organochlorine pesticides are to be included in the annual analysis but are not listed.

Table 10.1 indicates that the quarterly VOC analysis will include the Appendix IX compounds but this is not clear in this statement.

- Section 7.5 Soil Gas Samples: The samples are collected in syringes indicating that a mobile laboratory will be on site for analysis. Will CalScience be providing this laboratory?
- Section 10.2: "Laboratory quality control (QC) samples will be collected in double volume....."

Triple volume may be required for some analyses such as VOCs in order to provide sufficient sample for initial analysis and re-analysis if required. This additional sample amount will also be used to supply the laboratory sample duplicate analysis. Wipe samples will require triple volume for each analysis requested in order to provide one wipe for the sample analysis, one wipe for a matrix spike, and one wipe for the matrix spike duplicate.

- Table 1 Sample Preservation, Holding Times, and Container Requirements
 - ◆ Total Metals: Mercury has a 28 day hold time
 - ◆ VOC holding time for Terra Core is 48 hours. It only changes to 14 days if the Terra Core is transferred into a preserved vial. A minimum of 3 Terra Cores are required.
 - ◆ Total Metals Wipe: Mercury has a 28 day hold time
 - ◆ VOC Vapor: There is no mention of the hold time for the syringe sampling mentioned in section 7.5.
- Table 2 Summary of Laboratory Methods
 - ◆ Method 1311 is a TCLP leachate method and does not apply to total metals analysis
 - ◆ Method 7470A is for mercury analysis in liquid waste samples and does not apply to solid or soil samples.
 - ◆ Method 7196A is listed but there is no mention of the necessity of analyzing any of the samples for hexavalent chromium.

- ◆ Method 0945D does not exist.
- ◆ Moisture Content cannot be spiked so accuracy limits do not apply to this analysis.
- ◆ Accuracy limits listed for organic methods: Why are they defined for VOCs in soil but allowed to use in-house methods for water samples? SW-846 required organic methods to determine control limits for accuracy measurement. Will in-house control limits apply to all organic analyses?
- ◆ Turbidity method SM 23130B does not exist.
- ◆ Soil Vapor: Check with the laboratory to determine if limits apply, especially with the 8260 method. Some sort of quality measurements should be made such as surrogates and blank spikes.
- ◆ Why is the SW-846 method listed for soils but the Standard Method listed for waters for pH analysis?
- Table 3 Reporting Limits
 - ◆ Reporting limits are missing for organochlorine pesticides, chlorinated herbicides, dioxin/furans, turbidity, pH for water, and 8260B for soil vapor as outlined in Table 2.
 - ◆ Mercury analysis only lists method 7470 which is for liquid waste samples. The soil method is missing.
 - ◆ Sulfide, TPH Gasoline, TPH Diesel, TPH Motor Oil, and Redox Potential are included in the table but not in tables 1 or 2 and are not mentioned in the discussion sections of the Sampling Analysis Plan nor are they mentioned in the Closure Plan.
 - ◆ The 8260B and 8270C compound lists do not include all the compounds listed in Appendix IX. Laboratory lists should be checked to make sure all compounds needed for the project will be reported by the laboratory.
 - ◆ Check to make sure the reporting limits listed will meet the MRLs or MCLs required for the project.
 - ◆ Is the Active Soil Gas Investigations Advisory document going to be applied to this project? If it is, all aspects of the Advisory should be considered with respect to the project data quality objectives. The TO-15 list does not include all the compounds in the advisory. Soil Vapor samples for 8260 will also need to follow this list. Tentatively Identified Compound (TICs) reports will need to be submitted.
 - ◆ The compounds mentioned in Attachment A for soil gas investigations are not all included in the TO-15 list in this table.

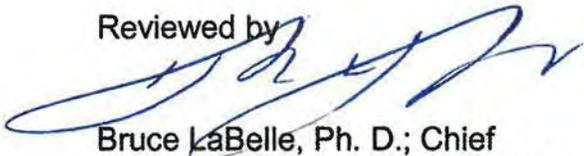
5) Attachment B: Cal Science QA Manual

This version was written in 2010 and is already 5 years old. Do they have a more current version?

6) Field Sampling Plan

Table 7.1 Soil Sample containers, preservation techniques, and holding times has different information than that outlined in the Sampling and Analysis Plan.

Reviewed by

A handwritten signature in blue ink, appearing to read 'Bruce LaBelle', is written over the printed name.

Bruce LaBelle, Ph. D.; Chief
Environmental Chemistry Laboratory, DTSC



Matthew Rodriguez
Secretary for
Environmental Protection



Department of Toxic Substances Control

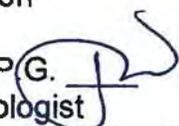
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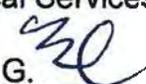


Edmund G. Brown Jr.
Governor

MEMORANDUM

TO: Wayne Lorentzen, P.E.
Senior Hazardous Substances Engineer
Permitting Division

FROM: Todd Wallbom, P.G. 
Engineering Geologist
Chatsworth Geological Services Unit

CONCUR: Craig Christmann, P.G. 
Senior Engineering Geologist
Chatsworth Geological Services Unit

DATE: June 16, 2015

SUBJECT: Technical Review of Revised Closure Plan
Exide Technologies, Inc. Site
2700 South Indiana Street
Vernon, California 90058

PCA: 24010 Site Code: 300214 Phase: 50 MPC: 43 Log No: 20030302

As requested, Geological Services Unit (GSU) staff of the Department of Toxic Substances Control (DTSC) has performed a technical assessment of the May 15, 2015 *Revised Closure Plan* (Closure Plan or 'CP'), on the Exide Facility, located at 2700 South Indiana Street, Vernon, CA (the Facility or 'the Site'). The Closure Plan was submitted by Advanced GeoServices (AGC) on behalf of the Exide Technologies Corporation (Exide).

The Exide Facility was a battery recycling facility. Prior to 1922, a portion of the property was occupied by a meat rendering plant while other areas were quarried for gravel. From 1922 to 2014, lead smelting and metals processing operations occurred at the Facility. With the recent withdrawal

of their RCRA Part B hazardous waste permit (permit) application, the Facility is now considered to be permanently non-operational and will soon be undergoing Site-wide closure.

Contaminants-of-concern (COCs) at the Facility include volatile organic compounds (VOCs); primarily trichloroethene (TCE), and inorganics; primarily antimony, lead, arsenic, cadmium, and zinc. Dioxins and furans are also Facility COCs and have been detected in soil and dust at several on and off-Site locations. Elevated sulfate, inorganics, VOCs, and low pH (acidic) conditions also continue to occur in groundwater beneath the Facility.

GSU staff has reviewed the Closure Plan for conformance with technical adequacy, compliance with the California Code of Regulations (CCR) Title 22, Section 66265 and other applicable regulations, DTSC Closure Plan regulations and guidelines, and various guidance documents and standards.

Following our review, we recommend that the Closure Plan be revised in accordance with our comments provided herein and resubmitted. Our comments on the CP are as follows:

General Comments:

1. After our review, the GSU has determined that the Closure Plan does not contain sufficient detail to enable us to evaluate whether:
 - 1) The Closure Plan activities will adequately protect human health and the environment.
 - 2) The Closure Plan satisfies applicable California regulations and various guidance documents and standards.
 - 3) The conditions assumed in the Closure Plan adequately reflect the actual conditions at the Facility.

The Closure Plan also fails to follow some important elements of DTSC's guidance document *Permit Writer Instructions for Closure of Storage and Treatment Facilities*, Chapters 3.1 to 3.18 (Permit Writer Instructions for Closures). This information is available on-line at:

https://www.dtsc.ca.gov/HazardousWaste/Permits/Permit_Writers_Closure_TOC.cfm

2. Phase I of the Closure Plan is described as closure of all the hazardous waste management units (HWMUs), buildings, and ancillary equipment. This also includes confirmation sampling of concrete, soil and soil vapor beneath the units, and potentially groundwater, as well as sampling non-porous surfaces like metal. Phase 2, Contingent Closure, will not be known until all the sampling beneath the units is conducted.

The Closure Plan proposes to compare the results of the confirmation sampling to background levels, yet no sampling plans for determining background in soil, soil-pore-liquid, soil vapor, surface water, or groundwater were included. In fact, the plan mentions only that cleanup to background will occur for groundwater and soil vapor, but not soil. Sampling plans to determine background values for soil, soil-vapor, surface water, soil-pore-liquid, and groundwater should be included in the revised plan. Due to widespread contamination that exists on-site, the collection of on-site data to determine background levels for the development of closure performance standards will likely not be approved by DTSC.

3. For any HWMU, or former unit, which is anticipated to be closed with waste in place, a post-closure plan is required as specified in §66265.197 and 66265.1102, respectively. However, for the sake of the CP, we assume that all soil, concrete, asphalt, and miscellaneous material that is contaminated above the closure performance standards will be removed from the Site and that remediation of the Site will occur to allow for residential or unrestricted use.
4. Section 3.7, 'Confirmation Sampling Plan for Containment Structures, Tanks, and Equipment', of the Permit Writer Instructions for Closures, states that "to confirm that equipment, structures, and buildings have not been or no longer contaminated with hazardous constituents, a surface sample must be taken." This should be followed in the CP for all materials regardless of the intended recipient of the material or perceived use of the material once shipped off-site. This requirement can be waived for any material being shipped off-site that is manifested as RCRA-hazardous waste.
5. Discharge in to the open drainage channel (ODC) and the Los Angeles River (LA River) is unacceptable unless approval is granted from the appropriate local or state agency (e.g., State Water Resources Control Board or 'SWRCB'). This scenario may occur only if there are no restrictions on the property (i.e., remediated to unrestricted land use or residential levels). Even still, a general discharge permit may still be required from the SWRCB. However, since Exide likely intends to close the Facility as a landfill, article 6 surface water monitoring will be

required for the duration that the Site is maintained as a landfill. In which case, a National Pollutant Discharge Elimination System (NPDES) permit may be required from the Los Angeles Regional Water Quality Control Board (LARWQCB).

6. The CP does not include a transportation plan for shipping material off-site. In addition, the distance to the off-site waste management facility was not provided.

Specific Comments:

1. Section 3.2.3, Cleanup Levels for Containers, Tanks, and Ancillary Equipment, Pages 6-7: The Closure Plan states that Exide will not perform any confirmation sampling of equipment that is destined to be shipped off-site for "re-use", 'scrap metal', 'recycling', or, more ambiguously, 'off-site disposal'. Exide then cites EPA's 'Clean Debris Rule', or 40CFR 268.45 as justification to allow them to make a determination of adequacy of decontamination of tanks and equipment to 'visually clean'. In fact, none of the California regulations are cited by Exide [22 CCR §66265.112(b)(5)] which requires confirmation sampling. In addition, it is unknown if any of the receiving facilities are facilities approved to receive (potentially) RCRA-hazardous waste.

Exide states that 'scrap metal intended for recycling is not subject to regulation as a hazardous waste as noted in CCR 66261.6(3)(b).' This is correct; however, the regulation also states that this regulation for recyclable material does not apply to RCRA hazardous waste, which Exide will not be able to demonstrate effectively without collecting and analyzing confirmation samples. Instead, we recommend Exide review and cite §66261.6(c) 'owners or operators of facilities subject to RCRA permitting requirements with hazardous waste management units that recycle hazardous wastes are subject to the requirements of articles 27 and 28 of chapters 14 and 15'.

22 CCR 66268.45 is the California regulation that applies to treatment of hazardous debris before land disposal. §66261.100(b), 'RCRA Hazardous Waste' states that 'a hazardous waste is presumed to be a RCRA hazardous waste unless or until the generator determines that the waste is non-RCRA hazardous waste pursuant to section 66261.101'. §66261.101(e)(3), 'Non-RCRA Hazardous Waste' states that the department may require 'representative samples of that waste' from the Facility claiming that the hazardous waste is non-RCRA hazardous waste. Therefore, the 'Clean Debris Rule' is not applicable and representative confirmation sampling of all equipment should be conducted before being shipped off-site.

2. Section 2.3.2, Neighboring Wells, Page 3: This section should include a discussion on the inactive production well located on-site. In addition, Exide should discuss the active production well located at 3768 Bandini Boulevard, or directly across the street from the Facility.
3. Section 2.3.4, Hydrogeologic Conditions, Page 4: Title 22, Section 66270.14(c)(4)(B) requires that the contamination in groundwater in each plume of contamination be identified in terms of extent, constituents, and maximum concentrations of each constituent. Ongoing monitoring of existing wells has provided data regarding the extent, constituents, and concentrations of constituents within contaminant plumes. Therefore, there is currently sufficient data for Exide to have included a discussion on groundwater plumes in the CP. Please also see Specific Comment No. 26, below, for additional comments and recommendations on the hydrogeology.
4. Section 3.2, Closure Performance Standards, Page 5: Regulations applicable to closure performance standards were not referenced in this section. The revised CP should cite, and follow, §66265.111, 66265.112(b)(4), and 66265.112(b)(5). In addition, the CP did not include background sampling plans to determine background levels of COCs for soil, soil-vapor, soil-pore-liquid, surface water, or groundwater. Background sampling plans should be included in the revised CP.
5. Section 3.2.1, Page 5: Section 3.2.1 proposes using a tiered approach for closure. The first tier would be clean closure with no restrictions. If not clean closure, then commercial/industrial (C/I) California Human Health Screening Levels (CHHSLs) or U.S. Environmental Protection Agency (EPA) Regional Screening Levels (RSLs) would be used as cleanup levels. If levels still exceed industrial screening levels, then a risk assessment would be conducted under an industrial land-use scenario. If closure cannot be completed under these scenarios, then the Facility will close with waste in place. Clean closure may be achieved only if Exide can demonstrate to DTSC's satisfaction that any contaminant residual does not exceed background values or unrestricted (residential) screening levels listed in the CHHSLs or EPA R9 RSLs: whichever are more conservative. DTSC's Human and Ecological Risk Office (HERO) should be consulted to determine the risk to human health if contamination remains at the Facility after closure. However, this will not address the soil pore-liquid, groundwater or surface water pathways.

Exide proposes to limit cleanup to background levels for soil-vapor and groundwater only. This may be acceptable, provided that DTSC

approves their risk assessment for soil, and that the residual concentrations do not pose a risk to pore-liquid, groundwater, or surface water. This does not preclude Exide, however, from submitting plans and conducting background studies for soil, soil-vapor, soil-pore-liquid, or surface water.

On and off-site soil, soil-vapor, and groundwater data will be necessary to formulate health risk-based closure performance standards. The health risk-based closure performance standards may be used to determine the cleanup levels or goals for on-site remediation for the protection of human health. If human health-based cleanup levels are formulated by Exide and approved by DTSC, then a Land Use Covenant (LUC) must be placed on the property. The GSU defers to DTSC HERO staff on determining human-health risk-based cleanup levels

The Closure Plan is missing a statement indicating that the most recent exposure factors will be used to update the health-based limits during closure. The DTSC HERO should be consulted to determine which exposure factors should be included in the revised CP.

The Closure Plan is missing a table that lists the cleanup level (CL) of each decontaminated equipment, structure, or building. The CL should be the PQL of the analytical method. Section 3.2 states that Exide will perform cleanup to the reporting limits. However, the RLs were not provided. Table 3.1 lists flow charts on how the various plant materials will be managed during closure but did not include any actual cleanup levels (e.g., laboratory reporting limits for VOCs).

6. Section 3.2.7, Cleanup Levels for Groundwater, Page 9: Exide appears to propose placing a LUC on groundwater beneath the Site. Exide cannot place a LUC on groundwater because groundwater in the City of Vernon is determined to be of beneficial use. Groundwater plumes determined to be impacted by releases from the HWMUs shall be characterized to background levels or California drinking water MCLs; whichever are more conservative.

The CP is missing a section that describes what procedures will be used to establish background quality standards and concentration values for each proposed parameter for groundwater, in accordance with §66270.14(c)(5), 66270.14(c)(6), 66265.97, and 66265.98.

7. Section 3.8.3, CL-14 Trench Drain, Pages 23-24: Exide states that water is entering the leak detection layer at the trench drain and flows to the leak detection zone at inlet CL-14 via some indeterminate pathway and has been ongoing since at least August, 2013. Analysis

of the water in the leak-detection zone shows it to be consistently contaminated by elevated levels of lead (up to 0.977 milligrams per liter or 'mg/L'), antimony (up to 0.041 mg/L), and arsenic (up to 0.014 mg/L), oftentimes at concentrations significantly greater than their respective drinking water Maximum Contaminant Levels (MCLs). Since Exide did not list the laboratory reporting limits, other MCL exceedances for other constituents may occur. Exide states that because the concentrations are below hazardous-waste criteria, no further action is necessary other than monthly sampling. This is unacceptable and the data suggests that a release has occurred, and continues to occur, at the trench drain and/or at inlet CL-14, and may impact subsurface soils beneath these features. We recommend that Exide determine the source for the releases of contaminated liquid, determine if releases have occurred to the subsurface, and take the appropriate corrective action. We do not concur with Exide's proposal to wait until Facility closure to address this issue.

Exide's stormwater management system, which includes the trench drain, and inlet CL-14, is ancillary to Unit 46 (Pump Sump). The Pump Sump, and Units 47, 48, and 49 are all part of the Drop Out System, and is not listed for closure in the CP until all Phase 1, and possibly Phase 2, Closure activities are completed (Section 6.7, 'Stormwater Management System' Management, Page 3). This likely means that it could be several years before any action will occur to investigate this release and, in the meantime, releases of contamination will continue to occur from this unit.

Instead, we recommend that Exide take action on this issue without further delay by determining the source of the release, preventing the release from continuing to occur unchecked, determining if contaminants have entered the subsurface and if so, characterizing the nature and extent and performing the appropriate cleanup. This also means that the trench drain, the leak detection zone at CL-14, and all ancillary portions that are determined to be contributing to the release will have to be placed out of service until this issue has been resolved to DTSCs satisfaction.

8. Section 4.2.3, Utilities and Section 4.2.4, Environmental Survey, Pages 3-4: This section should note that additional soil and concrete analysis for PCB-containing transformers may be required. We recommend referencing DTSC's *Interim Guidance, Evaluation of School Sites with Potential Soil Contamination as a Result of Lead from Lead-Based Paint, Organochlorine Pesticides from Termiticides, and Polychlorinated Biphenyls from Electrical Transformers*, dated June, 9, 2006, for information regarding PCBs and sampling. Please also see

DTSC's *Risk Assessment of Polychlorinated Biphenyls at Hazardous Waste Sites*, dated March, 2003, for additional information.

9. Section 4.3.20, Building Deconstruction, Page 28: Unless Exide can first demonstrate that the concrete is not contaminated, we do not concur with Exide's proposal to backfill "the Lower portions of the Reverb Furnace Feed Room Building, the Smelter Building, the RMPS Building, and the Baghouse Building". The original intent was to backfill using crushed concrete. This has now since been rescinded by Exide. Concrete chip and core sampling should be completed in the lower areas prior to backfilling with clean fill soil. Otherwise, these areas will be considered to be waste left in place and will need to be managed as a hazardous-waste landfill.
10. Section 4.4, Closure of Former Units, pages 40-41. This section indicates that any sampling of soil and concrete of these former units will be addressed under corrective action.

Exide should be made aware that DTSC required post-closure care of these tanks in our letter dated June 17, 2011 ('Acknowledgement of Partial Closure Notification North Acid Storage Tank Units 64 and 65') where we stated that the former tanks are considered at that time to be closed with waste-in-place, and subject to sections 66265.197(b) and 66265.310 for post-closure care requirements that apply to landfills. The letter also stated that "the evaluation of any wastes in soils at the subject units and possible remediation shall be addressed as part of post-closure care".

11. Section 5.2.2.7, Furnace Brick, Page 6: Exide states that they wish to dispose of 'new/unused brick' from the reverb and blast furnaces as 'non-hazardous for re-use at another facility'. As discussed earlier in Specific Comment No.1, under Title 22, a material is assumed to be hazardous until the Facility determines if it is hazardous or non-hazardous. Therefore, appropriate sampling will be required following decontamination of the 'unused' brick before a decision could be made on how it is to be managed.
12. Section 7.0, Confirmation Sampling and Management of Decontaminated Tanks and Equipment, Pages 1-6: Please note there are six pages in this section, not four. Exide should include a statement in this section that 'confirmation sampling is required for all equipment, structures, and buildings'. According to Section 3.7 of the Permit Writer Instructions for Closures, the purpose is to 'confirm that equipment, structures, and buildings have not been or are no longer contaminated with hazardous substances'. Please note that §66265.112(b)(5)] also requires confirmation sampling. The Facility

needs to demonstrate that, through confirmation sampling, the closure performance standards (§66265.111) have been met. As we have already noted, we do not concur with Exide's approach for not performing confirmation sampling on tanks and miscellaneous units intended to be shipped out of state or for recycling.

13. Section 8.0, Decontamination Procedures for Containment Structures and Buildings, Pages 1-7: Please note that there are seven pages in this section, not four. As previously noted, the Facility needs to demonstrate that, through confirmation sampling, the performance standards have been met. As we have already noted, we do not concur with Exide's approach for not performing confirmation sampling on tanks and miscellaneous units intended to be shipped out of state or for recycling.
14. Section 8.4, Building Gutting, Pages 4-5: As noted earlier in Specific Comment No. 10, lower floors will need to be addressed. Additional discussion on how the lower floors will be decontaminated, sampled, and gutted, should be included in this section.
15. Section 9.0, Confirmation Sampling of Decontaminated Containment Structures and Buildings, Pages 1-4: Exide should include a discussion on sampling of asphalt surfaces in the CP. For instance, Unit 103, Trailer Staging Area, is paved with asphalt. Figure 9.1, 'Confirmatory Soil and Soil Vapor Sample Locations', shows 24 soil boring locations laid out in a grid pattern over the Unit. However, it is unclear if Exide plans on collecting asphalt samples for analysis from this unit, and how any asphalt that exceeds the closure performance standards will be managed.
16. Section 9.2, Metal Surfaces, Page 1: As we have already indicated, 'visually clean' is not an adequate confirmation of the effectiveness of the decontamination process. This section should be revised to include confirmation wipe sampling following the approach provided in Section 7.2, 'Wipe Samples'.
17. Section 9.6, Analytical Test Methods, Page 3: Exide should include pH and sulfate analyses for all concrete and asphalt chip/core/soil/soil-pore-liquid, and groundwater samples.
18. Section 10.2.4, Former Unit Sampling, Page 4: Confirmation sampling for former or 'closed' units should be conducted during closure. Sampling adjacent to the units or 'along the secondary containment wall' only is unacceptable. Confirmation sampling (concrete and/or asphalt chip/core/soil/soil-vapor, and possibly groundwater) is required

beneath each and every HWMU, former or not. Please also see our comment on Section 4.4, provided earlier in this memorandum.

19. Section 10.3.1, Soil Sample Collection, Pages 4-5: Homogenization of soil samples is not recommended. Instead, discrete samples should be collected for all samples. In addition, we recommend the use of stainless-steel slide hammers for the collection of soil samples, in particular for VOC analysis, instead of collecting soil samples from a hand-auger.

Exide should also specify that they will follow EPA Method 5035 protocols and DTSC's *Guidance Document for the Implementation of United States Environmental Protection Agency Method 5035: Methodologies for Collection, Preservation, Storage, and Preparation of Soils to be Analyzed for Volatile Organic Compounds* (DTSC Method 5035 Guidance), dated November, 2004.

These comments should constitute global changes in all applicable sections that discuss soil sampling in the revised CP and in particular the Sampling and Analysis Plan (SAP), included in Appendix A.

20. Section 11.2, Tank Foundations, Page 2: Exide should remove the reference to 320 milligrams per kilogram (mg/kg) as the cleanup number for lead for tank foundations and pedestals. The 320 mg/kg may be used as screening value but may not be the final lead cleanup number. What is more, lead is not the only COC but was discussed in this section as if this was the case. Furthermore, use of 320 mg/kg as a screening value for lead may result in leaving contaminated concrete in place, and therefore would not be considered to be clean closure without restrictions. Confirmation sampling, as listed in Table 10.1 ('Sample Analysis Summary') should be completed for all COCs, not just for lead.

21. Section 11.3, Building Deconstruction, Pages 2-7: All sumps should be removed following their use as waste management devices when Phase 1 and 2 activities are complete. This includes all trenches, floor drains, and, potentially, lower levels (utility corridors, tunnels, basements, subfloors etc.). Concrete floors (including lower levels) and foundations may remain in place provided that Exide has demonstrated that they are not contaminated above the closure performance standards. However, the City of Vernon (The City) requires removal or deconstruction of footings, foundations and similar features up to 10 feet below grade. What is proposed by Exide would seemingly allow Exide to leave behind and bury subsurface features like lower floors, basements, and foundations. This appears to conflict with the City's requirements. Exide should submit, as part of the

Closure Report, a surveyed plot showing the locations, and thicknesses, of all floors, subfloors, and foundations that are to remain in place at the time of closure.

22. Section 16.2, Surface Impoundment (SI), Page 9: Instead of presenting an in-depth discussion that Exide intends on putting together a 'good-faith' effort to reduce, or eliminate, the contamination that likely occurs beneath the impoundment, Exide states that if "soil cannot be readily removed", they will backfill and cap with waste in place and no proposed treatment. Section 22 discusses contingent post-closure monitoring and a 30-year post-closure care monitoring period. However, given the nature of the contamination that likely exists at the SI, we believe that the period of monitoring will likely exceed the 30-year post-closure period, and may need to be extended significantly. Therefore, leaving waste in place should be the option of last resort.
23. Section 16.3, Soil Removal Procedures, Pages 2-3: Figure 16.2, 'Conceptual Excavation Plan' shows soil excavation for all HWMUs except for Units 78 (SI) and 103 (Trailer Staging Area). Exide cites 'physical constraints' for their reason to not excavate the SI and 'this historic metals processing area will be addressed during corrective action' for the Trailer Staging Area. Exide should be aware that historic operations from a SWMU should not preclude them from determining if a release occurred from an operating HWMU that was placed over a SWMU.
24. Section 16.3.3, Soil Removal and Management, Pages 4-5: As noted earlier in Specific Comment No. 22, all building materials may need to be removed to at least 10 feet below grade. Any building materials below 10 feet bgs may be left in place, provided that the performance standards are not exceeded. Any footings or material left in place not meeting the City's, or DTSC's, requirements will be considered to be waste in place and will need to be managed as a RCRA-landfill and all applicable Title 22 regulations for care and management of hazardous-waste landfills.
25. Section 16.6, Surface Impoundment Restoration, Page 9: Under the scenario presented earlier in Section 16.2 ('soil cannot be readily removed'), Exide proposes to backfill the SI with crushed concrete and cap with waste in place. Recently, Exide indicated they would remove their proposal of reusing concrete at the Facility for backfill material. However, the GSU surmises that they still wish to backfill the SI (presumably using import fill material) to grade and cap with waste in place. As noted above, monitoring may be significant and may extend well beyond the 30-year period.

In addition, the lack of detail in the CP on how Exide intends on determining if releases occurred from the SI and, if so, to what extent suggests to the GSU that they have already jumped ahead to closing the unit as a hazardous-waste landfill. Exide needs to show good faith that they intend to perform an evaluation of the SI and perform feasibility study to determine if the SI could be clean closed before they jump to already petitioning DTSC to closing with waste in place. This applies in general principle to all other units, former or current, at the Facility.

All hazardous wastes not removed during closure are subject to the requirements of §66265.117, Post-Closure Care and Use of Property, as well as articles 6, 11, 12, 13, 14, and 16 of Chapter 15.

Exide should not be inserting conditions for excavation into the CP. The assumption that should have been presented is that all HWMUs will be removed and all soil impacted above the performance standards or cleanup levels excavated. We note that Section 16.3 states that no excavation is 'assumed' for the SI. Therefore, it appears that Exide has already made the determination that they do not intend to perform an excavation at the SI, but this section presents this as if soil removal may still be an option provided that soils can be readily removed. We recommend revising Section 16.3 to include soil removal at Units 78 and 103.

26. Section 22.3.1.1, Hydrogeologic Conditions, Page 3: As previously noted in our comment on Section 2.3.4, the CP does not discuss the contaminant plumes, or the possible sources, nor identify the wells that will serve as point-of-compliance (POC) wells, or even the need for additional wells. In fact, the CP assumes that the existing well network is sufficient to comply with article 6 monitoring requirements for the SI and other units closed with waste in place without providing adequate demonstration. The POC wells should be defined for each specific regulated unit, along with a rationale for each POC. The POC is defined in §66265.95.

As required in §66270.14(c)(5) and 66265.97, the CP should have provided a description of the existing groundwater monitoring wells [§66270.14(c)(5), 66265.97]. This should include a tabulated summary of well depths, screen intervals, and other well construction details.

Given the complexity of groundwater beneath the Site, GSU recommends that Exide complete and submit a site-specific hydrogeological conceptual site model (HCSM) to DTSC. The HCSM should include discussions regarding our current understanding of the

site hydrostratigraphy/hydrology, identify the contaminants and their sources (if known), and list the outstanding data gaps.

27. Section 22.3.1.2, Groundwater Sampling, Pages 3-4: Exide states that 14 groundwater monitoring wells will be included for post-closure monitoring. Exide does not provide a rationale for why some wells were selected for post-closure monitoring while others were not. Exide should note that out of the 14 wells listed, two are dry (MW-11R and MW-15) and only 1 well (MW-10R) is located in the North Yard. Furthermore, saturation of the perched zone appears to be waning. Exide should provide a more realistic assessment of current groundwater conditions at the Site.

Furthermore, should the HWMUs be closed as RCRA landfills, it is likely that additional wells will be required for post-closure monitoring. In fact, we already have confirmed one release from the Containment Building (CB). DTSC has recently required Exide to install additional monitoring wells around the west and south sides of the CB. These wells should be included in the post-closure care monitoring. In addition, a release appears to be ongoing at CL-14. As part of the revised CP, Exide should also submit a Groundwater Monitoring Plan for the wells per 22 CCR Sections 66265.91, 66265.112(b)(5).

The CP should have included several water quality monitoring program documents [i.e., Monitoring and Sampling Plans (MSPs or SAPs) and Quality Monitoring and Response Plans (QMRPs), as required in §66265.91 and §66265.97, for:

- 1) Groundwater (GWMSP and GWQMRP).
- 2) Surface water (SWMSP and/or SWQMRP).
- 3) The unsaturated zone (soil-pore gas and soil-pore liquid: SPGMSP and/or SPGQMRP for soil-gas and SPLMSP and/or SPLQMRP for soil-pore-liquid).
- 4) These documents should describe, among other things, groundwater well/vapor probe/leak detector borehole drilling, construction, and decommissioning, statistical methodologies, sample acquisition, preservation, quality assurance and quality control (QA/QC), list of COCs, water quality protection standards (WQPS), detection limits, water-level measurement, appropriate sampling and analytical methods, transport, topographic contour maps, surface flow maps, and reporting requirements for groundwater, surface water, and the unsaturated zone for the

impoundment, the CB, and the stormwater management system, or more specifically, CL-14.

- 5) As indicated above, the soil-gas, surface water, and soil-pore-liquid documents may be consolidated under one 'umbrella' document (e.g., QMRPs) for these three media. However, we recommend separating groundwater into a GWMSP and a GWQMRP for added flexibility due to ever-changing groundwater sampling methods, updates to the hydrogeological conceptual site model, etc. GSU recommends that we be allowed to review and comment on all water quality monitoring program documents when they are submitted in the next revised CP.

28. Section 22.3.2, Soil Pore-Water, Page 4: Exide mentions only the SI for soil pore-water monitoring as if that is the only HWMU with a release. Exide should include the CB since this unit was reported to have had a release. In addition, it appears that CL-14, and the associated trench drain, may likewise have had a release or an ongoing release. Therefore, article 6 vadose-zone monitoring will likely be required for these additional units, and not just the SI.

29. Section 22.3.3, Soil Vapor, Page 5: This section fails to state that background levels will be determined. Instead, Exide proposes to use C/I CHHSLs as cleanup levels instead of screening levels for 'buildings constructed with engineered fill'. C/I CHHSLs may be used for screening levels, but background concentrations, which may be lower, should be used instead.

30. Figure 2.3, Monitoring Well Locations: This figure shows locations for wells SI-1, SI-3, and SI-4. Please note that these wells, while approved by DTSC, have not yet been installed. This distinction should be noted on the figure.

31. Appendix A, Sampling and Analysis Plan: The GSU has several comments on the Sampling and Analysis Plan (SAP). These are as follows:

- 1) Section 2.4.2, Site Hydrogeology, Page 4: This section describes the depths and thicknesses of the Exposition and the Gage aquifers beneath the Site as if this data is known. Exide does not have site-specific data for these aquifers, therefore, this section should be revised so that this is clearly a data gap that may be completed during RFI activities under corrective action or during closure.
- 2) Section 3.0, Project Data Quality Objectives, Pages 1-9: The 'project' data quality objectives (DQOs) provided herein are not project-specific. They are also more related to data validation and

evaluation than meeting project-specific performance goals for closure. We recommend that Exide use the RFI DQOs as a template for developing closure-specific DQOs.

- 3) Section 3.1, Project Definition, Page 1 (2nd full paragraph): We recommend that Exide remove the 'or' from the "and/or" for soil sampling at each former unit. As we have already noted, soil sampling shall occur beneath, and directly adjacent to, each HWMU. This includes any and all former, inactive, 'closed' HWMU. Furthermore, soil-vapor sampling will occur in at least one location beneath each unit.
- 4) Section 6.7.3, Hollow-Stem Auger Drilling, Page 5: Given the recent issues with dust-generation using hollow-stem-auger (HSA) drilling, we suspect that, with the possible exception of drilling indoors under negative-pressure conditions, that use of HSA will be somewhat limited. We recommend including a description of roto-sonic drilling in the SAP.
- 5) Section 6.7.4, Soil Sample Retrieval, Pages 5-6: Soil samples collected for VOC analysis should be collected and preserved following EPA Method 5035 and DTSC Method 5035 Guidance.
- 6) We suspect that concrete chip and core sampling will occur at each soil sample location. However, this is not clearly indicated in the SAP. We recommend modifying Figure 9.1, Confirmatory Soil and Soil Vapor Sample Locations, to show that these locations will include hardscape sampling (concrete and asphalt as dictated by Site conditions).

32. Appendix E, Topographic Survey: The topographic survey, dated February 28, 2006, is significantly outdated as it does not show all of the additions made after the survey was conducted. For instance, the survey does not show the West Yard Truck Wash (Unit No. 87) or the truck scale located in the West Yard. It also does not show any of the groundwater monitoring wells installed and sampled after 2006 (i.e., SI-1, SI-5, MW-9R, MW-10R, MW-11R) or the upgraded stormwater system. A new survey should be completed and included in the revised CP.

33. Figure 2.4, Active Production Wells, and Appendix N, Well Location Map: These figures are missing 'BAND2' (WRD I.D 200148, State Well I.D No. 02S13W12P004). According to WRD's well database, this is an active, privately-owned production well located at 3768 Bandini Boulevard and falls well within ¼-mile radius of the Exide Facility. The location of this well should be determined and identified on this figure. Exide should also show the location of their own inactive production well on the Well Location Map. Please note that Section 3.10 of the Permit Writer Instructions for Closures recommends that a facility show all known wells in their Closure Plan.

34. Appendix Q, Stormwater Pollution Prevention Plan: The Stormwater Pollution Prevention Plan (SWPPP) is dated January, 2014, is out-of-date, and should be revised to reflect the actual current conditions. For example, the SWPPP lists Mr. Edwin Mopas as the SWPPP team leader but he is no longer employed by Exide. The SWPPP also does not take into account the Facility closure. All other associated documents should be revised appropriately.

Questions regarding this memorandum should be directed to Todd Wallbom at (818) 717-6622.



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Governor

MEMORANDUM

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FROM: Katherine Gould, P.E. *KMG*
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DATE: June 15, 2015

SUBJECT: CLOSURE PLAN
EXIDE TECHNOLOGIES
VERNON, CALIFORNIA

PCA: 24010 Site Code – Work Phase: 300214-50 MPC: 43 - HWMP

As requested, the Engineering and Special Projects Office (ESPO) reviewed specified content of the draft Closure Plan (CP) for the Exide facility. The reviewed document was prepared by Advanced Geoservices and is dated May 15, 2015.

The objectives of this memorandum are to provide comments for incorporation in a Notice of Deficiencies (NOD) to be provided to the facility regarding technical and regulatory issues. As the facility is in Interim Status, the CP was generally reviewed with respect to regulatory requirements as found in 22 CCR 66265.110 through 22 CCR 66265.120 and additional closure and post closure requirements for tank systems, surface impoundments, landfills and containment buildings as found in 22 CCR 66265.197, 22 CCR 66265.228, 22 CCR 66265.310, and 22 CCR 66265.1102 respectively. The assignment requested the review be focused on Post Closure

requirements and Checklist Section F - Equipment and Structures Decontamination Procedure; Section G - Confirmation Sampling Plan for Containment Structures, Buildings, and Equipment; Section L - Removal Cleanup Procedures; Section O - Closure Implementation Schedule; and Section P - Closure Certification Report Requirements as defined by specified sections of the Treatment and Storage Facility Closure Plan Checklist found in Appendix A of the Permit Writer Instructions for Closure of Storage and Treatment Facilities.

The findings of the requested technical and regulatory review are presented in the comments below for incorporation in a Notice of Deficiencies (NOD) to be provided to the facility.

COMMENTS

Main Text Section Specific Comments

1. Section 1.1 – Introduction, page 1 of 6, paragraph 1, line 7 refers to 22 CCR 66265.1103 and 22 CCR 66265.603.

22 CCR 66265.1103 and 22 CCR 66265.603 are reserved and unused respectively.

Please provide reference to the correct regulations.

2. Section 1.1 – Introduction, page 2 of 6, paragraph 1, line 4 also refers to 22 CCR 66265.603.

22 CCR 66265.603 is unused.

Please provide reference to the correct regulation.

3. Section 1.2 – Closure and Corrective Action, page 3 of 6, lists a set of closure plan elements as follows:

- Phase 1 – Closure;
- Phase 2 – Contingent Closure;
- Post-Closure; and
- Contingent Post-Closure

Please revise to match changes in Sections 21 and 22 of the CP as described below.

4. Section 3.1.1 – [Closure Approach] General, page 2 of 27, second to last line states “Post-Closure is addressed in Section 21.0. Contingent Post-Closure is addressed in Section 22.0.

Comments below request revisions to these sections.

Please revise this line to reflect the changes in the preceding comment.

5. Section 3.4.2.5 – Excavation (Rule 1150), page 14 of 27, paragraph 1, line 6, states “The resulting excavation will be backfilled and resurfaced with pavement.”

The specifications for this activity are unclear.

Please specify excavation backfill material e.g. clean fill.

6. Section 6.1 – [Decontamination Procedure for Units and Equipment] General, page 1 of 5, paragraph 1, line 3 states “Decontamination water will be collected for processing in the WWTP or temporary WWTP.”

It is unclear how such water will be collected and conveyed to the WWTP.

Please include a statement describing how the decon water will be contained and transferred to the WWTP.

7. Section 6.2 – Tank Decontamination, page 1 of 5, paragraph 2, lines 3-5 state “The exterior of each former RCRA IS tank will be rinsed one time from top to bottom with a pressure washer. The goal for pressure washing for tanks not destined for disposal as hazardous waste will be a visually clean surface with no visible waste.”

It is unclear why a single exterior rinse is adequate and how visually clean is determined.

Please explain

8. Section 6.8 – Closure Equipment Cleaning, page 3 of 5, paragraph 1 states “Equipment such as ... pumps used during inventory removal and cleaning activities will also be triple rinsed with a pressure washer. The goal for cleaning is visually clean

It is unclear how visually clean is sufficient for pumps.

Please explain why a non-detect sample of pump rinse water is not appropriate.

9. Section 6.10 – Emission Control Equipment, page 5 of 5, paragraph 1 lines 2-5 state “... will be scraped and pressure washed to remove dust and dirt that can become mobilized during subsequent handling (for duct work proposed for reuse at another

Exide facility or being sent for disposal) and until a visually clean surface in accordance with the debris rule for metal ducts being sent for recycling.”

There is no mention of confirmation sampling in this section.

Please include a discussion of confirmation sampling and the use of the sampling results in the decision making process.

10. Section 7.1 – Sampling Objectives/Purpose, page 1 of 4, paragraph 2, line 3 -5 states “Confirmation sampling will not be required for tanks and equipment destined for reuse on an alternate facility (within California? Or out of state?), off-site use as furnace flux material at a secondary lead smelting facility, scrap metal recycling, or off-site disposal” .

This statement appears to be inconsistent with the prior paragraph, with the Work Breakdown Structure presented in Appendix D, with the discussion of wipe samples provided in Section 7.2 – Wipe Samples, paragraph 1 page 1 of 4 and the whole of Section 7.7 – Evaluation of Results page 4 of 4.

Please clarify and state when confirmation samples will and will not be required and correct the inconsistencies.

11. Section 7.6 – Analytical Test Methods, page 3 of 4, paragraph 1 states “Wipe samples, and equipment rinse samples will be analyzed for total metals by USEPA SW-846 Methods 6010C and 7141 and 7470, and 7199.”

Test methods referenced must be appropriate for the item or substance sampled and the Data Quality Objectives and must be consistent with the Sampling and Analysis Plan presented in Appendix A.

Please verify that sampling methods are consistent with Appendix A.

12. Section 7.8.2 – [Confirmation Sampling and Management of Decontaminated Tanks and Equipment] Emission Control Equipment, page 6 of 6, paragraph 1 states “Following gross cleaning with a HEPA vacuum, emission control equipment will be unbolted and dismantled. Equipment intended for reuse will be decontaminated with a pressure washer and shipped off-site.”

There is no mention of confirmation sampling in this section.

Please include a discussion of confirmation sampling and the use of the sampling results in the decision making process.

13. Section 8.3 – Building Decontamination, page 3 of 7, last paragraph, lines 1-2 states
The interior walls will be cleaned first from top to bottom. The floor will be cleaned
next ...”

This statement is inconsistent with the first three lines of the first paragraph which
states “The interior walls, ceilings, floor or footprint of each building Work will
progress from top to bottom.”

Please address this inconsistency. It appears that ceilings are planned to
be cleaned first, then the interior walls followed by the floor.

14. Section 9.2 – [Confirmation Sampling of Decontaminated Containment Structures
and Buildings] Metal Surfaces, page 1 of 4 states “The effectiveness of
decontamination on decontaminated metal building walls and ceilings ... not
intended for deconstruction will be determined by visual inspection (Will have a
“clean debris surface” pursuant to the requirements of the USEPA Debris Rule (40
CFR 268.45))”

As the facility is to be closed and the operations cease, any structures remaining
in place will be reused for another purpose within the state of California and wipe
samples are required.

Please include a statement that metal walls and ceilings of buildings that
are to remain on site after closure will meet the closure performance
standard of non-detect wipe samples.

15. Section 16.5 – Restoration, page 8 of 12, paragraph 1, sentence 1, states “The void
left after removal will be backfilled using the crushed concrete from building wall
deconstruction.”

The June 2, 2015 letter from Advance Geoservices to SCAQMD and DTSC,
provides notification that Exide is changing the proposed method for managing
concrete (from reuse as onsite backfill material after crushing) to characterization
and off-site disposal.

Please revise this section regarding the use of deconstruction derived
crushed concrete as backfill material to state that imported clean soil is to
be used as backfill material. Please also similarly revise other CP
sections referencing concrete crushing.

16. Section 16.6 – Surface Impoundment Restoration, page 9 of 12 paragraph 1
sentence 1 states “In the event that contaminated soil is identified beneath the
Stormwater Surface Impoundment and that soil cannot readily be removed, the
Stormwater Surface Impoundment will be closed with waste in-place.

Please note that as this unit is a RCRA unit, if it is closed with waste in place, a post closure RCRA cap and post closure permit are required. Also, please note that a RCRA cap is required to preclude ponding of rainfall and surface run-on over the closed area and thus cannot also be used as a surface impoundment (22 CCR 66265.228 (a) (2) (C)).

Please note that it is advised that the project manager, upon receipt of a RCRA cap design, that such design should be submitted for engineering review by a licensed Civil or Geotechnical Engineer.

Please revise this section accordingly.

17. Section 16.7 – Clean Closure, page 9 of 12, paragraph 1, line 1 states “If clean closure cannot be achieved, a post-closure permit application will be submitted...”

Units closed with waste in place require a RCRA cap and a Post Closure Permit. Draft guidance for preparation of a Post Closure Permit entitled “Post-Closure Permit Application Instruction Manual” can be provided to the facility.

Please note that it is advised that the project manager, upon receipt of a RCRA cap design, that such design should be submitted for engineering review by a licensed Civil or Geotechnical Engineer.

- A. Please rename this section appropriately. This section is not about clean closure.
- B. Please expand this section by adding in line 1 after the sixth word and comma “achieved,” the statement “22 CCR 66265.197, 66265.228, and 66265.1102 respectively state that the operator shall close the tank systems, surface impoundments and containment buildings and perform post closure care in accordance with the closure and post closure requirements that apply to landfills (22 CCR 66265.310). If contaminated soil remains in place at the completion of Phase 2, a RCRA cap design conforming to 22 CR 66265.310 shall be submitted for DTSC review and approval prior to installation. Additionally,”

18. Section 16.7 – Clean Closure, page 9 of 12, paragraph 1, line 2 refers to 22 CCR 66264.1310.

This regulation does not exist.

Please provide reference to the correct regulation.

19. Section 16.11 – Capping, page 12 of 12, paragraph 1 states “The Closure Cost Estimate in Appendix I assumes that caps will be installed in the North Yard and

South Yard where waste is closed in-place as shown in Figure 16.1. The North Yard cap area is 1.26 acres, and the South Yard cap area is 3.11 acres. The cap will consist of..."

The closure plan addressed closure in phases. Phase 1 assumes soil sampling results show no impacts to soil and clean closure can be achieved without excavation. Phase 2 is proposed in the event that impacts to soil are found and excavation is required to achieve clean closure. If the excavation proposed in Phase 2 does not feasibly achieve clean closure, then closure with waste in place is contemplated requiring a RCRA cap. The Closure Cost Estimate is prepared anticipating that a RCRA cap and a post closure permit is required.

- A. Please clarify that the specifics regarding a RCRA cap for the North and South Yard is not known but is assumed for the purpose of the Closure Cost Estimate by revising the statement to say "... The North Yard cap area is assumed to be 1.26 acres, and the South Yard cap area is assumed to be 3.11 acres. The cap is assumed to consist of..."
- B. Please add a statement that the referenced Figure 16.1 is not an approved RCRA cap design and is presented only for use in developing the Closure Cost Estimate. If it is deemed necessary for any RCRA unit area to be closed with waste in place, a RCRA cap will be designed and submitted to DTSC for approval prior to installation.

20. Section 21 – Post Closure Plan. Page 1 of 3, paragraph 3, sentence 2 states "Post-closure activities apply when contaminated soils are not left in place.

If the units and soils are clean closed to background, or residential or industrial health based standards, only a Land Use Covenant (Deed Restriction) is necessary and a post closure plan is not required. The CP already addresses the preparation of a Deed Restriction (Land Use Covenant) in Sections 16.10 and 22.2.

- A. Please rename this Section 21 – Closure to Background, or Residential or Industrial Health Based Standards

and
- B. Please revise this Section 21 to address the clean closed to industrial health based standards scenario and copy or move to this section 21 the applicable portions of discussions on deed restriction presented in Sections 16.10 and 22.2.

21. Section 22 – Contingent Post Closure Plan for Surface Impoundment and Units Closed with Waste in Place. This section describes the placement of a final cover

and contingent post-closure activities in the event that closure with waste in place is necessary.

If clean closure cannot be achieved, it will be necessary to close with waste in place and a RCRA cap and a Post Closure Permit will be needed. Draft guidance for preparation of a Post Closure Permit entitled "Post-Closure Permit Application Instruction Manual" can be provided to the facility. The applicable regulatory requirements and guidance is summarized below.

When it is determined necessary to close with waste in place, a RCRA cap to cover the area of contaminated soil to be left in place will be designed and submitted to DTSC for review and approval. The cap will be designed to:

- Prevent the downward entry of water into the closed unit for a period of at least 100 years.
- Function with minimum maintenance.
- Promote drainage and minimize erosion or abrasion of the final cover.
- Accommodate settling and subsidence so that the cover's integrity is maintained.
- Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.
- Accommodate lateral and vertical shear forces generated by the maximum credible earthquake so that the integrity of the cover is maintained.
- Preclude ponding of rainfall and surface run-on over the closed area.

The RCRA cap would be installed upon DTSC approval.

Upon completion of RCRA cap installation, a Post Closure Permit Application would be prepared and submitted to DTSC. The Post-Closure Permit Application Would include a Post Closure Plan addressing the following requirements:

- Maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion or other events.
- Maintain and monitor the leachate collection and removal system which also serves as a leak detection system.

- Maintain and monitor the groundwater monitoring system and comply with all other applicable requirements of Article 6 of Chapter 14 of Division 4.5 of Title 22 of the California Code of Regulations.
- Prevent run-on and run-off from eroding or otherwise damaging the final cover.

and

- Maintain and monitor the leak detection system in accordance with Sections 66264.221(c)(2)(D) and (c)(3) and 66264.226(d) and comply with all other applicable leak detection system requirements of Chapter 14 of Division 4.5 of Title 22 of the California Code of Regulations.
 - A. Please rename this Section 22 – Post Closure and revise the sections to address the above referenced regulatory requirements for the design and installation of the RCRA cap and the preparation of the Post Closure Permit Application.
 - B. Please revise the Phase 2 activities in the Appendix D Work Breakdown Structure to address the design and installation of the RCRA cap and the preparation of the Post Closure Permit Application.

22. Section 24.2 – Period of Coverage and Release from Financial Assurance Requirements, page 1 of 2, paragraph 1, states “Within 60 days after receiving certifications from Exide and an independent professional engineer, registered in California, that closure and post-closure have been accomplished in accordance with the approved closure plan, DTSC shall no longer require that Exide maintain financial assurance for closure of the Vernon facility.”

Note that financial assurance for post closure will be governed by the post closure permit required when a RCRA unit is closed with waste in place.

Please remove the reference to post-closure from line 2 of the subject paragraph.

23. Figure 16.1 – Contingent Closure Cap, is referenced in Section 16 and is discussed above regarding Section 16.11.

This cap does not meet the requirements of a RCRA cap. However, it is used as a reference in the Closure Cost Estimate in Appendix I.

Please note on the figure that it is not an approved RCRA cap design and is presented only for use in developing the Closure Cost Estimate.

Appendix Specific Comments

24. Appendix A – Sampling and Analysis Plan, section 4.2, page 2 of 4, paragraph 1, line 3 directs the reader to Section 4.3 in reference to core sampling.

However, core sampling is discussed in Section 4.4.

Please revise.

25. Appendix A – Sampling and Analysis Plan, section 4.5, page 3 of 4, paragraph 2, sentence 1 states: "Soil sampling will be collected along the storm water system at locations where subsoils were visually impacted ... by pipe leakage along the bottom of the excavation during removal of the original storm water system piping ...".

Those "locations where subsoils were visually impacted ... by pipe leakage along the bottom of the excavation" are now buried and the proposed sample locations cannot be visually determined or directly accessed for sampling.

Please specify how the sample locations are to be determined and specify the number and location of these samples. Please include supporting rationale and reference documentation in your discussion

26. Appendix A – Sampling and Analysis Plan, section 6.3 Wipe Samples, page 1 of 9, paragraph 1, line 2 indicates wall areas will be sampled using a grid system.

This is not a biased sampling method and may not be representative of the condition of the sampled surface.

Please discuss why a biased sampling method will not be used.

27. Appendix A – Sampling and Analysis Plan, section 6.3 Wipe Samples, page 1 of 9, paragraph 1, line 3 "The area will be sampled with a pre-moistened gauze square."

It is not clear with what the gauze will be moistened or why such a solvent was selected.

Please indicate what solvent will be used to pre-moisten the gauze and why such a solvent is appropriate.

28. Appendix A – Sampling and Analysis Plan, section 6.6 Core Samples, page 3 of 9 Core sampling is discussed.

Specifics regarding core sampling are provided except for core sample diameter.

Please indicate the diameter of the core samples to be taken.

29. Appendix D – Unit Descriptions and Work Breakdown Structures, provides a detailed description of each unit and an abbreviated ordered list of cleanup activities for the unit and the area within which it is found.

There appear to be discrepancies between the ordered list of tasks presented in Appendix D and the discussion of work steps described in the text. For example, Appendix D Work Breakdown Structures lists include wipe samples as a step in the closure process for most of the units yet an interpretation of many areas of the text could mean that wipe samples are rarely used this discrepancy implies inconsistencies regarding final disposition.

Please reconcile.

30. Appendix D – Unit Descriptions and Work Breakdown Structures, Sometimes a decontamination procedure is described as “pressure wash” and sometimes a decontamination procedure is described as “power wash”.

The use of different terminology for similar concepts is confusing.

Please define these activities so the reader can discern the difference.

31. Appendix D – Unit Descriptions and Work Breakdown Structures, Unit 5 Battery Dump Bin Sump has no decontamination procedures listed.

Decontamination procedures are generally listed for each unit throughout Appendix D

Please explain.

32. Appendix D – Unit Descriptions and Work Breakdown Structures, Unit 51 Truck Wash Sump has no decontamination procedures listed.

Decontamination procedures are generally listed for each unit throughout Appendix D

Please explain.

33. Appendix D – Unit Descriptions and Work Breakdown Structures, Units 81, 82, 83, 84, 85, 86, and 88 are not found.

When many of the 103 RCRA units are addressed in a CP section or appendix, yet only a few are missing from the discussion without explanation, the CP appears incomplete and confusing.

Please explain why some units are not addressed in Appendix D.

34. Appendix G – Engineering Controls Plan, Section 2.0 Engineering Controls for Liquid Infiltration , This section describes activities to clean and seal floors and sumps prior to wet decontamination.

However, the main text of the closure plan does not discuss this practice.

Please explain.

35. Appendix R – Spill Prevention Control, Attachment 3, Checklist 1 – Annual Comprehensive Site Compliance Evaluation, Materials Storage Tanks. The first question is phrased so the answer for a safe condition is “No” while all the other questions on the list are phrased so a safe condition answer is “Yes”.

The inspector is required to explain and mitigate any condition identified on the checklist at a No. This would compel action for a safe condition and allow for inadvertent non action for an unsafe condition.

Please rephrase the question on the checklist such that the safe condition answer is “Yes”. For example, “Are tanks free of rust, leaks, or signs of structural failure?”

General Comments

36. Closure Plan “Chapters” are numbered as Page x of y starting from page 1 for each chapter.

Many sections have page numbering errors as they are longer than represented in the page numbering header.

Please update the page numbering in each section of the CP.

37. Management of tanks, equipment and deconstruction material appears unclear and inconsistently presented throughout the document with respect to the terminology used and the determining factors applied to the decision process.

The most comprehensive description of the approach to be used to manage tanks, equipment and deconstruction material is found in Table 3.1. However, the terminology used is not defined in the table nor is it defined in any text wherein the table is referenced. Phrases such as “clean debris surface” and “visually clean of residue” are used, appear to mean the same thing, and can be interpreted differently by different people. What is clean to one person may not be clean to another. So how can clean be used as a standard for decisions? If these words are used interchangeably it raises a concern that words such as re-

use, recycle, and dispose are used interchangeably. If something is used as furnace flux at a secondary lead smelter, does the writer consider that re-use or recycling? "Deconstruction – Metal Debris" can be recycled off-site. Some of this "Deconstruction – Metal Debris" is anticipated to be piles and piles of good sheet metal and construction beams that can be used as is – if it is clean enough. Is it possible that some lead contaminated sheet metal can be "recycled off-site" to be used, as is, to construct a temporary school room?

Table 3.1 is first referenced in Section 3.2 - Closure Performance Standards with one sentence: "Management of tanks, equipment and deconstruction material is summarized in Table 3.1". This sentence stands alone following an extensive discussion of closure performance standards for soil. The issue is next discussed in Section 3.2.3 – Cleanup Levels for Containers, Tanks, and Ancillary Equipment without reference to Table 3.1. Furthermore, Sections 7 and 9 concerning confirmation sampling and management of decontaminated tanks and equipment, and containment structures and buildings respectively make statements that appear to be contradictory to those in Section 3.2.3 and Table 3.1.. Additionally, the work breakdown structure provided in Appendix D – Unit Descriptions and Work Breakdown Structures indicates a much more extensive use of wipe sampling than that indicated in the text or Table 3.1. Appendix D also uses new phrasing not found elsewhere such as "Disposal – off-site recycling". There seems to be confusion regarding planned destination and re-use of tanks, equipment and deconstruction material and when wipe samples, or any type of confirmation sampling, is required.

- A. Please add notes to Table 3.1 defining, for the purpose of the closure plan, the terms and phrases used in the table.
- B. Please discuss and explain Table 3.1 in Section 3.2.3 and define the terms used in the table. For example, "Clean debris surface" per 40 CFR 268.45 means the surface, when viewed without magnification, shall be free of all visible contaminated soil and hazardous waste except that residual staining from soil and waste consisting of light shadows, slight streaks, or minor discolorations, and soil and waste in cracks, crevices, and pits may be present provided that such staining and waste and soil in cracks, crevices, and pits shall be limited to no more than 5% of each square inch of surface area.
- C. Please clarify in Sections 7 and 9 the decision process for specific final destinations of tanks, equipment and deconstruction material and the need and use of confirmation sampling in that process.
- D. Please conform the discrepancies found between the text and the work breakdown structure regarding wipe sampling and unit destination

described in Appendix D to the terms as defined in Table 3.1 and Section 3.2.3.

- E. Please provide a list of units planned for re-use recycling or disposal within the state of California.
- F. Please provide a list of units subject to wipe sampling.

Additionally, it seems ok at first to allow tanks and equipment to remain on site and cleaned to a "clean debris surface" standard without confirmation sampling as they will be used to process closure activity waste. It is not necessary to clean a tank and obtain a non-detect wipe sample in order to turn around and put the same contaminants back into the tank to process closure derived waste. However, the CP does not address what happens to this unit when closure activities are completed. If it is allowed to remain on site cleaned to a "clean debris surface" standard it is, in effect, being re-used in California without having met the associated non-detect wipe sample standard. The same can be said about deconstruction metal debris that remains on site having met the clean debris surface standard but not having been wipe sampled.

- G. Please include a discussion regarding the confirmation sampling and the destinations of tanks, equipment and deconstruction material allowed to remain on site during the closure process.

38. The document, in general was well written and complete. It was written in a concise format requiring cross referencing facilitating the review and use of the hard copy. The electronic copy was a PDF of the same document divided up into PDF files according to file size. As the document was scanned or converted, the program provided sequential page numbers for the whole document, divided the document into files of reasonable size, and labeled each file by the range of page numbers provided automatically.

Thus the electronic version of the CP proved difficult to review as the document was cumbersome and it was difficult to find figures, tables, or appendices referenced in the text.

- A. Upon revision and resubmittal of the Closure Plan, please provide links in the electronic version that can bring the reader to the figure table, appendix or section referenced in the text.
- B. Also, please divide and label the files in a manner that facilitates reviewer selection of a file most likely to contain the information of interest.

39. Occasionally the CP language references "decision makers". For example Section 3.5.2 Quality Assurance Reports to Management , page 9 of 9, paragraph 2

sentence 1, "Any deviations from the plans that may have generated results inconsistent with the DQOs will be discussed with the decision-makers and users and reconciled appropriately."

The CP poses that in some circumstances the "decision makers" be consulted regarding deviations from the closure plan.

Please define the phrase "decision makers"

40. Unit 4 is not defined or discussed and is described as already closed.

As the facility is closing, all the RCRA units must be RCRA closed.

Please provide a copy of DTSC's closure certification letter for this unit. If not available, please provide a description of closure activities, unit final destination, and appropriate confirmation sampling results (a mini closure certification report). If not cleaned to background or health based standards (residential or industrial), please describe any further planned closure activities.

41. Units 11, 15, 16, 17, 18, 19, 20, 21, 22, 23, 26, 27, 28, 29, 30, 38, 39, 64, and 65 are described as previously decontaminated and removed in several areas of the report.

As the facility is closing, all the RCRA units must be RCRA closed.

Please provide a copy of DTSC's closure certification letter for these units. If not available, please provide a description of closure activities, unit final destination, and appropriate confirmation sampling results (a mini closure certification report). If not cleaned to background or health based standards (residential or industrial), please describe any further planned closure activities.

All comments and recommendations made in this document are site-specific and should not be considered as a general policy decision applicable to other sites. If you have any questions, you may contact me at (714) 484-5380 or katherine.gould@dtsc.ca.gov.

Reviewer: Robert Romero, P.E. RR³

Reviewer: J. T. Liu, P.E. JTL



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Secretary for
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Edmund G. Brown Jr.
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TO: Wayne Lorentzen, P.E.
Project Manager
Department of Toxic Substances Control
Sacramento, California

FROM: Shukla Roy-Semmen, Ph.D.
Staff Toxicologist
Human and Ecological Risk Office

DATE: June 16, 2015

SUBJECT: Review of a Closure Plan report for the Exide Facility at Vernon,
California.

PCA: 24010

Site Code: 300214-50

Background

This is a secondary lead recovery plant where lead batteries and other lead bearing materials are recycled. It is located on 15 acres of land, in the City of Vernon, California. It is bounded by East 26th Street to the north, Bandini Boulevard to the south, Indiana Street to the East and Union Pacific Storage Yard to the West. A drainage channel bisects the plant in a north-south direction, and flows into the Los Angeles River, located 500 feet south of the site. Other properties surrounding Exide include the Command Packing building, Rehrig Pacific Company, the former Honeywell facility, and Baker rendering plant. The nearest residences are located more than one-half mile to the north and south of the site.

According to Exide, the majority of the site is covered with pavement, buildings or structures, with landscaped areas comprising 0.4 percent of the property. Site features include: machine shop, maintenance and garage, raw material preparation system (RMPS), finished lead storage area, baghouse row area, furnace building, battery receiving and storage areas, cooling tower, storm water retention pond/surface impoundment, wastewater treatment system, employee facilities, engineering and security, warehouses and facility offices.

The site has been operational since 1922. Previous owners of the facility include Morris P. Kirk & Sons Inc., NL Industries, Gould, Inc., and GNB. In 2000, Exide Technologies

acquired the plant from GNB. Activities at the facility included: (1) lead acid batteries and hazardous material storage; (2) breaking and separation of spent batteries components; (3) pyrometallurgic smelting of the batteries and other lead bearing materials to recover lead and (4) wastewater treatment to neutralize sulfuric acid drained from acid lead batteries. Lead bearing materials are delivered to Exide by trucks, which are then either sent to the RMPS or battery storage area. The RMPS is a mechanized system that separates the spent lead acid components to yield separate streams of waste acid, metallic lead, polypropylene, rubber and plastic separator fluff, and lead sulfate paste. The separated lead is then fed into furnaces (reverberatory or blast). Lead collected during the recovery process is refined in kettles to produce finished products.

In 2002, a Corrective Action Consent Order was signed by DTSC and Exide. Thirty eight (38) solid waste management units (SWMUs) and thirty four (34) areas of concern (AOCs) were identified in the consent order that required further investigation. Soils, groundwater, soil vapor and dust samples were collected in several phases both on and off-site, as part of the RCRA Facility Investigations (RFI). As part of the 2013 Stipulation and Order, Exide collected dust and soils samples extending from the borders of the facility into neighborhoods located to the north and south of the site. Soils data were also collected onsite during the pipeline removal activities conducted in 2014.

A human health and ecological risk assessment (HHERA) was conducted for soils and dust data collected both on and off-site. DTSC provided major comments on the initial report, which was then revised to incorporate some of the recommendations. DTSC is currently in the process of reviewing the latest revision of the HHERA.

In March of 2015, DTSC issued a Stipulation and Order requiring Exide to withdraw its permit application, provide notice of its intent to permanently close its facility in Vernon and submit a Closure Plan. The Closure report under review is in response to that order.

Document Reviewed

The Human and Ecological Risk Office (HERO) reviewed a report titled "Closure Plan, Exide Technologies, Vernon, California". The report was prepared by Advanced Geoservices, for Exide Technologies, and is dated May 15, 2015. Comments on the report are provided below.

Scope of Review

HERO reviewed this document with emphasis on those aspects that affect the risk to human health. We assume that regional personnel have evaluated the sampling of

environmental media. Any future changes or additions to the document should be clearly identified.

Specific Comments

- 1) Section 3.2.1: The cleanup levels should be revised to replace California Human Health Screening Levels (CHHSLs) with values based upon methodology provided in DTSC's HHRA note 3. CHHSLs are no longer recommended by DTSC for use as screening levels, as some of these values are based on outdated toxicity criteria.
- 2) Section 3.2.2 to 3.2.4: The text portion of the report should be revised to provide a reference to table(s) listing cleanup levels for wipe samples. The report states that cleanup levels, for rinsates and wipe samples will be the reporting limit. Please provide a discussion demonstrating that these values either meet risk-based criteria or have been derived from RCRA regulations.
- 3) Section 3.2.7: The report should be revised to indicate that risk-based cleanup goals will be developed for groundwater if MCLs or other regulatory criteria are not available for a contaminant.
- 4) Section 3.2.8, pages 195-198: Soil gas screening levels should be derived using methodology provided in DTSC's HHRA note 3. USEPA does not provide regional screening levels (RSLs) for VOCs in soil vapor, as stated in the report. As indicated above, CHHSLs are no longer recommended by DTSC for use as screening levels.

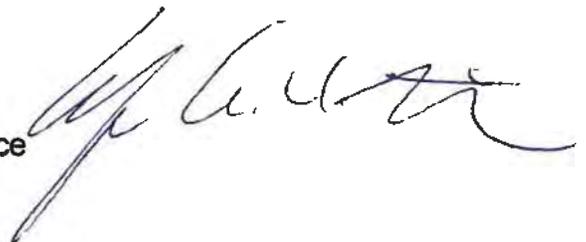
Recommendations and Conclusions

The report should be revised to replace CHHSLs with values recommended in DTSC's HHRA note 3 for cleanup activities. Risk-based screening criteria should be derived for VOCs in soil gas and for contaminants in groundwater with no MCLs or other regulatory criteria. Cleanup goals for wipe samples and rinsates should either meet risk-based criteria or be derived from RCRA regulations.

HERO notes that the decisions made in this document are site specific and should not be construed as a policy decision applicable to other sites. If you have additional questions please feel free to contact me at (714) 484-5448 or Sroysemm@dtsc.ca.gov.

Peer-reviewed by:

Efrem Neuwirth, Ph.D.
Staff Toxicologist
Human and Ecological Risk Office





Matthew Rodriguez
Secretary for
Environmental Protection



Department of Toxic Substances Control

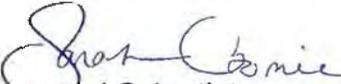
Barbara A. Lee, Director
5796 Corporate Avenue
Cypress, California 90630



Edmund G. Brown Jr.
Governor

MEMORANDUM

TO: Wayne Lorentzen, P.E.
Project Manager
Senior Hazardous Substances Engineer
Hazardous Waste Management Program
Permitting Division – Sacramento

FROM: Sarah Cromie 
Senior Environmental Scientist
Hazardous Waste Management Program
Permitting Division – Sacramento

DATE: June 15, 2015

SUBJECT: CLOSURE PLAN
EXIDE TECHNOLOGIES
VERNON, CALIFORNIA

PCA: 24010 Site Code – Work Phase: 300214-50 MPC: 43 - HWMP

The Permitting Division reviewed specified content of the draft Closure Plan for the Exide facility. The reviewed document was prepared by Advanced Geoservices and is dated May 15, 2015. The objectives of this memorandum are to provide comments for incorporation in a Notice of Deficiencies (NOD) to be provided to the facility regarding technical and regulatory issues.

The findings of the requested technical and regulatory review are presented in the comments below.

COMMENTS

General Comments

1. An Executive Summary is necessary for this document.
2. All wastes or other materials at the facility must be removed as part of closure under the Closure Plan and are not to be removed prior to DTSC approval of the Closure Plan unless the removal is specifically approved by DTSC.

3. The reasoning behind leaving the sumps in place is unclear; based on DTSC's observations of the sumps throughout the facility it is likely that soils are contaminated beneath and around the sumps. Remove all references to closing sumps in place, backfilling sumps, etc. from the document and replace with plans for removal and proper disposal of the sumps and surrounding soils.
4. The reasoning behind leaving the Units 1 (Central Container Storage Building), 2 (West Container Storage Building #1) and 3 (West Container Storage Building #2) in place is unclear; based on DTSC's observations of the units there is potential that soils are contaminated beneath and around the units. Remove all references to closing units in place from the document and replace with plans for removal and proper disposal of the units and associated concrete or other paving or sealing beneath the unit.
5. The reasoning behind backfilling any of the units or empty spaces during Phase 1 is unclear. Based on DTSC's observations of the facility it is likely that soils are contaminated beneath and around the units and buildings. Backfilling should not occur unless confirmation samples indicate the area to be backfilled is clean and passes performance standards. Remove all the references in the document to backfilling during Phase 1.

Main Text Section Specific Comments

6. Sections 3.2.1 through 3.2.9 – Clean-up levels.

Provide tables with actual values.

7. Section 3.2.7 – Cleanup levels for groundwater.

Provide details of which wells will be sampled and what they will be analyzed for. Also, capping is not an appropriate remedy for groundwater contamination issues.

8. Sections 3.2.1, 3.2.7, 3.2.8.

In each of the sections, remove "and Exide may either elect to clean to the risk-based cleanup criteria or close with a 'waste-in-place' designation and cap." Replace with a sentence that indicates that Exide will propose clean-up alternatives and DTSC will select the appropriate remedy with public input.

9. Section 3.4.6.4, page 19 of 27, "Earth disturbance is not anticipated during Phase 1 building deconstruction as work will occur above grade only; therefore, a Soil Management Plan may not apply."

This statement is inaccurate. Earlier in the document it is stated that some utilities may come out during Phase 1, which would generate soil. Additionally soil cuttings from sampling will need to be managed and it is likely soil will come out of the ground with sump or other unit removal. A Soil Management Plan is required and must be approved by DTSC as part of the Closure Plan and prior to work commencing.

10. Section 3.8.3, CL-14 Trench Drain, page 24 of 27, "Exide will analyze the liquid at CL-14 once per month to confirm liquids continue to be non-hazardous"

This sampling is required once per day. The logic that historical data shows this is non-hazardous water does not apply for closure since the closure activities represent a changed condition at the facility and there is no data that is representative of the new conditions.

11. Section 4.2.2, Implementation Plan, page 1 of 42

Insert a sentence at the end of the section indicating that the Implementation Plan will be submitted to DTSC for review and comment at least one month prior to work starting. No work shall commence without written approval of the Implementation Plan from DTSC.

12. Section 4.2.3, Utilities, page 3 of 42, 4th paragraph

Add a sentence that indicates that if any units are found to contain PCBs, concrete, asphalt, soils or other materials beneath the unit(s) will be tested for PCBs. PCB containing waste must be removed and properly disposed in accordance with applicable laws. Confirmation samples must be collected and be non-detect for PCBs to consider the area clean and free of PCBs."

13. Section 4.3.5, Container Storage Areas, page 9 of 42

Delete "(batteries and drums of battery plant scrap) awaiting processing" and replace with "(RFI drums) awaiting shipping and disposal".

14. Section 4.3.20, Building Deconstruction, page 28 of 42

Remove "The lower levels of the Smelter, Blast Furnace Feed Room, Baghouse building and RMPS buildings will be backfilled in conjunction with deconstruction using to the extent possible, crushed concrete." No backfilling is to occur during Phase 1.

15. Section 4.4, Closure of Former Units, page 40 of 42

This section states "Additional investigations and remediation, if needed, will be conducted under corrective action." These former units that were partially closed need to be covered under this Closure Plan and included for confirmation sampling. Revise the Closure Plan accordingly for all instances where these units are referenced.

16. Section 5.1, Max Inventory of Hazardous Waste, page 1 of 9

"Alternate disposal facilities may be proposed by the Contractor for approval by Exide." After this sentence add a sentence indicating that alternate disposal facilities will also require DTSC approval.

17. Section 7.4, Stormwater System Rinse Samples, page 3 of 4

Need more than "a representative sample (rinsate sample) to be collected for clean determination. Samples must be collected at all outfall points for a representative point of compliance.

18. Section 8.2, Secondary Containment Area Decontamination, page 2 of 4, 3rd paragraph

Remove "(where required)"; this caveat is not necessary.

19. Section 8.6.1, Preparation and Training, page 5 of 4, 2nd paragraph, first sentence

Add "and DTSC" after "for review by Exide and the Resident Engineer". Also please fix the page numbering in Section 8.

20. Section 9

Sample locations must be approved and collected under the oversight of DTSC; revise this section to indicate that.

21. Section 9.2

Materials intended for California or out of California recycling or disposal need to meet appropriate shipping requirements. Performance standards must be met for all units leaving the facility, regardless of destination.

22. Section 9.6, Analytical Test Methods, page 3 of 4

Sump samples also need to be analyzed for PAHs and dioxins/furans.

Appendices Specific Comments

23. Appendix G, Engineering Controls

General Comments:

The engineering controls proposed in the plan are highly dependant upon specifics that are yet to be identified by the selected Contractor for the Closure. Since DTSC is preparing an Environmental Impact Report for the Closure Plan, more specific detail is needed throughout this entire appendix to provide the information necessary to enable DTSC to prepare the EIR in accordance with California Code of Regulations, title 22, section 66265.112(b)(8).

Specific Comments:

- A. 3.4.1, 4th bullet: "The liquid runoff from areas that are wetted shall be contained or directed into drains..." This needs to be more specific, drains that ultimately lead to the WWTP and specify not into drains that go into the basement/kettle gallery area or any other area that is potentially not properly sealed and could result in further contamination in soils beneath the buildings.
- B. 3.4.1, 7th bullet: "Work will stop immediately if instantaneous wind speeds are greater than or equal to 20mph..." What is the plan for monitoring this, how often and by who is wind monitored; more specifics needed for this.
- C. 3.4.7: Permits are potentially required by SCAQMD for temporary electrical power generators; this should be confirmed with SCAQMD.
- D. 3.5.10: "The exact sequence of deconstruction of the RMPS Building, Reverb Feed Room, Baghouse Building and Smelter Building will be established during closure based on the Deconstruction Engineering Survey." This appears to be the only place the Deconstruction Engineering Survey is mentioned in the Closure Plan. This plan must be submitted for approval to SCAQMD and DTSC at least one month prior to its implementation start date. No work associated or dictated by the Deconstruction Engineering Survey shall commence prior to DTSC written approval of the Deconstruction Engineering Survey to Exide.
- E. 5.0: Revise this section to indicate the following: Variations from the Plan must be approved by DTSC. Operations associated with the variance from the Plan will stop until DTSC has approved of the variance.

24. Appendix L, Boring Logs

There is no map which indicates the locations where all these boring logs were collected.

Wayne Lorentzen
June 15, 2015
Page 6 of 6

25. Appendix Q, SWPPP

The SWPPP is written as if the facility is in operation and needs to be updated to be representative of current site conditions and Closure of the facility.

All comments and recommendations made in this document are site-specific and should not be considered as a general policy decision applicable to other sites. If you have any questions, you may contact me at (916) 255-3746 or sarah.cromie@dtsc.ca.gov.



Matthew Rodriguez
Secretary for
Environmental Protection



Department of Toxic Substances Control

Barbara A. Lee, Director
8800 Cal Center Drive
Sacramento, California 95826-3200



Edmund G. Brown Jr.
Governor

MEMORANDUM

TO: Wayne Lorentzen, P.E.
Project Manager
Permitting Division
Hazardous Waste Management Program

FROM: William P. Veile, P.E. 
Hazardous Substances Engineer
Permitting Division
Hazardous Waste Management Program

SUBJECT: REVIEW OF THE CLOSURE PLAN, EXIDE TECHNOLOGIES, VERNON,
CALIFORNIA, EPA ID NUMBER CAD 097854541

DATE: June 17, 2015

I have reviewed the Closure Plan for the Exide Technologies Vernon, California Facility EPA ID Number Cad 097854541, prepared for Exide Technologies, by Advanced Geoservices, dated May 15, 2015 and have the following comments:

General Comments

1. The Department of Toxic Substances Control is the Authorized regulatory agency to implement RCRA. California Code of Regulations, Title 22 are the appropriate regulations that should be cited throughout the Closure Plan, not 40 CFR.
2. Throughout the document the units are referred to as RCRA regulated Interim Status (IS) hazardous waste units (former RCRA IS units). This is a misnomer because not all units at the facility are regulated under RCRA, for instance the Reverbatory Furnace, Blast Furnace and Receiving and Refining Kettles are all conditionally exempt units under RCRA, but they are regulated as miscellaneous units under California Code of Regulations, Title 22, Section 66264.600 et. Seq.

3. The Closure Plan cites regulations under California Code of Regulations, Title 22, Section 66264 which are not applicable or do not exist. It appears that Advanced GeoServices replaced the 66264 regulation citations by exchanging the trailing 4 with a 5. Chapter 14 regulations do not necessarily correspond directly with the Chapter 15 regulations. For instance, 66265.603 does not exist.
4. The Stormwater Surface Impoundment unit does not just take in storm water. It has the potential to receive wastewater from many of the facility units. The naming of this unit should reflect the operating status.
5. There appears to be confusion with regards to the need for a cap. A cap will be required if the site cannot be cleaned to a risk level of unrestricted land use. Statements are made throughout referring to leaving "waste in place."

Specific Comments

1. In Section 1.1 Introduction, Advanced GeoServices incorrectly cites the authority for submitting the closure plan under California Code of Regulations, Title 22, Section 66265.112(c)(3). This citation is for the amendment of an approved plan. Exide does not have an approved closure plan, therefore the citation should refer to 66265.112(d)
2. The first paragraph of section 1.2 Closure and Corrective Action is awkward in placement. This paragraph discusses Phase 2 of Closure and should follow discussion of paragraph 2 where Phase 1 Closure is introduced. In addition, the reference to former units could lead the reader to misunderstand which units are being described or referred. The term "former" should be removed throughout the document.
3. In Section 2.0 Facility Information, there is a reference to the Facility Contact being Interim Environmental Manager Nicolas Serieys. Please verify this.
4. Section 2.3.1, the Facility topographic map does not meet the requirements of the regulations. This requirement is for the information to be depicted on one map. Multiple maps at different scales obfuscate the reader. In addition, all the information that is required is not depicted in either map. For example, the wind rose is actually located in Appendix H, wells are in another location, and locations, of the hazardous waste management units, is in yet another location. Please submit a map conforming to Cal. Code of Regs. Title 22, Section 66270.14(b)(18).
5. Section 2.3.4 Hydrogeologic Conditions. Resolution of these figures is not very good, it is very difficult to read soil types.
6. Section 2.7.4 Emission Control Equipment. The statement that Emission control equipment at the facility is not regulated by DTSC is untrue, Article 18 of Chapter 15 applies.

7. In Section 2.8.1.2 **Lead-Bearing Material**, the facility refers to supporting information regarding the weights of various lead bearing materials based on another facility's numbers. These numbers should be site specific to the Vernon facility.
8. Section 2.8.3.5 **Lead Product**, the facility withdrew its application for a permit and no longer has Interim Status, therefore the facility cannot re-melt any solidified lead in the kettles.
9. Section 3.1 CLOSURE APPROACH, 3.1.1 General. Discussions with the facility regarding, removal of concrete pads, and removal of 5 feet of soil within the limits of the hazardous waste management units, was a requirement, not an option. It now appears that AGS only discusses the removal of soil, if necessary based on soil and soil vapor testing. Also, it appears as if AGS placing the soil removal action under corrective action and not under closure.
10. Section 3.1 CLOSURE APPROACH, 3.1.1 General. The statement is made that "Deconstruction of buildings is above and beyond typical RCRA closure requirements." In this case, the deconstruction of buildings is necessary because soil contamination beneath a major portion of the total building enclosure is known.
11. Section 3.1.2 Contingent Closure (Phase 2) Excavation Rationale. DTSC expects the removal of five feet of soil beneath the hazardous waste management units as a minimum depth of soil that would require removal before any consideration would be given toward allowing the installation of a cap. In the North Area, soil was removed and clean fill was placed. Soil investigation beneath the containment building has shown that a leak has occurred.
12. Section 3.2 Closure Performance Standards. The last stand alone sentence appears to be out of place.
13. Section 3.2.3 The application of the USEPA Debris Rule (40 CFR 268.35) is inappropriate as intended in this section. This rule applies to hazardous debris destined for land disposal. If the surface is brought to a clean debris surface, the containers, tanks and equipment may be managed as non-hazardous waste.
14. Section 3.2.3. The last statement has an incorrect citation and interpretation of the definition of scrap metal. Refer to the following, and modify this statement as needed. https://www.dtsc.ca.gov/HazardousWaste/upload/SCRAP-METAL-CUPAS_NOV-1999.pdf
From **Environmental Health Standards for the Management of Hazardous Waste Final Statement of Reasons Proposed Rules and Regulations # R-89-01**
7 Title 22, Division 4.5
3/25/91: "In section 66261.6(a) (3)(B), a new phrase is being added to existing 40 CFR section 261.6(a) (3) (iv) that ;Limits exempt scrap metal to those materials

meeting the state's definition of "scrap metal" in existing section 66189.5, CCR (new section 66260.10). This definition excludes specified hazardous wastes, and metals containing hazardous wastes, from classification as exempt scrap metal. Because scrap metal, which qualifies as hazardous waste due to its inherent properties or to being contaminated with hazardous waste, is fully regulated under current state law, the exemption which appears in 40 CFR section 261.6(a) (3) (iv) is being limited to apply only to scrap metal meeting the definition of "scrap metal" in existing state regulations"

15. Section 3.2.4. What is the basis for this "cleanup level"? 66265.228(a) At closure, the owner or operator shall:(1) remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless section 66261.3(d) applies. The cleanup level is required by regulation 66265.228(a), based upon testing by Exide, the disposal facility will manage the liners in accordance with the requirements of the regulations.
16. Section 3.2.7. Please refer to the regulations on **§ 66265.92. Water Quality Protection Standard**. For each regulated unit, the owner or operator shall establish a water quality protection standard in the water quality sampling and analysis plan. This water quality protection standard shall consist of the list of constituents of concern under section 66265.93, the concentration limits under section 66265.94 and the point of compliance and all monitoring points under section 66265.95. This water quality protection standard shall apply during the active life of the regulated unit and during any compliance period under section 66265.96. **§ 66265.94. Concentration Limits.** (a) For each constituent of concern specified pursuant to section 66265.93, the owner or operator shall specify in the water quality sampling and analysis plan one of the following for each medium (groundwater, surface water and the unsaturated zone) monitored pursuant to section 66265.97: (1) a concentration limit not to exceed the background value of that constituent as determined under section 66265.97(e)(11)(A); or (2) that, at any given time, the concentration limit for that constituent will be equal to the background value of that constituent, as determined pursuant to section 66265.97(e)(11)(B).
17. Section 3.8. The statement is made that the storm-water management system will be operated in accordance with the Installation Certification Report. The Certification Report is not an operations plan it is a certification of construction.



Matthew Rodriguez
Secretary for
Environmental Protection



Department of Toxic Substances Control

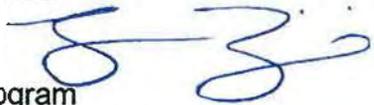
Barbara A. Lee, Director
8800 Cal Center Drive
Sacramento, California 95826-3200



Edmund G. Brown Jr.
Governor

MEMORANDUM

TO: Wayne Lorentzen, P.E.
Project Manager
Permitting Division
Hazardous Waste Management Program

From: Tamara Zielinski, P.E.
Senior Hazardous Substances Engineer
Special Projects Unit
Permitting Division
Hazardous Waste Management Program 

SUBJECT: REVIEW OF THE CLOSURE PLAN FOR EXIDE TECHNOLOGIES,
VERNON, LOS ANGELES COUNTY, CALIFORNIA (EPA ID CAD
097854541)

DATE: June 15, 2015

Documents Reviewed

The result of this review is limited to the following documents, or sections thereof:

1. *Closure Plan, Exide Technologies, Vernon, California (EPA ID. No. CAD 097854541) dated February 13, 2014 and Revised August 18, 2014, September 30, 2014, and May 15, 2015 (Closure Plan), prepared by Advanced Geoservices, West Chester, Pennsylvania for Exide Technologies, Vernon, California.*

Introduction

Paragraph 7 of the 2015 Amended Stipulation and Order for the Exide Facility, required Exide to submit to the Department an update to the October 1, 2014, closure/post closure plan that complies with California Code of Regulations, title 22 (22 CCR), section 66265.112 and 66265.118. The updated Closure Plan dated May 15, 2015, did not adequately address the requirements of 22 CCR 66265.112 for Closure Plans or 22 CCR 66245.118 for Post Closure Plans. This memorandum documents the deficiencies found in the Exide Closure and Post Closure Plans with regard to the requirements in 22 CCR 66265.112 and 66265.118.

Closure Plan

In general the closure plan lacked sufficient details required by section 66265.112 (b) *Content of plan*, to allow DTSC to determine if the Closure Performance Standards in section 66265.111 will be adequately addressed. Section 66265.112 (b) requires the Closure Plan to describe the steps necessary to perform partial or final closure of the facility at any point during its active life and to perform final closure of the facility at the end of its active life and requires the Closure Plan to include, at least:

- (1) a description of how and when each hazardous waste management unit at the facility will be closed in accordance with section 66265.111, and;
- (2) a description of how and when final closure of the facility will be conducted in accordance with section 66265.111. The description shall identify the maximum extent of the operation which will be unclosed during the active life of the facility; and
- (3) an estimate of the maximum inventory of hazardous wastes ever on-site over the active life of the facility and a detailed description of the methods to be used during partial and final closure, including, but not limited to methods for removing, transporting, treating, storing or disposing of all hazardous waste, identification of and the type(s) of off-site hazardous waste management unit(s) to be used, if applicable; and
- (4) a detailed description of the steps needed to remove or decontaminate all hazardous waste residues and contaminated containment system components, equipment, structures, and soils during partial and final closure including, but not limited to, procedures for cleaning equipment and removing contaminated soils, methods for sampling and testing surrounding soils, and criteria for determining the extent of decontamination necessary to satisfy the closure performance standard; and
- (5) a detailed description of other activities necessary during the partial and final closure period to ensure that all partial closures and final closure satisfy the closure

performance standards, including, but not limited to, groundwater monitoring, leachate collection, and run-on and run-off control; and

(6) a schedule for closure of each hazardous waste management unit and for final closure of the facility. The schedule shall include, at a minimum, the total time required to close each hazardous waste management unit and the time required for intervening closure activities which will allow tracking of the progress of partial and final closure. (For example, in the case of a landfill unit, estimates of the time required to treat or dispose of all hazardous waste inventory and of the time required to place a final cover shall be included); and

(7) an estimate of the expected year of final closure.

(8) all information necessary to enable the Department to prepare an Initial Study for the closure plan, which meets the requirements of Title 14, CCR section 15063, unless the Department has determined that the closure plan is exempt from the requirements of the California Environmental Quality Act pursuant to Title 14, CCR section 15061.

The Closure Plan did not adequately address Section 22 CCR 6625.112 (b). The following deficiencies were noted for this section.

Deficiency 1:

The Closure Plan does not include the detailed description of how and when each waste management unit will be closed in accordance with the Closure Performance Standards in section 66265.111 as required by section 66265.112 (b) **Contents of Closure Plan** (shown above). Instead section 3 **General Approach to Closure** of the Closure Plan, provides a general approach to closure. Section 4.2.2. **Implementation Plan**, of the Closure Plan proposes to develop an Implementation Plan by a contractor that will include more details regarding the closure process, but the Implementation Plan will not be reviewed or approved by DTSC (see underlined text below). This deficiency was previously identified in comments provided by DTSC on the August 18, 2014 and September 30, 2014 submittals of the Closure Plan. The Closure plan needs to be revised to include the detailed description of how and when each waste management unit will be closed in accordance the Closure Performance Standards in section 66265.111.

Exide Closure Plan section 4.2.2 Implementation Plan states:

The Contractor shall prepare an Implementation Plan for Phase 1 activities that is consistent with requirements of this Closure Plan and provides detailed information regarding execution of each work element. The Contractor shall be responsible for developing means and methods, although ultimately the

approved Closure Plan will be the standard applied to determine adequacy and compliance. The Implementation Plan shall be submitted for review and comment by Exide and the Resident Engineer. Deviations from the approved Closure Plan must be approved by DTSC prior to execution.

Deficiency 2:

The Closure Plan does not address the Closure Performance Standards in California Code of Regulations (22 CCR) section 66265.111 (shown below). Instead the Closure Plan proposes cleanup levels in section 3.2 **Closure Performance Standards** (shown below) and only provides a general approach to closure in section 3 of the Closure Plan. The general closure approach provided in the Closure Plan does not address the unit specific requirements in the closure performance standards in section 66265.111. The Closure Plan needs to be revised to provide sufficient detail for DTSC to ensure the closure of the Exide Facility will be performed in accordance with the closure performance standards in section 66265.111.

§ 66265.111. Closure Performance Standard.

The owner or operator shall close the facility in a manner that:

- (a) minimizes the need for further maintenance, and
- (b) controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated rainfall or run-off, or waste decomposition products to the ground or surface waters or to the atmosphere, and
- (c) complies with the closure requirements of this chapter including, but not limited to, the requirements of sections:

66265.197, Closure and Post-Closure Care for Tank Systems

66265.228, Closure and Post-Closure Care for Surface
Impoundments

66265.258, Closure and Post-Closure Care for Waste Piles

66265.280, Closure and Post-Closure Care for Land Treatment
Units

66265.310, Closure and Post-Closure Care for Landfills

66265.351, Closure of Incinerators

66265.381, Closure of Thermal Treatment Units

66265.404, Chemical, Physical, and Biological Treatment Units

66265.1102. Closure and Post-Closure Care for Containment
Buildings

Exide Closure Plan section 3.2 contents.

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3.2.5	Cleanup Levels for Miscellaneous Units.....	3-8
3.2.6	Cleanup Levels for Treatment Equipment other than Tanks.....	3-8
3.2.7	Cleanup Levels for Groundwater.....	3-8
3.2.8	Cleanup Levels for VOC's in Soil Vapor.....	3-9
3.2.9	Cleanup Levels for Stormwater Management System.....	3-10

Post-Closure Plan

In general the Closure Plan did not include a Post-Closure Plan. It stated Post-Closure details will be submitted later as part of a Post-Closure Permit application.

Exide has notified DTSC that the leak detection systems for the surface impoundment and containment building have failed and provided evidence of a release from the surface impoundment, storm sewer system that served as a secondary containment system for several units, and the containment building and did not have adequate secondary containment for several tank systems. Therefore a Post-Closure Plan was required pursuant 66265.118 in the 2015 Amended Stipulation and Order.

Deficiency 3

The Post-Closure Plan did not address the requirements of 66265.118. The Post-Closure Plan is limited to the following text:

Under the post-closure, the following maintenance and monitoring activities will be conducted:

- a) Maintain the integrity and effectiveness of the final cover and make repairs, if necessary;
- b) Maintain and monitor groundwater monitoring system and comply with all other applicable requirements of California Code of Regulation, Chapter 14, Article 6;
- c) Prevent run-on and run-off from eroding or otherwise damaging the final cover.

A Post-closure Permit Application containing more detailed information about the aforementioned monitoring and maintenance activities will be submitted to DTSC review

and approval. Exide will submit a post-closure permit application which will include the groundwater sampling analysis plan and Water Quality Monitoring and Response Program for post-closure units.

The Closure Plan needs to be revised include a Post-Closure Plan addressing the following requirements in 66265.118(c):

For each hazardous waste management unit subject to the requirements of this section, the post-closure plan shall identify the activities that will be carried on after closure of each disposal unit and the frequency of these activities, and include at least:

(1) a description of the planned monitoring activities and frequencies at which they will be performed to comply with articles 6, 11, 12, 13, and 14 of this chapter during the post-closure care period; and

(2) a description of the planned maintenance activities, and frequencies at which they will be performed, to ensure:

(A) the integrity of the cap and final cover and other containment systems in accordance with the requirements of articles 11, 12, 13, and 14 of this chapter; and

(B) the function of the monitoring equipment in accordance with the requirements of articles 6, 11, 12, 13, and 14 of this chapter; and

(3) the name, address, and phone number of the person or office to contact about the hazardous waste disposal unit or facility during the post-closure care period.

(4) all information necessary to enable the Department to prepare an Initial Study for the post-closure plan, which meets the requirements of Title 14, California Code of Regulations section 15063, unless the Department has determined that the post-closure plan is exempt from the requirements of the California Environmental Quality Act pursuant to Title 14, CCR section 15061.