TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

October 8, 2013

CERTIFIED MAIL

Mr. Matt Love, Director
Global Environmental Remediation
Exide Technologies
P.O. Box 14294
Reading, PA 19612-4294

Re: Comments to the Affected Property Assessment Report (APAR) and the Tier 2 Screening Level Ecological Risk Assessment (SLERA) for the Former Operating Plant, dated July 9, 2013, Request for a Revised APAR
Exide Frisco Recycling Facility, 7471 5th St. Frisco, TX 75034-5047
TCEQ SWR No. 30516, TCEQ Hazardous Waste Permit No. HW-50206; TCEQ Agreed Order Docket No. 2011-1712-IHW-E; EPA ID No. TXD 006451090; Customer No. CN600129779; Regulated Entity No. RN100218643

Dear Mr. Love:

The Texas Commission on Environmental Quality (TCEQ) has reviewed the above referenced submittal, and comments provided by other interested parties. Based on our review, the TCEQ cannot approve the Affected Property Assessment Report for the Former Operating Plant at this time. TCEQ comments are provided as Enclosure 1 and 2. In addition, the United States Environmental Protection Agency, Region 6 Office (EPA) has also reviewed the APAR, and provided comments which are included in Enclosure 3. These comments are in line with the TCEQ's. In order to prevent unnecessary delays for any additional work to be conducted under the APAR, a response to each of the comments in this letter along with a proposed detailed schedule, with interim milestones, for conducting the additional work needed for a revised APAR should be provided no later than 21 days of the date of this letter.

In accordance with 30 TAC §350.33(d), Remedy Standard B is not a self-implementing standard. TCEQ written approval of the APAR and the Response Action Plan (RAP) must be obtained before commencing corrective action; however, interim corrective measures are authorized and required wherever necessary to protect human health and the environment.

Please be aware that it is the continuing obligation of persons associated with a site to ensure that municipal hazardous waste and industrial solid waste are managed in a manner which does not cause the discharge or imminent threat of discharge of waste into or adjacent to waters in the state, a nuisance, or the endangerment of the public health and welfare as required by 30 TAC §335.4. If the actual response action fails to comply with these requirements, please take any necessary and authorized action to correct such conditions. A TCEQ field inspector may conduct an inspection of your site to determine compliance with the Final Report.

Questions concerning this letter should be directed to me at (512) 239-2361. When responding by mail, please submit an original and one copy of all correspondence and reports to the TCEQ Remediation Division at Mail Code MC-127 with an additional copy submitted to the local TCEQ Region Office. Please note that the Remediation Division has instituted a policy of sending letters via Portable Document Format (PDF) and email when appropriate. Therefore, current email addresses and the site identification information in the reference block should be included in any future submittals.

Sincerely,

for

Gary Beyer, Project Manager
Team 1, VCP-CA Section
Remediation Division
Texas Commission on Environmental Quality

GB/mdh

cc: Eric Pastor, Pastor, Behling, & Wheeler, LLC, 2201 Double Creek Drive, Suite 4004, Round Rock, Texas 78664
Sam Barrett, Waste Program Manager, TCEQ Region 4 Office, Dallas/Ft. Worth
Bill Shafford, Technical Specialist, TCEQ Office of Waste, MC-123
James Gradney, Enforcement Coordinator, TCEQ Office of Compliance and Enforcement, MC-224
Paul James, U.S. EPA Region 6 Office, Dallas

Enclosure(s):
1. Enclosure 1 – TCEQ Comments on the APAR
2. Enclosure 2 – TCEQ Comments on the Tier 2 SLERA
3. Enclosure 3 - EPA Region 6 Comments on the APAR

General Comments

1. Any area where waste is being managed on-site as part of the investigation, remediation, closure and decontamination of the facility may become a solid waste management unit (SWMU) subject to Affected Property Assessment Report (APAR) requirements if not removed and/or properly disposed in a timely manner.

2. The vertical and horizontal extent of any contamination sourcing from the site should be fully investigated both on-site and off-site and this information should be included in the revised APAR. This includes any contamination which has entered Stewart Creek and migrated downstream. See Comment No. 27 below for a more extensive discussion of this issue.

3. Please provide an interim slag and battery chip investigation and recovery plan to address slag and battery chips in and around the downstream portion of Stewart Creek within 30 days of the date of this letter.

4. The Solar Evaporation Pond and Storm Water Retention Pond should be investigated for potential releases to the environment. The integrity of the lining should be assessed. Timing for the operation and closure of these units should be discussed.

5. Please immediately implement interim measures to suppress dust emissions during windy periods from any areas which could serve as a source of contaminated particulates. See Comment 6 below for more information.

Specific Comments to the Affected Property Assessment Report for the Former Operating Plant

1. Page 1-3. **Former Fire Fighter Training Area**. Please provide information regarding the assessment and cleanup of the Former Fire Fighter Training Area, operated by the City of Frisco on Exide property.
2. Page 1-3. **PCB Waste**. During a site visit by TCEQ Region 4 Inspector, drums of PCBs were noted in the Crystallizer area. Please provide a discussion of the use of PCBs and documentation that no PCBs were released into the environment.
3. Page 1-15. Section 1.2.5.1-**Affected Property No. 1 (North Area)**. Not all samples in the North Woods Area were delineated vertically to background levels (31.5 mg/kg lead) nor were subsurface soils vertically characterized to five feet for the human health and ecological pathways. Please collect additional samples to vertically delineate all soil borings to the residential assessment level. For the human health and ecological pathways, please ensure that soil samples are collected to define the extent of exceedances to five feet (the applicable exposure interval for both commercial/industrial and ecological receptors).

   In addition, the lateral extent of contamination of the southern boundary of the North Woods Area needs to be determined. The existence of sediment samples does not preclude additional vertical and horizontal delineation to the south. Finally, unless additional testing proves that the groundwater bearing unit (GWBU) at the site meets the Class 3 Groundwater Criteria, the Tier 2 $^{GW}Soil_{Ing}$ calculation in Appendix 9, Table A9.1 should be modified to reflect the Tier 2 groundwater PCL. The residential assessment level (RAL) and critical soil PCLs should be reevaluated as part of this recalculation. (See Comments No. 31 regarding Appendix 7-Groundwater Classification).

4. Page 1-16. Section 1.2.5.3-**Affected Property No. 3 (South Area)**. As detailed in Section 4, additional investigation is required at the isolated residential assessment levels (RAL) exceedance location in the drainage ditch west of the Crystallization Unit to provide vertical delineation to the higher of the Method Quantitation Limits (MQL) or background at this location.

5. Page 2-3. Section 2.5-**Groundwater Classification**. The new data presented in Appendix 7-Updated Groundwater Resource Classification Evaluation identifies a more extensive layer of quaternary alluvium, than previously documented, that may be capable of transporting contaminants off-site, onto the adjacent VCP Tract M. Based on the information provided, it appears that the GWBU is Class 2 , unless pump tests and aquifer analysis can demonstrate that the GWBU cannot reasonably sustain the 150 gallons per day (gpd) (see Comment No. 31) pump rate. Please note that the change in groundwater classification would affect the applicable $^{GW}soil_{Ing}$ PCL and the applicable RAL and possibly the Critical PCL for this portion of the site.

6. Page 2-3. Section 2.6-**Exposure Pathways**. Exposure pathway 2 should be modified to include the on-site commercial-industrial worker and the off-site residential receptors exposed to dust from the Class II Landfill. In the last paragraph of this section it states that "continued air emissions have ceased other than what may be entrained from surface soils through fugitive dust emissions during windy periods." This is considered a potentially complete exposure pathway and Exide should include a discussion of the monitoring of fugitive particulate air emissions as it relates to this exposure pathway during windy conditions. Immediately implement interim measures to suppress dust emissions during windy periods from any areas which could serve as a source of contaminated particulates.

7. Page 2-4. Section 2.6.1-**Chemical/Physical Properties**. Please include Arsenic and Selenium and all other chemicals of concern (COCs) identified at the site in the discussion of Chemical/Physical properties.

   Also, in addition to dissolved phase transport, colloidal transport of COCs in groundwater should be discussed.

8. Page 2-4. Section 2.6.2-**Transport of COCs in Surface Soil via Surface Runoff.** More detail regarding the areal extent of the storm water collection system and its future operation should be presented. Also, a discussion of the transport of COCs in the Former Operating Plant (FOP) area as well as the operation of the French Drain interim remediation system should be discussed as part of the revised APAR. The possibility of a reduced vegetative cover due to drought, allowing for increased runoff erosion should be discussed. In addition, please indicate the location of the initial release and the French Drain on site maps.

   The high levels of contamination in flood wall samples collected in surface soils proximal to Stewart Creek may be washed into Stewart Creek. The W&M Slag and Battery Chip Sampling Reports for the west segment of Stewart Creek and the North and South Disposal Areas dated March 28, 2011, and the W&M Slag and Battery Chip Survey included in the APAR as Appendix 18 clearly indicate the presence of slag and battery chips in Stewart Creek; however, this is not mentioned in this section of the APAR. A comparison of these flood wall and slag samples to sediment, human health-and ecological PCLs in addition to Commercial/Industrial $^{Tot}Soil_{Comb}$ PCLs should be conducted.

9. Page 2-5. Section 2.6.3-**Transport of COCs in Groundwater to Surface Water and Sediments**. The TCEQ has reassessed the classification of Stewart Creek and has determined that is perennial. Therefore, more conservative surface water and sediment

PCLs are applicable. These include chronic-aquatic life, benthic, contact recreation, and incidental fishery surface water PCLs.

10. **Sulfate in Surface Water**. The Texas Surface Water Quality Standards (30 TAC§ 307, Appendix A) defines a maximum annual average sulfate level of 60 mg/L for Stream Segment 0823, Lake Lewisville. Please discuss how the sulfate levels measured in monitoring wells adjacent to Stewart Creek might affect water quality and how compliance with water quality standards could be impacted.

11. Page 3-2. Step-1 – **Target COCs**. The narrative as provided for this step appears to be primarily a defense for the selection of lead and cadmium as "primary COCs". With regard to selection of potential COCs, it should be noted that not just the initial permit, but subsequently issued permits should be followed when determining COCs to be investigated. In addition, Provisions VII and VIII of the existing Permit issued on March 30, 2001 refer to all Appendix VIII constituents which would reasonably be expected in the waste. Permit Section IX .B states that the permittee shall conduct a RCRA Facility Investigation (RFI) to determine whether hazardous waste or hazardous constituents listed in 40 CFR Part 261, Appendix VIII and/or 40 CFR Part 264, Appendix IX have been released into the environment. Also, as part of Step 3, air emissions containing sulfur dioxide was mentioned. Please discuss this as a possible source for sulfate on the site. It is noted on the MSDS form included in the APAR as Appendix 21-FRC Feed Documentation that one of the components of lead acid batteries is antimony, a minor constituent at 0.4% by weight. Please provide a detailed explanation of how antimony was screened out as a potential target COC. If sufficient justification cannot be provided, additional sampling for antimony should be conducted.

12. Page 4-2. Section 4.2.1. **Battery Receiving/Storage Building**. The soils in the shallow fill (0.9-2ft.) from soil boring for MW-31, immediately beneath the building slab indicate that a release of COCs from activities inside the building has occurred. Also, the existence of high levels of contamination documented in soil boring 2013-WMU14-1 (some of the highest levels of lead measured in the entire site, 95,000 mg/kg) appear to be associated with operations in the loading dock area, an integral part of the Battery Receiving/Storage Building. Therefore, contamination documented in this area is considered to be a release from the Battery Receiving/Storage Building and therefore subject to RCRA Corrective Action requirements.

    Also, the vertical and lateral extent of contamination in soil which exceeds the residential assessment level should continue to be assessed, such as in the vicinity of soil borings 2013-BSB-2 and 2013-BSB-9, where the vertical extent has not been determined. The discussion regarding the location of slag beneath the building does not state which soil boring samples documented the presence of slag.

    Section 4.2.1 discusses the presence of "fill zones" beneath the site. The presence of any slag is indicative of either pre-RCRA or post-RCRA waste disposal (depending on the date of disposal) and that area should be included as part of the PCLE zone. The PCLE Zone Map, Figure 11A should be updated to reflect this for the whole Battery Receiving/Storage Building. This will also hold true to any other areas containing fill which includes slag and/or battery casings, including the area around the Maintenance Building. Although aerial photographs were provided in Appendix 20 to the APAR and a reference to a June 6, 2013 email from Billy King of Exide were provided in this section of the APAR, clear documentation of the timing of disposal of the fill material was not made. Please provide a copy of the referenced email and detailed analyses of the aerial photographs to support the assertion that placement was made in the mid-1970's. This should include a discussion and

documentation of the timing of construction of the former buildings and pavement in the former operating area. In addition, the lower fill zone containing slag and battery chips should be identified as a waste disposal unit on the facility's notice of registration and should be discussed in Section 1.2.4.3 of the revised APAR regarding Notice of Registration Waste Management Units.

13. The soil samples gathered along the railroad track to the north of the Battery Receiving/Storage Building and the Battery Breaker Building as part of the July 12, 2012 Site Investigation Report (required by the May 2, 2012 EPA Order) were not included in the APAR as indicated in the introductory portions of the APAR . Please include these sample results in the revised APAR. Page 4-4. Section 4.2.2. **Raw Material Storage Building**. The lead critical PCL was exceeded in soil samples from within and adjacent to the Raw Material Storage Building, a RCRA regulated unit. The vertical extent of soil exceeding the RAL for surface soils should be defined in 2013-RRS-4A. Regarding water samples from soil borings 2012-RMSA-2 and 2012-RMSA-4, even though this might be considered "perched" water, the ability of this water to migrate either laterally or vertically to groundwater and surface water should be discussed and documentation provided. In order to characterize the nature of the water identified in borings 2012-RMSA-2 and 2012-RMSA-4 additional monitor wells should be installed in the vicinity of these borings and between the borings and Stewart Creek.

    In addition, monitor wells should be installed in the vicinity of the area between the former Slag Treatment Building and the on-site Wastewater Treatment Plant to evaluate the presence and nature of the shallow zone on this portion of the site. The new monitor wells should be screened across only the shallow saturated zone (5' or less). Please provide a detailed discussion of the interconnection between this shallow zone and the deeper groundwater bearing units at the site, including a discussion of the presence of any continuous confining unit. Finally, please provide a detailed evaluation of the potential for this shallow zone to discharge along the banks of Stewart Creek including a discussion of the crystalline material documented along the retaining wall next to the creek. Please provide detailed cross sections depicting the specific saturated and unsaturated materials encountered in borings installed to assess the Raw Materials Storage Building and the Slag Treatment Building relative to the banks of the creek to support this evaluation.

14. Page 4-5. Section 4.2.3. **Slag Treatment Building**. The vertical extent of contamination in soil which exceeds the residential assessment level should continue to be assessed, such as in the vicinity of soil borings 2013-STB-6, 2013-STB-7, 2013-STB-8, 2013-STB-11 and 2013-STB-12.

15. Page 4-6. Section 4.2.4. **Stewart Creek Floodwall**. The relatively shallow soil samples gathered as part of the Flood Wall project do not provide information as to the levels of contamination in deeper layers of fill material near the Slag Treatment Building and the Wastewater Treatment Building. Please collect additional deeper soil samples at these locations to identify the thickness of the fill material and to quantify levels of contamination beneath these buildings.

    The floodwall samples collected next to Stewart Creek (see Comment 8) should be compared to human health, sediment and ecological PCLs, not only to Commercial/Industrial total soil combined PCLs. Soil samples collected by EPA Region 6 from the Flood Wall area were determined to be hazardous. Additional sampling in the area sampled by the EPA should be conducted. This should include sampling to define the lateral and vertical extent of the soils exceeding the RAL. The EPA's May 3, 2012 Administrative Order includes a discussion of an EPA investigator's observation of "liquid which appeared to be seeping from beneath the

flood wall between the Facility process area and Stewart Creek resulting in standing water and white crystalline substance on the ground between the wall and creek." Please provide copies of the analytical data characterizing the "white crystalline substance." Please include the location of the standing water and white crystalline substance on maps of this area of the site. Additional soil samples need to be collected surrounding MW-27, both near the creek and into the plant toward 2013 –WMU16-1 in order to define the extent of contamination near 2012-FWFS-1, 2012-FWFS-5, 2012-FWFS-6 and 2012-FWFS-7.

16. Page 4-7. Section 4.2.4 **Additional NOR WMUs within the Former Production Area**. The vertical and lateral extent of contamination in soil which exceeds the residential assessment level should continue to be assessed, such as in the vicinity of WMU 14-1.

17. Page 4-9. Section 4.2.6 **North Disposal Area**. Please collect shallow soil samples across the cap of the North Disposal Area to document whether contamination exists on the surface of the cap. Also, document the cap configuration (depth, permeability, etc.) and the condition of the cap to support a decision regarding the necessity for cap repair or need for the addition of new capping material.

18. Page 4-10. Section 4.2.7. **Slag Landfill and Former Stewart Creek and North Tributary Outfall**. It appears that the plugged railroad culvert serves as a dam which retains water from the North Tributary. Please submit documentation as to whether the pond created by the plugged railroad culvert is a perennial pool. Also, investigate the potential for the migration of pond water to groundwater and possibility for migration to Stewart Creek. Investigate overland flow from the dammed pond area to Stewart Creek.

    The vertical extent of soil exceeding the RAL in the area of 2012-BY-4 and 2012-SL-1 should be defined. In addition, please ensure that a sufficient number of subsurface (greater than 5 feet) samples have been collected in the Boneyard area to characterize the PCLE zone.

    Please install 2 monitoring wells along the northern boundary of the Slag Landfill to serve as points-of-compliance and exposure wells. Discuss the relationship between groundwater in the Slag Landfill and the North Tributary, whether it is gaining or losing, and any other information regarding the movement of groundwater in this area. Please collect shallow soil samples across the cap of the Slag Landfill to document whether contamination exists on the surface of the cap. Also, document the cap configuration (depth, permeability, etc.) and the condition of the cap to support a decision regarding the necessity for cap repair or need for the addition of new capping material.

19. Page 4-12. Section 4.2.9. **Class 2 Landfill**. There is insufficient coverage of soil borings in the area surrounding the Class 2 Landfill to conclude that no contamination exists in the surface or subsurface soils. Only four samples were gathered from the northeast corner and the southwest corner of the landfill. No samples were gathered from the northwest corner, the direction of potential deposition from southeasterly winds. No soil sample results are presented from LMW-5 and LMW-17. Figure 4C-2, Geologic Cross Sections, F-F' shows a soil RAL exceedance at LMW-5. Appendix 7, Figure 4 shows soil borings SB-9-16; however, no sampling data was presented for these borings. Groundwater samples from LMW-9 indicate the presence of selenium, yet this constituent was not included in the soil sampling protocol. Please collect a sufficient number of soil borings around all sides of the Class 2 Landfill utilizing a sampling grid and sample for all potential COCs, including selenium. Samples should be gathered from the sampling interval of 0-0.5 feet to characterize surface soils for aerially deposited COCs and also from intervals from land surface to the Eagle Ford Shale to characterize surface and subsurface soil conditions and to document potential groundwater migration pathways, especially as it relates to the selenium groundwater exceedance documented in monitoring well LMW-9.

Please collect shallow soil samples across the cap of the closed landfill cells to document whether contamination exists on the surface of the cap. Also, document the cap configuration (depth, permeability, etc.) and the condition of the cap to support a decision regarding the necessity for cap repair or need for the addition of new capping material.

The Solar Evaporation Pond was not investigated for releases as part of the APAR. Please sample any sediments which may be contained within in the Solar Evaporation Pond, provide the results of an inspection of the liner of the pond to assess liner integrity, and determine if any releases have occurred to soils and groundwater surrounding it.

20. Page 4-12. Section 4.2.10. **Bail Stabilization Area**. Since the RAL for cadmium was not attained in boring 2012-BSA-3A and lead was not vertically defined in the bail stabilization area, additional samples should be taken to define the vertical extent of contamination and the lateral and vertical extent of fill material. Please provide boring logs for 2012-BSA-2, 2012-BSA-6 and 2012-BSA-7.

21. Page 4-13. Section 4.2.11. **Truck Staging Area, Administrative Building, and Maintenance Building**. Soil sampling density in this area is insufficient. Please install an additional monitoring well near the truck washing station, between the flood wall and Stewart Creek to serve as a point-of-compliance/point-of-exposure well. Collect additional soil samples in the vicinity of the Maintenance Building and Administrative Building to more accurately evaluate the boundary of the southern border of Affected Property No. 2.

22. Page 4-14. Section 4.2.12. **South Disposal Area**. Please resample well B4-R adjacent to the former small arms firing range to confirm the lead concentration. Please determine the classification of groundwater in this area.

    Please collect shallow soil samples across the cap of the South Landfill to document whether contamination exists on the surface of the cap. Also, document the cap configuration (depth, permeability, etc.) and the condition of the cap to support a decision regarding the necessity for cap repair or need for the addition of new capping material.

23. Page 4-15. Section 4.2.13. **Crystallization Unit**. Please install additional samples around the Crystallization Unit in areas where potential leaks could have occurred, such as beneath piping and valves. Reiterating Comment 2 above, during a site visit by TCEQ Region 4 inspector, drums of PCBs were noted in the Crystallizer area. Please provide a discussion of the use of PCBs and documentation as to how these PCBs were managed and the potential for PCBs to be released into the environment of the Crystallizer. Also, as documented in the July 12, 2012 SIR, the levels of sulfate in soils surrounding the Crystallizer unit are much higher than in other areas. Please discuss the source of sulfates and determine if the surface water in Stewart Creek has been affected (see Comment 9).

24. Page 4-16. Section 4.2.15. **Potential Ecological Habitat Areas**. The comments regarding the Screening Level Ecological Assessment (SLERA) for Section 9 of the APAR are included as Enclosure 2 to this letter. Please install additional monitoring wells on the north bank of the North Tributary to serve as point-of-exposure wells to intercept contaminants from the North Woods. In the South Woods, the lateral extent of soil contamination surrounding soil sample ECO-7 and ECO-7A needs to be evaluated to determine if lead contamination exists off-site in this area, and between ECO-3 and ECO-2 to further delineate the eastern boundary of this PCLE zone. It also appears that boring logs for ECO-1, ECO-2, ECO-4, ECO-5, and ECO-10 are missing from Appendix 2 – Soil Boring Logs and Monitor Well Completion Details. Please provide copies of these logs. Finally, please determine whether the sand/possible fill noted in ECO-9 is indicative of the eastern boundary of the South Disposal Area.

25. Page 5-1. Section 5. **Groundwater Assessment**. Please reevaluate the groundwater data collected at the site in comparison to the applicable Class 2 groundwater PCLs unless it can be demonstrated that the GWBU cannot sustain a yield of 150 gpd.

    Please note that groundwater samples for total selenium in the vicinity of the Class 2 Landfill from monitoring well MW-9, measured at 0.491 mg/l and 0.944 mg/l which exceeds the Class 2 groundwater standard for selenium which is 0.05 mg/l. There are J-flagged detections of selenium in monitoring wells LMW-8 and PMW-20R which indicate a possible release of selenium from the Class 2 Landfill less than Class 2 groundwater PCLs, but still indicative of a potential selenium issues in these wells which should be monitored as part of an ongoing monitoring program.

    Also, Figure 5A-3 has an improperly located potentiometric line depicting the 630 foot elevation in the vicinity of the former plant operations area. The line should be located a little further south of the MW-20 monitoring well, which has a groundwater elevation of 630.11 feet.

    Table 5C-Groundwater Geochemical Data Summary, depicts concentrations of sulfate in groundwater. Stream Segments 0823, Lake Lewisville has a prescribed maximum annual average sulfate level of 60 mg/l. Please discuss how the sulfate levels measured in monitoring wells adjacent to Stewart Creek might affect water quality and how compliance with water quality standards could be impacted. Please provide a discussion of the possible sources of the sulfate, such as leaks from wastewater near the Crystallizer, precipitates from stack emissions of sulfur dioxide, biological degradation of naturally occurring organics present in the Eagle Ford Shale, etc.

    Monitoring wells installed for investigation of sites typically included screen lengths of 10 feet or less in order to prevent sample dilution and to more accurately pinpoint discreet zones of contamination. Please provide a rationale for the use of a screen length longer than 10 ft. Please explain the reason the water level in LMW-5 is relatively lower than all other monitoring wells surrounding it, indicating a cone of depression. The Monitor Well Development and Purging Data provided in Appendix 3 to the APAR indicate that the wells were developed using a peristaltic pump run at a rate of approximately 0.1 gpm or less. In many cases despite continued development specific conductivity and turbidity measurements did not significantly decrease with development. In some cases these parameters actually increased. Please re-evaluate the methods used to develop the wells and provide alternatives for improving well efficiency and decreasing turbidity in the monitor wells.

26. Page 6-1. Section 6.0. **Surface Water Assessment and Critical PCL Development**. Please revise Section 6 of the APAR to reflect the change from intermittent to perennial. This should include recalculation of the PCLs in table 6A. The discussion in Section 6.2 states that "because Stewart Creek is an intermittent stream (and thus not a sustainable fishery) and is not used as a primary drinking water source, neither the water/fish ingestion nor the fish ingestion pathways are complete." However, since Stewart Creek has been reclassified as a perennial water body, then the risk associated with incidental fishing should be evaluated. Note that the human health water quality standard for an incidental fishery is 10 times the "fish only" value as indicated in the Texas Surface Water Quality Standards (§307.6 (d) (6)). The resulting surface water PCL for this pathway for dissolved lead is 0.0383 mg/L.

27. Page 7-1. Section 7.0. **Sediment Assessment and Critical PCL Development**. The PCLs summarized in Table 7A and the comparison in Table 7B need to be modified to reflect the change in classification of Stewart Creek from intermittent to perennial. As discussed in

Comment 8 above, W&M Slag and Battery Chip Sampling Reports for the west segment of Stewart Creek and the North and South Disposal Areas dated March 28, 2011, and the W&M Slag and Battery Chip Survey included in the APAR as Appendix 18 clearly indicate the presence of slag and battery chips in Stewart Creek. However, this is not mentioned in this section. The lead concentrations in the probable slag ranged from 11,500 mg/kg to 102,000 mg/kg in the March 28, 2011 Suspect Slag Sampling Report, Stewart Creek – West Segment. This area should be included as part of the PCLE zone and the PCLE zone Map, Figure 11A should be updated to reflect this. An investigation for slag, battery chips and impacted sediment should be conducted for the central and eastern portions of Stewart Creek on the facility and included in the Revised APAR.

The last several paragraphs of this section summarize various historical and current studies on Stewart Creek at locations downstream of the facility. Appendix 17 summarizes historical data. While much of the historical data indicates that sediment concentrations were well below the contact recreation PCL, a select few of the historical concentrations are 10 to 150 times this PCL. Since the creek has been designated as perennial, ecological PCLs for sediment are exceeded. Please reevaluate this data and revise the PCLs as appropriate. Exide must conduct additional investigation of the extent of slag, battery chips and impacted sediment and incorporate the results into the revised APAR.

28. Section 9. **Ecological Risk Assessment**. The comments regarding the Screening Level Ecological Assessment (SLERA) for Section 9 of the APAR are included as Enclosure 2 to this letter.

29. Page 10-1. Section 10.0. **COC Screening**. Please refer to Comment 11. Please explain how antimony was not selected as a potential target COC.

    Two SVOCs (benzidine and n-nitrosodimethylamine) measured in soils at levels greater than the applicable RALs but were screened out based on non-historical use. Our research indicates these compounds could have been used in dying and compounding rubber. Some of the older battery cases were made out of rubber. Rubber is listed on the MSDS sheet for lead acid batteries in Appendix 11. Please develop critical PCLs for benzidine and n-nitrosodimethylamine.

30. Page 11-1. Section 11.1 – **Tier 2 or 3 PCL Development and Non-Default Parameters**. The subsurface soil residential assessment level may need to be recalculated as part of the Tier 2 soil evaluation presented in Appendix 9, Table A9.1 due to the reclassification of the groundwater from Class 3 to Class 2. See Comment No. 31 regarding Appendix 7-Groundwater Classification, below.

31. Appendix 7 **Updated Groundwater Resource Classification**. The TCEQ's review of this section was compared to the TCEQ Interoffice Memorandum dated December 7, 2012 regarding the factors justifying a Class 3 groundwater determination. The new data presented in Appendix 7-Updated Groundwater Resource Classification Evaluation documents a more extensive layer of quaternary alluvium than previously documented and may be capable of transporting contaminants off-site, onto the adjacent VCP Tract M (VCP-MW-5, VCP-MW-6, PMW-20 R). This quaternary alluvium may extend across the entirety of Tract M, large parts of the former operating plant, and the Class 2 Landfill/North Woods area and thus would not be isolated to the west, according to TRRP -8, Section 2.8.2 Limited Hydrogeologic Extent. The map of the Distribution of Geologic Units in Colluvium/Alluvium in Figure 4 of Appendix 7 over generalizes the lithology identified at the site and therefore does not accurately depict the continuous nature of alluvium.

    Section 3.0 of the Updated Groundwater Resource Classification (Appendix 7 of the APAR),

indicates that the higher yield unit at the site is composed of gravels/sands that "occur in four isolated pockets at the Site" which are depicted on Figure 4, and that the cross sections provided illustrate the "laterally discontinuous (and thin) nature of the clayey gravels, gravels, and sands within a predominantly clay stratum." However, Appendix 7 fails to demonstrate that the units are separate groundwater-bearing units separated by a continuous confining unit or subsurface discontinuity that prevents either unit from flowing into another.

Section 2.4 Step 2 of the TCEQ's Groundwater Classification guidance document (TRRP-8) requires that a GWBU that can contribute COC's to another GWBU unit be treated as hydraulically interconnected. The monitor wells are continuously screened across all three GWBUs identified in the APAR. Although different lithologies may exhibit different transmissivities and therefore yields, 30 TAC 350.52 requires that if a GWBU meets the criteria for more than one classification, then the higher groundwater classification must be applied to the GWBU.

In addition, it is unclear how the saturated thickness of the GWBU was determined. While the static water elevation for Well B5N was not provided in the APAR, the static water level depicted on the boring log for B5N indicates a saturated thickness of approximately 8'. The same is noted of most of the wells used to classify the groundwater. Because the monitor wells used in slug testing are screened across the entire GWBU (including the gravelly clays, clayey gravels, etc.), Exide has not conclusively documented that the slug tests are only measuring the characteristics of the gravels and sands identified at the site using these wells. If the slug testing data provided will be used to classify the GWBU, please revise the calculations using the full thickness of the saturated thickness of the GWBU. Alternatively, direct yield testing can be conducted to evaluate the yield from the entire GWBU.

These same issues with saturated thickness estimates were carried through to the Calculated Well Yields provided in Table 1, Appendix 7. Well yield calculations are sensitive to the saturated thickness parameter. For instance, the groundwater elevation for MW-16S provided for six gauging events in Table 5D of the APAR indicates that the average saturated thickness in this well is approximately 15.5'. Using this average saturated thickness and the hydraulic conductivity from the slug test on this well, the yield of MW-16S is approximately 2,030 gallons per day (gpd), which is significantly above the Class 3 maximum yield of 150 gpd. However, the saturated thickness presented Table 1, Appendix 7 and used in the well yield calculation in the APAR was 2' which resulted in a calculated well yield of 65 gpd, which is well below the 150 gpd criterion.

The wells used for aquifer testing were developed using peristaltic pumps surged at rates up to a maximum of 1.4 gpm. While this is acceptable for purging a monitor well prior to sampling, TRRP 8 requires that wells used for determining groundwater classification be developed according to ASTM Guide D 5521. Although peristaltic pumps can be used to develop the wells, they should be run at a rate of 5-10 gpm. If the wells dewater during development at this pump rate, distilled water should be added to the well to prevent the well from going dry during surging efforts. Alternatively, one of the other development methods in the ASTM Guide can be used.

The available well testing data provided indicates that the GWBU is Class 2, however, the GWBU may be classified as Class 3 if Exide can clearly demonstrate that the yield is not sustainable. Since the GWBU is not ephemeral and the APAR does not make a clear demonstration that the GWBU is of such a limited hydrogeologic extent that it cannot maintain sufficient yield, the appropriate GWBU classification is Class 2. Please note that the TCEQ's Groundwater Classification guidance document (TRRP 8) should be followed in

any future aquifer testing. This includes guidance on development of monitor wells used in aquifer tests referenced in Table A-1 of TRRP 8. Specifically wells should be developed according to one of the methods outlined in ASTM Guide D 5521. In the past, the TCEQ has approved some demonstrations of lack of sustainability based on long term aquifer testing that dewaters the well in less than 8 hours using Method 2c: Well Yield by Constant Discharge (0.1 gpm) Test described in section 2.7.2.4 of TRRP. These tests have been conducted on fully penetrating wells which have been installed and developed according to guidance and are representative of the heterogeneity of the GWBU at the site. Because of the heterogeneity of the GWBU at this site and the fact that this aquifer testing method depends on dewatering the aquifer to demonstrate lack of sustainability, the results cannot be averaged across different wells (one monitor well dewaters but two others do not), wells selected for testing should be biased to represent the wells installed in areas with the highest transmissivity and saturated thickness. If the results of the wells in the most transmissive portions of the GWBU cannot sustain the 150 gpd pumping rate, then the GWBU can be classified as Class 3.

32. Page A9-1. Appendix 9, **Development of Non-Default RBELs and PCLs Recreational Surface Water PCL**. Exide proposes a contact recreation PCL for surface water in the event the site (future use) or downstream areas are used for recreation. Currently there is no TCEQ Tier 1 contact recreation surface water PCL for lead. Exide derived a value of 1.5 mg/L by scaling the drinking water standard for lead (0.015 mg/L) using the ratio between the exposure assumptions used to calculate contact recreation PCLs, with those used for residential drinking water exposure.

    TCEQ does not concur with this proposed PCL. Based on recommendations from the TCEQ Toxicology Division, Exide should use the drinking water standard for lead (0.015 mg/L) for the contact recreation PCL.

33. Appendix 9, **Development of Non-Default RBELs and PCLs**. The subsurface soil residential assessment level may be need to be recalculated as part of the Tier 2 soil evaluation presented in Appendix 9, Table A9.1 due to the reclassification of the groundwater from Class 3 to Class 2 in this area if it cannot be demonstrated by pumping tests that the GWBU cannot maintain a sustainable pumping rate of 150 gpd. (See Comments No. 31 regarding Appendix 7-Groundwater Classification)

34. Appendix 19, **French Drain Construction Report**. This report presents details on the construction of the French Drain system along the barrier wall on the southern edge of the former operating plant. Additional information is needed on the performance of the system, water level maps to depict groundwater flow into the system, gallons of water intercepted and treated, concentrations of contaminants in the water, and, most importantly, if the discharges to Stewart Creek have ceased.