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TRANSMITTAL

To: Richard Peltier, PG
VCP-Corrective Action Section
Texas Commission on Environmental Quality
Mail Code 221, Building D
P.O. Box 13087
Austin, Texas 78711-3087

Date: 08/22/2016

Re: Interim Response Action Plan (RAP)
City of Galveston Old Municipal Incinerator Site
#3 Lennox, Galveston, Texas 77551
Voluntary Cleanup Program No. 1962
CN600241376; RN102450095

Job No.: AECOM Project No. 60420789

Transmitted By: Regular Mail and E-mail to richard.peltier@tceq.texas.gov

We are sending you the following:

Copies	Date	Description
1	August 22, 2016	Interim Response Action Plan dated August 22, 2016, Old Municipal Incinerator Site (City of Galveston), Lot E, Galveston, Galveston County, Texas (one electronic copy via email and one hard copy via regular mail).
1	August 22, 2016	Interim Response Action Plan dated August 22, 2016, Old Municipal Incinerator Site (City of Galveston), Lot E, Galveston, Galveston County, Texas (one electronic copy via CD-ROM/DVD or flash drive)

Dear Mr. Peltier,

On behalf of the Texas General Land Office (GLO), please find enclosed the Interim Response Action Plan (RAP) for the above referenced site. As previously discussed, due to health and safety concerns associated with the existing dilapidated incinerator structure, this Interim RAP is submitted for TCEQ review and conditional approval in order to achieve the funding release for the proposed remedies described herein. The off-site affected properties will be addressed in a second final off-site RAP planned for 2017. If you have any questions regarding the information provided in the response to comments or need further information, please do not hesitate to call us.

Very truly yours,

Douglas E. Zarker, PG
Project Manager
Doug.zarker@aecom.com

Copies To: Mr. Jason Ybarra, Section Manager, TCEQ Region 12, Houston, TX, 1 hard copy
Ms. Maureen Mahoney – Coastal Protection Division, GLO, Austin, TX, 1 hard copy
Mr. John Simsen – Recovery Program Director, City of Galveston, TX, 1 hard copy
Project File

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
Interim Response Action Plan

Cover Page

Regulatory ID number (Solid waste registration number, VCP ID number, etc) VCP No. 1962
check one: x Initial submittal for this on-site property ___ Subsequent submittal for this on-site property
Report date: August 2016 TCEQ Region No.: 12

TCEQ Program (check one)

- [ ] Corrective Action (Mail Code 127)
- [x] Voluntary Cleanup Program (Mail Code 221)
- [ ] RPR Section (Mail Code 137)
- [ ] Superfund PRP Lead (Mail Code 143)
- [ ] Municipal Solid Waste Permits (Mail Code 124)

On-Site Property Information

On-Site Property Name: Old Municipal Incinerator Site (City of Galveston), Lot E

Street no. #3 Pre dir: ___ Street name Lennox Street type: Ave Post dir: ___

City: Galveston County: Galveston County Code: 84 Zip: 77551

Nearest street intersection or location description: Broadway and 59th Street

Latitude: Decimal Degrees (circle one) North 29°17'30"
Longitude: Decimal Degrees (circle one) West 94°50'10"

Off-Site Affected Property Information

Off-Site Affected Property Name: NA (An additional RAP will be submitted to address adjacent/off-site affected property)

Physical Address:

Street no. ___ Pre dir: ___ Street name ___ Street type: ___ Post dir: ___

City: ___ County: ___ County Code: ___ Zip: ___

[x] Check if no off-site properties affected

Contact Person Information and Acknowledgement

Person (or company) Name: City of Galveston

Contact Person: Brian Maxwell Title: City Manager

Mailing Address: 823 Rosenberg

City: Galveston State: TX Zip: 77553 E-mail address bmaxwell@galvestontx.gov

Phone: 409-797-3520 Fax: ___

By my signature below, I acknowledge the requirement of §350.2(a) that no person shall submit information to the executive director or to parties who are required to be provided information under this chapter which they know or reasonably should have known to be false or intentionally misleading, or fail to submit available information which is critical to the understanding of the matter at hand or to the basis of critical decisions which reasonably would have been influenced by that information. Violation of this rule may subject a person to the imposition of civil, criminal, or administrative penalties.

Signature of Person ___ Name, print: Brian Maxwell Date: August 22, 2016

RAP Executive Summary	ID No.: VCP No. 1962
	Report Date: August 2016

Use this worksheet to summarize the report. Be sure to complete and submit the Checklist for Report Completeness. **Attach a chronology of activities associated with the affected property.**

Briefly describe the affected property and PCLE zones, the conclusions from the assessment activities, identify any affected or threatened receptors, and describe any other major considerations taken into account when developing this response action plan. If any portion of the response action is necessitated due to an aesthetic or nuisance condition, identify the nature of that condition and identify that portion of the response action proposed to address it. If any media that contains a PCLE zone is not addressed in this RAP, provide justification.

The objective of this Interim Response Action Plan (RAP) is to attain conditional approval from the Texas Commission on Environmental Quality (TCEQ) for the expedited remediation of the Old Municipal Incinerator Site (Lot E) using currently available General Land Office (GLO) funding.

Lot E is located on Galveston Island at #3 Lennox Avenue in Galveston County, Galveston, Texas. It consists of a 4.65 acre parcel of land owned by the City of Galveston which includes the standing incinerator structure and an aboveground storage tank (AST) associated with past fire fighter training exercises conducted at the Site. No remnants of the previously labeled berm pits remain on the property. The boundary of the Site is enclosed by a six-feet-high chain link fence.

A detailed on-site investigation was previously completed and documented in the January 2016 Affected Property Assessment Report (APAR), which will be revised in 2017. Site soil samples were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs) and dioxins/furans total petroleum hydrocarbons (TPH). The chemicals of concern (COCs) reported above the critical Protective Concentration Levels (cPCLs) in surface soil are metals (mainly lead) and one polycyclic aromatic hydrocarbon (PAH) (benzo(a)pyrene at one location).

Lot E comprises only a portion of the broader Protective Concentration Level Exceedance (PCLE) Zone located in the previously mapped affected property. Per correspondence with the GLO, City of Galveston (COG), and the TCEQ, it was determined that an Interim RAP for the Lot E is an appropriate path forward in order to accelerate response actions on Lot E, due to environmental, human health, and safety concerns associated with the existing dilapidated incinerator structure and surrounding area.. The TCEQ agreed with the Interim RAP approach in an email dated May 26, 2016. Specifically, the TCEQ stated that the option for TCEQ to review and conditionally approve a RAP for the incinerator lot solely itself is feasible and one can be submitted for review.

Conditional approval of the Interim RAP by TCEQ will be required for funding to be released for this proposed remedy, which includes the demolition and removal of the dilapidated incinerator structure, the removal of the stand-alone AST, and the installation of a surface cap across Lot E.

To address affected property beyond Lot E, additional investigations are planned and will be documented in the revised APAR to be submitted in 2017. Subsequent response actions will be outlined for approval in a future Final RAP.

RAP Executive Summary	ID No.: VCP No. 1962
	Report Date: August 2016

What is the selected remedy standard for this affected property? ____ A x B

List all media that contains a PCLE zone and specify the proposed response action for each media. Indicate the type of removal, decontamination, physical control and/or institutional control action that is proposed.

Media	COCs[1]	Removal	Decontamination	Control			
				Physical Control	Modified Groundwater Response Objective[2]		
					PMZ	WCU	TI
Soil	Metals, PAHs			x			
GW	Metals, PAHs			x			

*There will be a physical control and associated institutional control. In addition, there will be a Municipal Setting Designation (MSD) certificate to address groundwater.

Is there a media that contains a PCLE zone that is not addressed in this RAP? x yes ____ no
If yes, provide justification for not addressing the PCLE zone in this RAP.

This Interim RAP only addresses Lot E and the soil and groundwater associated with it. This Interim RAP serves to accelerate the response action on-site in order to address a safety concern associated with the existing incinerator structure. The off-site affected properties will be addressed in a second, final off-site RAP planned for 2017.

On-site land use: [ ] Residential [x] Commercial/Industrial
Off-site land use: [x] Residential [x] Commercial/Industrial (check all that apply)

Is this a re-submittal or revision of a previous RAP? ____ Yes x No
If yes, explain why the RAP is being revised or resubmitted.

Were all the appropriate notifications made in accordance with §350.55? x Yes ____ No
If no, explain why notifications were not made:

[1] Specify either a specific COC or, if the response action is the same for all COCs in one type, specify the type of COC (for example, VOCs, SVOCs, metals).
[2] If a modified groundwater response objective is proposed, check the type(s) of proposed modifications.

Checklist for Report Completeness	ID No.: VCP No. 1962
	Report Date: August 2016

Use this checklist to determine the portions of the form that must be submitted for this report. Answer all questions by checking Yes or No. If the answer is Yes include that portion of the report. If the answer is No, do not complete or submit that portion of the report. All form contents that are marked "Required" must be submitted. Form contents marked with an asterisk (*) are not included in the blank form and are to be provided by the person.

				Report Contents
		Required	**Cover Page**	☒
		Required	**Executive Summary**	☒
		Required	**Checklist for Report Completeness**	☒
		Required	**Worksheet 1.0** Response Action Objectives	☒
No ☒	Have new data been collected that was not previously submitted?	☐ Yes	**Attachment 1A*** Maps and Cross Sections	☒
			Attachment 1B* Graphs of Concentration versus Time	☐
		Required	**Worksheet 2.0** Response Action Design	☒
		Required	**Attachment 2A*** Response Action Diagrams and Component/Equipment Descriptions	☒
		Required	**Attachment 2B*** Proposed Well Design	☐
No ☒	Is an ecological services analysis or compensatory restoration plan part of the proposed response action?	☐ Yes	**Attachment 2C*** ESA and Compensatory Restoration Plan	☐
No ☒	Is a plume management zone proposed as part of the response action?	☐ Yes	**Worksheet 2.1** Plume Management Zone	☐
			Attachment 2D* Plume Management Zone Map	☐
			Attachment 2E* Attenuation Action Levels Determination	☐
No ☒	Is a waste control unit proposed as part of the response action?	☐ Yes	**Worksheet 2.2** Waste Control Unit	☐
			Attachment 2F* Map of Waste Control Unit	☐
No ☒	Is a technical impracticability area proposed as part of the response action?	☐ Yes	**Worksheet 2.3** Technical Impracticability	☐
			Attachment 2G* Map of Technical Impracticability Area	☐

Checklist for Report Completeness	ID No.: VCP No. 1962
	Report Date: August 2016

				Report Contents
No ☐	Is the response action a remedy standard B?	☒ Yes	**Worksheet 2.4** Institutional Controls	☒
		Required	**Worksheet 3.0** Performance Measures and Potential Problems	☒
		Required	**Worksheet 3.1** Monitoring and Sampling	☐
		Required	**Attachment 3A*** Map of Monitoring and Sampling Points	☐
		Required	**Worksheet 3.2** Operation and Maintenance	☒
		Required	**Worksheet 4.0** Confirmation Sampling Plan	☐
		Required	**Attachment 4A*** Map of Confirmation Sampling Points	☐
No ☐	Is the response action a Remedy Standard B?	☒ Yes	**Worksheet 5.0** Post Response Action Care	☒
			Attachment 5A* Map of PRAC Monitoring and Sampling Points	☐
			Attachment 5B* PRAC Costs	☐
No ☒	Does the person, who is a small business, desire to modify the financial assurance requirement?	☐ Yes	**Attachment 5C*** Small Business Affidavit	☐
		Required	**Worksheet 6.0** Implementation Schedule	☒
		Required	**Appendix 1*** References	☒
No ☒	Was any data collected that was not previously reported?	☐ Yes	**Appendix 2*** Data Tables and Boring Logs	☐
No ☒	Were any studies or tests conducted?	☐ Yes	**Appendix 3*** Studies and Tests Documentation	☐
No ☐	Is the response action a Remedy Standard B?	☒ Yes	**Appendix 4*** Proposed Institutional Controls	☒
No ☒	Are any institutional controls proposed/required on property not owned by the person?	☐ Yes	**Appendix 5*** Landowner Concurrence	☐
No ☒	Are any of the sample collection or handling procedures different from those reporting in the APAR or other previously submitted report?	☐ Yes	**Appendix 6*** Sampling Procedures	☐
No ☒	Are statistics or geostatistics proposed to be used as part of the response action?	☐ Yes	**Appendix 7*** Statistical Methodology	☐
No ☒	Was approval received from the TCEQ regarding the use of different rules to address a media?	☐ Yes	**Appendix 8*** Split Media Approval	☐

Form contents marked with an asterisk (*) are not included in the blank form.

Chronology

Old Municipal Incinerator Site, Galveston, Texas

August 2016	An Interim RAP is being submitted to TCEQ to address Lot E only. A Response to Comments Memo to address TCEQ's Affected Property Assessment Report (APAR) comments in a letter dated April 28, 2016 is being prepared. An investigation to complete data gaps and address TCEQ comments and concerns is presently being scheduled and a revised APAR is anticipated for delivery to the TCEQ in May 2017.
July 2016	A Municipal Setting Designation (MSD) Application Form and required supporting documentation was submitted to TCEQ in July 2016. MSD Certification is still pending, but is expected to be completed in September 2016.
May 2016	The City of Galveston approved Ordinance No. 16-039 on May 27, 2016. This ordinance prohibits groundwater potable use within the MSD boundaries associated with this Site.
January 2016	AECOM initiated field activities for an Affected Property Assessment (APA) at the Site in June 2015 and submitted an APAR for TCEQ review in January 2016. Soil sampling and analysis performed for the APAR resulted in lateral and vertical delineation of affected surface soil to Tier 1 residential assessment levels (RALs) for the Site Constituents of Concern (COCs) – metals (lead, arsenic, and mercury) and polycyclic aromatic hydrocarbons (PAHs) (primarily benzo(a)pyrene).
March 2014 and September 2014	EFI Global collected supplemental soil samples for analysis of site-specific COCs. The resulting data did not fully delineate the lateral extent of affected surface soil to the Tier 1 RALs ($^{Tot}Soil_{Comb}$ PCLs). The EFI Global report also indicated that previously reported exceedances of pesticides in soil and groundwater samples (Meridian, March 2006) were actually a mistake resulting from misinterpreting the units reported by the lab (micrograms [µg]) as milligrams [mg]). Therefore, pesticides are not site-specific COCs.
September 2006	The Site was accepted into the TCEQ Voluntary Cleanup Program (VCP) on 18 September 2006 and was assigned VCP No. 1962.
March 2006	Meridian prepared and submitted a Phase II Environmental Site Assessment (ESA) APAR for the Site to support the City of Galveston Brownfields Site Assessment Pilot Project for commercial redevelopment of the Site. The Phase II ESA APAR concluded that the shallow groundwater bearing unit at the Site meets the criteria for a Class I groundwater resource, based on indirect evidence. Metals and pesticides were identified as groundwater COCs that were detected above the Tier 1 RALs. Metals, SVOCs, and pesticides were identified as COCs in surface soil, some of which were detected at concentrations above the Tier 1 RALs. Subsurface soil and surface water/sediment exposure pathways were determined to not be complete. The extent of affected groundwater and soil were not defined by the data presented in the Phase II ESA APAR.
April 2003	Meridian prepared and submitted a Phase I ESA to support the CoG Brownfields Site Assessment Pilot Project for commercial redevelopment of its 61st Street properties, including the Site, which is designated Lot E in the report. The Phase I ESA included reviews of historical documents and regulatory databases, and visual inspections. The report concluded there was a high level of uncertainty and environmental concern associated with Lot E and a Phase II ESA was recommended. It also recommended that the Site should be entered into the VCP.
August 2000	Texas Natural Resource Conservation Commission (TNRCC) approved the Site (Petroleum Storage Tank [PST] Facility ID No. 58735/Leaking Petroleum Storage Tank [LPST] Identification [ID] Number [No]. 99366) for closure under the PST Program.

1999	BNC Environmental Services, Inc. (BNC) was retained by CoG to prepare and submit a *Release Determination Report* to the TNRCC, now TCEQ. Soil samples were collected from 17 borings and groundwater grab samples were collected from five of the boreholes. The report recommended site closure, based on the then current site use and generally low levels of hydrocarbon contamination detected in the soil and groundwater samples from the Site (below PST Program Plan A Category II and default construction worker levels).
April 1993	Above-ground storage tank (AST) Nos. 1 through 4 were removed from the Site.
June 1992	Vulcan Environmental Services Corporation was retained by CoG to collect soil samples from the Site. Samples were collected above the water table at a depth of approximately 3 ft bgs from three borings located west of the fire training area. Total Petroleum Hydrocarbon (TPH) and lead were detected above the Texas Water Commission (TWC) minimal acceptable levels.
June 1991 – August 1991	TWC requested that CoG provide an incident report and documentation demonstrating soil contamination from the release was removed. CoG developed and implemented plans to remove the contents of the ASTs and clean up the contaminated soil from the spills. The Galveston Fire Department, which owned the ASTs, registered them with TWC. In July, U.S. Environmental Protection Agency (EPA) inspectors visited the Site and collected samples of the AST contents, stormwater runoff, and soil beneath one of the tanks. The EPA sample results indicated polychlorinated biphenyls that were previously reported in samples collected by EmTech were misidentified and were actually toxaphene.
May 1991	CoG reported a hydrocarbon release from the AST system used to store waste fuels and PCB oils for fire training exercises to the TWC, now TCEQ.
1965 – 1992 (approximately)	The CoG Fire Department used the Site for fire fighter training exercises. Five ASTs were used for on-site storage of combustibles to fuel the fires. These may have included gasoline, alcohol-blended fuel, aviation gasoline, kerosene, diesel and distillate fuel oil, PCB oils, and later propane.
1949 - 1953	The Old Municipal Incinerator (also known as the Old City Landfill and Old City Dump) was used from 1949 through 1953 to burn municipal solid waste and possibly some medical waste. Ash from the incinerator is believed to have been spread on the ground surface at the Site.

WORKSHEET 1.0

Response Action Objectives

Lot E Soil and Groundwater

Use this worksheet to describe the objectives for the response action in each media.

Response Action Objectives

List the environmental media to which this applies Lot E Soil and Groundwater
Repeat this section for each medium that has a different response action objective.

State the property-specific response objectives for the PCLE zone in each media in the context of the response objectives set forth in §350.32 or §350.33 as applicable. Explain how the response action is appropriate based on the hydrogeologic characteristics, COC characteristics, and potential unprotective conditions that could continue or result during the remedial period.

The response objective for the Site (Lot E) is to attain Remedy Standard B via physical controls and an institutional control in the form of deed recordation. The response action is to remove the existing dilapidated incinerator structure and existing AST and construct a cap over the entire Site. The cap material will be constructed of either clay, concrete or asphalt. The material will be selected during the upcoming bid process which will occur after the conditional approval of this Interim RAP. No funding can be released for a remedy until the TCEQ issues an approval letter for this Interim RAP. Additional funding for the remedy selected for the remainder of the affected property will be released upon the subsequent approval of the final off-site RAP. Details regarding the three proposed capping options, removal of the AST, and demolition of the incinerator structure are provided in the enclosed worksheets.

The incinerator demolition and removal, as well as the installation of the selected site cap, will eliminate human health exposure to soils with COC concentrations above the cPCL. The demolition of the incinerator and cap installation will be designed by a licensed Professional Engineer in the State of Texas. The permanent remedies selected will eliminate future surface runoff to other properties and prevent the need to install temporary controls, as was requested by the TCEQ in a comment letter prepared following review of the 2016 APAR.

A copy of the draft institutional control in the form of a deed notice is provided in Appendix 4. The selected response action was determined to be the best alternative based on regulatory compliance, effectiveness, implementability, and cost.

An Affected Property Map and a COC Concentration Map for Lot E is included in Attachment 1A for reference. Revised Cross Sections and a Groundwater Gradient Map will be included in the revised APAR.

Explain how the COCs will be handled, treated, disposed, or transferred to another media and document that the response action will not result in any additional potential exposure conditions due to response action activities.

Proper personal protective equipment will be worn and proper handling of the excavated soils will be followed in order to prevent exposure to the COCs.

The incinerator structure materials will be adequately tested prior to initiating demolition activities. The analytical results will dictate the controls during demolition and disposal of the incinerator structure materials. Appropriate testing will also be conducted at the existing AST, prior to permanently removing it from service. Any remaining product in the AST will be removed and properly disposed.

Excavated soil and building material will be properly manifested and transported to a permitted facility according to the facility's disposal requirements and Department of Transportation (DOT) requirements.

Detailed information regarding protocol for demolition, disposal, and capping is provided in Worksheets 2.0(a) and 2.0(b) of this Interim RAP.

State the proposed "reasonable time frame" and provide the justification for that time frame in the context of any potential for unprotective exposures to exist or develop, COC characteristics, hydrogeologic and affected property characteristics. If the reasonable time frame is different for the different affected media or for particular tracts of land, be sure to discuss that. Provide how the proposed response action will meet the objectives in a reasonable timeframe.

The response action is anticipated to be completed within 2 years from the date of approval for this Interim RAP. Worksheet 6.0 provides a detailed breakdown of response action implementation activities including design, bidding procedures, health and safety protocol, construction activities, and reporting.

Soil Response Action Objectives

When using removal and/or decontamination with controls or controls only, demonstrate how that physical control or combination of measures will reliably contain COCs within and/or derived from the surface soil and subsurface soil PCLE zone materials over time.

For on-site soil, installation of a cap will minimize dermal contact with impacted soil and stormwater runoff. The institutional control will place notice on the property deed to state that elevated levels of the COCs referenced in the Executive Summary and more specifically in the 2016 APAR are present. The institutional control (deed notice) will also reference the specifics of the cap. A draft copy of the proposed institutional control is provided in Appendix 4.

Explain how the removal or decontamination action will reduce the concentration of COCs to the critical surface soil and subsurface soil PCL throughout the soil PCLE zone and prevent COC concentrations above the critical soil PCLs from migrating beyond the existing boundary of the soil PCLE zone.

This is not applicable because the entire Site (Lot E) will be capped following demolition and removal of the incinerator structure.

WORKSHEET 1.0

Response Action Objectives

Groundwater Response Action Objectives

Groundwater Response Action Objectives

Name of groundwater-bearing unit to which this information applies	Shallow groundwater-bearing unit – typically encountered within two to five feet bgs in Recent Alluvium and Beach Sand/Fill/Pleistocene Beaumont Clay Formation.

Repeat this section for each groundwater-bearing unit for which a different response action is proposed.
Groundwater classification ____ 1 _x_ 2 ___ 3

Is a modified groundwater response action being proposed for any part of the groundwater PCLE zone (§350.33(f)(2), (3), or (4))? ___ Yes _x_ No

If yes, does the affected property meet the qualifying criteria for a modified groundwater response action using a waste control unit, plume management zone, or technical impracticability? ___Yes ___No
If yes, complete the appropriate portions of this report.
If no to either question, complete the following:

Explain how the removal or decontamination action will reduce the concentration of COCs to the critical groundwater PCL throughout the groundwater PCLE zone and prevent COC concentrations above the critical groundwater PCL from migrating beyond the existing boundary of the groundwater PCLE zone.

In addition to the removal of the existing incinerator structure, AST, and capping the Site, the City of Galveston is seeking a Municipal Setting Designation (MSD) Certificate from the TCEQ. The City of Galveston approved Ordinance No. 16-039 on May 27, 2016, prohibiting groundwater potable use within the MSD boundaries associated with a site located at #3 Lennox Avenue in Galveston, Galveston County, Texas. The TCEQ MSD Application was hand delivered to TCEQ on July 8, 2016. Only non-potable TRRP groundwater pathways would be applicable with the issuance of a MSD certificate, and no exceedances above these applicable pathways have been documented.

Explain how the response action will prevent COCs from migrating to air at concentrations above the PCLs for air if the groundwater-to-air PCLs (${}^{Air}GW_{Inh\text{-}V}$) is exceeded.

This is not applicable. The current groundwater COCs are either metals or PAHs, which do not have a ${}^{Air}GW_{Inh\text{-}V}$ PCL, or have concentrations below the ${}^{Air}GW_{Inh\text{-}V}$ PCL. The response action will not cause concentrations to increase; therefore, there is no threat of COCs migrating to air at concentrations above the ${}^{Air}GW_{Inh\text{-}V}$ PCL.

Explain how the response action will prevent COCs from migrating to surface water at concentrations above the PCLs for groundwater discharges to surface water if surface water is a factor.

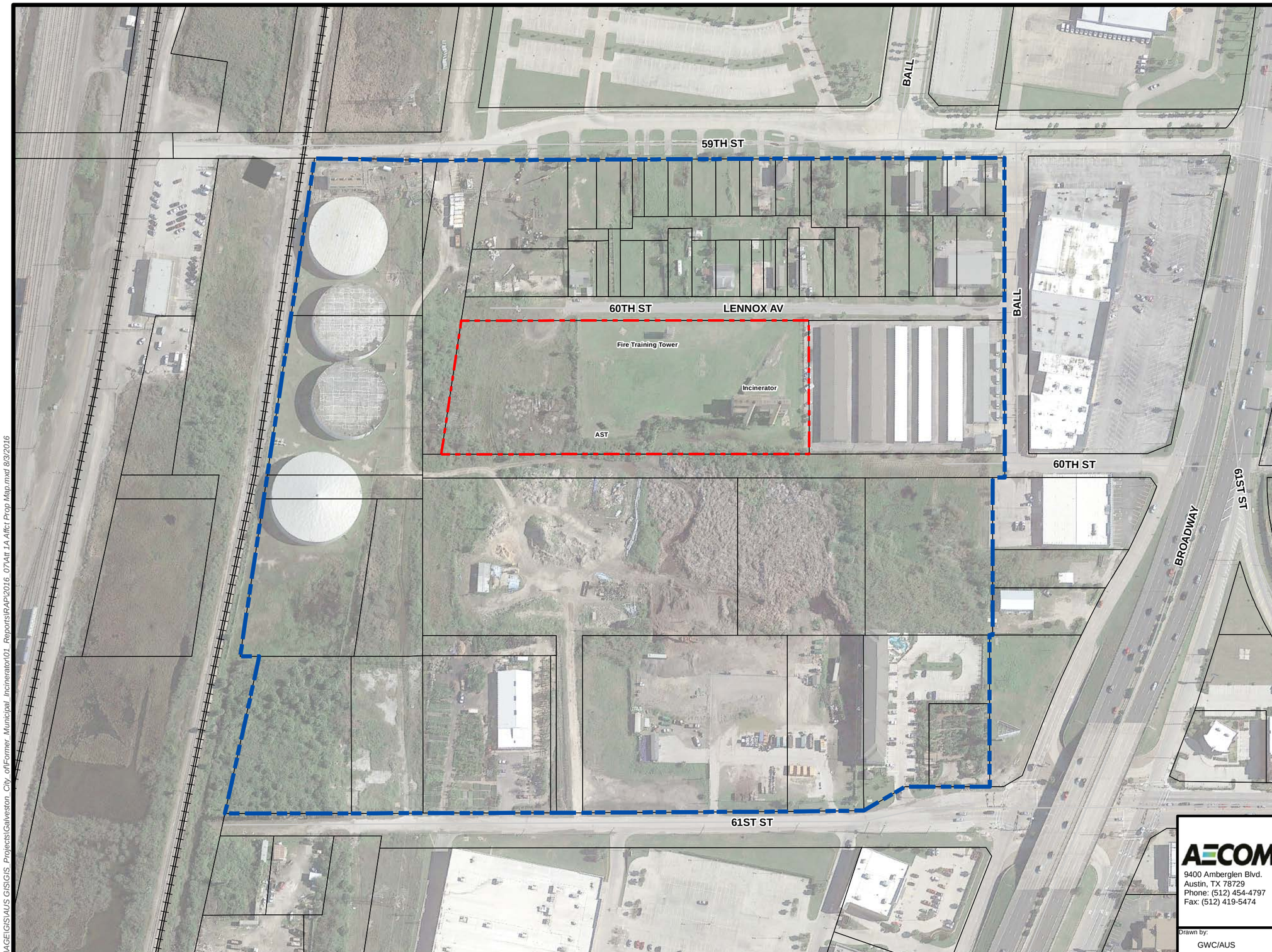
The cap for the Site will prevent surface run-off from impacted soil into surface water. No potential groundwater to surface water pathways have been documented in the 2016 APAR and additional data will be provided in the upcoming revised APAR.

Explain how the response action will prevent human and ecological receptor exposure to the groundwater PCLE zone.

A MSD will eliminate human health contact with groundwater for ingestion by restricting access to the groundwater via a City Ordinance (City of Galveston Ordinance No.16-039). The cap will prevent surface run-off that could impact ecological receptors.

ATTACHMENT 1A

Maps and Cross Sections



Legend

- On-Site Property Boundary (Lot E)
- Affected Property Boundary (Tier I RAL)
- Real Estate Parcel
- Railroad Track
- RAL Residential Assessment Level

200 100 0 200
Feet

AECOM
9400 Amberglen Blvd.
Austin, TX 78729
Phone: (512) 454-4797
Fax: (512) 419-5474

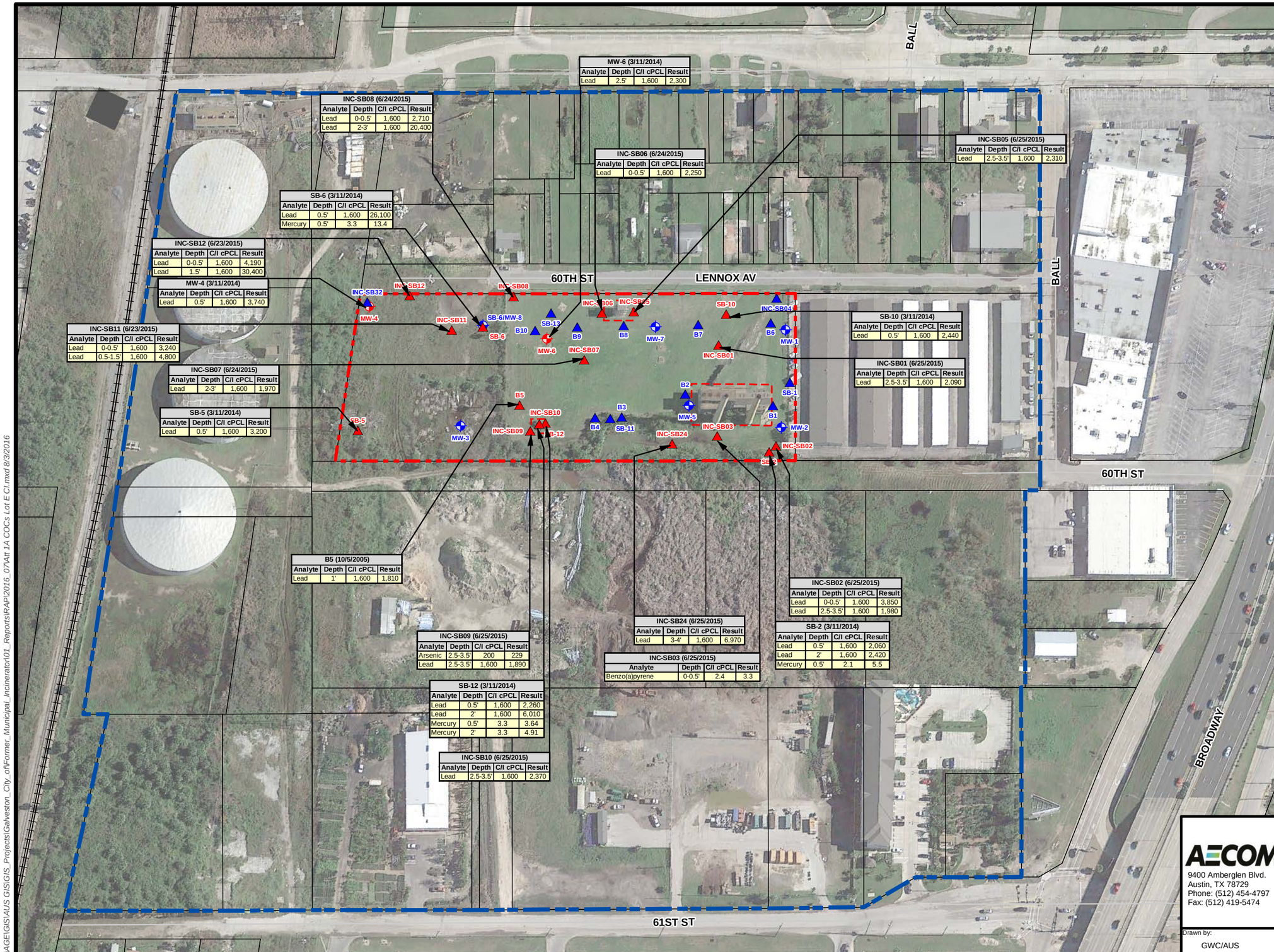
Client: City of Galveston

Report: Response Action Plan

Title: **Affected Property Map**

Drawn by:	Date:	GIS File:	Attachment:
GWC/AUS	8/3/2016	Att 1A Affct Prop Map	1A

L:\AGE\GIS\AUS GIS\GIS_Projects\Galveston_City_of\Former_Municipal_Incinerator\01_Reports\RAP\2016_07\Att 1A Affct Prop Map.mxd 8/3/2016



MW-6 (3/11/2014)			
Analyte	Depth	C/I cPCL	Result
Lead	2.5'	1,600	2,300

INC-SB08 (6/24/2015)			
Analyte	Depth	C/I cPCL	Result
Lead	0-0.5'	1,600	2,710
Lead	2-3'	1,600	20,400

INC-SB06 (6/24/2015)			
Analyte	Depth	C/I cPCL	Result
Lead	0-0.5'	1,600	2,250

INC-SB05 (6/25/2015)			
Analyte	Depth	C/I cPCL	Result
Lead	2.5-3.5'	1,600	2,310

SB-6 (3/11/2014)			
Analyte	Depth	C/I cPCL	Result
Lead	0.5'	1,600	26,100
Mercury	0.5'	3.3	13.4

INC-SB12 (6/23/2015)			
Analyte	Depth	C/I cPCL	Result
Lead	0-0.5'	1,600	4,190
Lead	1.5'	1,600	30,400

MW-4 (3/11/2014)			
Analyte	Depth	C/I cPCL	Result
Lead	0.5	1,600	3,740

INC-SB11 (6/23/2015)			
Analyte	Depth	C/I cPCL	Result
Lead	0-0.5'	1,600	3,240
Lead	0.5-1.5'	1,600	4,800

INC-SB07 (6/24/2015)			
Analyte	Depth	C/I cPCL	Result
Lead	2-3'	1,600	1,970

SB-5 (3/11/2014)			
Analyte	Depth	C/I cPCL	Result
Lead	0.5'	1,600	3,200

SB-10 (3/11/2014)			
Analyte	Depth	C/I cPCL	Result
Lead	0.5'	1,600	2,440

INC-SB01 (6/25/2015)			
Analyte	Depth	C/I cPCL	Result
Lead	2.5-3.5'	1,600	2,090

B5 (10/5/2005)			
Analyte	Depth	C/I cPCL	Result
Lead	1'	1,600	1,810

INC-SB09 (6/25/2015)			
Analyte	Depth	C/I cPCL	Result
Arsenic	2.5-3.5'	200	229
Lead	2.5-3.5'	1,600	1,890

SB-12 (3/11/2014)			
Analyte	Depth	C/I cPCL	Result
Lead	0.5'	1,600	2,260
Lead	2'	1,600	6,010
Mercury	0.5'	3.3	3.64
Mercury	2'	3.3	4.91

INC-SB10 (6/25/2015)			
Analyte	Depth	C/I cPCL	Result
Lead	2.5-3.5'	1,600	2,370

INC-SB24 (6/25/2015)			
Analyte	Depth	C/I cPCL	Result
Lead	3-4'	1,600	6,970

INC-SB03 (6/25/2015)			
Analyte	Depth	C/I cPCL	Result
Benzo(a)pyrene	0-0.5	2.4	3.3

INC-SB02 (6/25/2015)			
Analyte	Depth	C/I cPCL	Result
Lead	0-0.5'	1,600	3,850
Lead	2.5-3.5'	1,600	1,980

SB-2 (3/11/2014)			
Analyte	Depth	C/I cPCL	Result
Lead	0.5'	1,600	2,060
Lead	2'	1,600	2,420
Mercury	0.5'	2.1	5.5

Legend

- On-Site Property Boundary (Lot E)
- Affected Property Boundary (Tier I RAL)
- Real Estate Parcel
- Potential Source Area
- Railroad Track
- Monitor Well Location
- Monitor Well Location (One or More COCs Exceed C/I cPCL)
- Soil Boring Location
- Soil Boring Location (One or More COCs Exceed C/I cPCL)
- C/I cPCL — Commercial/Industrial Critical Protective Concentration Level
- RAL — Residential Assessment Level

Notes:
1. *All depths are shown in feet below ground surface (ft bgs).*
2. *All concentrations are shown in milligrams per kilogram (mg/kg).*

150 75 0 150
Feet

AECOM
9400 Amberglen Blvd.
Austin, TX 78729
Phone: (512) 454-4797
Fax: (512) 419-5474

Client: City of Galveston

Report: Response Action Plan

Title: **COC Concentration Map for Lot E**

Drawn by:	Date:	GIS File:	Figure:
GWC/AUS	8/3/2016	Att 1A COCs Lot E CI	1A

L:\AGE\GIS\AUS GIS\GIS_Projects\Galveston_City_of\Former_Municipal_Incinerator\01_Reports\RAP\2016_07\Att 1A COCs Lot E CI.mxd 8/3/2016

ATTACHMENT 1B

Graphs of Concentrations versus Time

Not Applicable.

WORKSHEET 2.0

Response Action Design

Response Action Design

Use this worksheet to provide detailed descriptions of the response action. Attach design and layout drawings and equipment specifications in Attachment 2A.

Media: Soil and groundwater located on Lot E. Worksheet 2.0(a) will outline the demolition and removal of the incinerator and AST and Worksheet 2.0(b) will outline the soil capping.

List all media to which this information applies. If the response action is different for another media, complete a separate worksheet.

Provide a detailed description of the response action. Describe the removal action, decontamination, treatment system(s), and/or physical or institutional control actions that are proposed for each media and discuss the reasons for choosing the response action(s). Identify and describe any ecological services analysis and compensatory restoration plan that will be utilized (if so, include the complete ESA and compensatory restoration plan in Attachment 2C).

Summary:
The scope of work of the response action focuses on the demolition of the incinerator and AST and the capping of impacted soils.

The specifics for the demolition and removal of the incinerator and AST and the capping of the impacted soils are outlined in Worksheet 2.0(a) and 2.0(b) below. Worksheet 2.0 will outline the response actions that pertain to both the capping and the removal of the incinerator and AST.

In this response action, the following general activities will be performed at the Site (Lot E):

1. Mobilize all equipment and temporary facilities to the Site.
2. Construct, inspect, and maintain erosion and sedimentation controls.
3. Construct large equipment roads and construction entrance.
4. Manage stormwater runoff during all construction activities.
5. Provide dust suppression measures, as needed, to prevent the generation of fugitive dust during earthmoving activities.
6. Minimize erosion at the site by instituting controls and designing the cap for appropriate drainage.
7. Demobilize all equipment and temporary facilities from the Site.

Sequence of Work:
The sequence of work for the response action will be conducted in two separate phases as outlined below:

Phase 1: Phase 1 of the response action will involve the demolition and removal of the incinerator and AST.

Phase 2: Phase 2 of the response action will involve the regrading and stabilization of the Site to create an even surface for the installation of the selected cap, followed by installation of the cap.

Planning Documents:
A removal action design package will be prepared by the Engineer for the response action. The package will include drawings and specifications for implementation of the work and will be used for bidding and selection of a Contractor. A topographic survey will be performed to provide adequate information for the design of the cap, storm sewer, drainage ditch, and outlet structure. It will also be used to establish grades for final restoration of the Site.

Before the start of any field activities, the Contractor will submit a site-specific Health and Safety Plan

(HASP). The HASP will define appropriate personal protective equipment and safe work procedures to be employed on Site. It shall require that all work be performed in accordance with applicable Federal (i.e. Environmental Protection Agency (EPA) and the Occupational Safety and Health Administration [OSHA], etc.), State of Texas, and local government regulations.

A Stormwater Pollution Protection Plan (SWPPP) will be prepared and implemented. Appropriate notices and signage will be provided.

Response Action Scope:

Underground Utilities: All underground utilities will be identified and marked by the Contractor. The Contractor will establish work zones (exclusion zone, decontamination zone, support zone, etc.) to prevent unauthorized personnel access and to delineate waste management areas. Equipment decontamination areas will also be defined. Other site preparation work will include construction of erosion and sedimentation controls, temporary facilities, site security, stormwater handling equipment, and a decontamination pad.

Erosion and Sedimentation Controls: Soil erosion and sediment control practices will be implemented and maintained by the Contractor throughout the duration of the work. At a minimum, stormwater will be diverted away from proposed work areas. Clearing and grubbing will be kept to a minimum, while still enabling the regrading work to be completed, so as to maintain a degree of erosion and sediment control buffer. The soil erosion and sediment control measures will be inspected on a weekly basis and after rainfall events as necessary to check for areas that require repair. Sediment that accumulates in erosion and sediment control devices will be removed and placed as backfill for the cap. Sedimentation control devices will be removed after all construction has been completed and a permanent cap has been installed.

Temporary Facilities: An office trailer will be provided for the use of the Contractor and Engineer. Electrical service will be provided either by arranging for service through local utilities or by electric generator. Additionally, enclosed temporary sanitary facilities will be provided and serviced on a regular basis throughout the project.

Decontamination: A decontamination pad will be constructed by the Contractor within the work area to eliminate removal of contamination outside the area. The pad shall be constructed above grade, bermed, and protected from run-on and runoff. The actual location and size of the decontamination pad will be determined in the field.

Stabilized Construction Entrance: The Contractor will construct a stabilized construction entrance and large equipment road as necessary during the construction activities. The large equipment roads and stabilized construction entrance will be removed prior to final site restoration.

Site Security: Site security will be established upon mobilization. Security will be maintained such that only authorized personnel will be permitted to enter the Site. An entry/exit log will be kept in the project trailer to document worker and guest presence on a daily basis. The Site is currently enclosed by fencing.

Stormwater Handling: The Contractor will have on standby a frac tank and appropriate equipment for handling stormwater for the period of soil excavation. If required, the tank will be used to store stormwater that has been determined to require either off-site disposal or additional characterization. The Contractor will be responsible for providing the tank and equipment to handle stormwater, if needed, during the site activities.

Demobilization: All temporary features, sediment and erosion control devices, and trash generated as a result of on-site activities will be removed upon project completion. Staging areas will be swept clean, as appropriate. Temporary protective features such as gravel pads and haul roads will be removed from

the Site. Temporary office facilities and associated utilities will be removed. Frac tanks will be cleaned and demobilized. Decontamination areas will be dismantled. Portable toilet facilities will be demobilized at job completion.

Describe all major treatment system components and equipment of the response action. Illustrate the response action design and provide equipment specifications in Attachment 2A (1-3).

Detailed engineering plans and performance specifications will be developed as part of the response action.

List permits or registrations needed to construct or implement the response action, including permits or registrations needed to conduct studies or tests. For VCP sites, list the permits that would be required if the site was not in the VCP (required by the VCP).

Permitting/Registration Authority	Type of permit/registration	Permit or registration number if already issued	Anticipated application date
TCEQ	Texas Pollutant Discharge Elimination System (TPDES) Construction General Permit	TXR150000 (TPDES general permit)	Submit Notice of Intent (NOI) 2 days prior to commencement

Identify and discuss the results of any studies or tests, such as pilot studies, feasibility studies, technical impracticability studies, treatability studies, and/or toxicity studies conducted or proposed to be conducted at the affected property. Discuss the reason for the study or test and how it verifies the effectiveness and appropriateness of the chosen response action or documents that a particular response action is not appropriate for the affected property. Describe how the results of completed studies or tests determined the design or choice of response action. Attach any separate reports and supporting documentation in Appendix 3.

An internal feasibility study was developed that included screening of technologies, development of remedial alternatives, and evaluation of alternatives.

Phase I - Incinerator

An internal review of remedial alternatives was conducted by a professional engineer along with construction managers to determine the most feasible and appropriate means of demolition of the incinerator. The selected approach includes demolition and removal of all associated pieces and debris. The incinerator structure is a safety hazard to the public and surrounding properties. Prior to demolition the incinerator structure will be evaluated for asbestos and lead-containing material as well as the safe removal/disposal of any process equipment or tanks containing material used in the process. Structural components of the stack, such as stack brick lining and residual ash, will be tested and either treated and/or disposed of offsite based on waste characterization.

Phase 2 - Site Soils:

The following remedial alternatives were developed and evaluated for the site soil:

- Excavation and off-site disposal without treatment;
- Excavation and off-site disposal with treatment; and
- Capping (either asphalt, concrete, or clay with vegetative cover) coupled with land use restrictions.

The capping alternative was selected based on regulatory compliance, effectiveness, implementability, and cost. It is also noteworthy that capping is consistent with the presumptive remedies for metals-impacted soil with volumes exceeding 4,000 cubic yards (yd^3) as specified in the below guidance documents. (The estimated volume of soil on the site with PCL exceedances is 10,000 yd^3).

2.0(a). Response Action Design

Use this worksheet to provide detailed descriptions of the response action. Attach design and layout drawings and equipment specifications in Attachment 2A.

Media: Demolition and removal of the Incinerator and AST
List all media to which this information applies. If the response action is different for another media, complete a separate worksheet.

Provide a detailed description of the response action. Describe the removal action, decontamination, treatment system(s), and/or physical or institutional control actions that are proposed for each media and discuss the reasons for choosing the response action(s). Identify and describe any ecological services analysis and compensatory restoration plan that will be utilized (if so, include the complete ESA and compensatory restoration plan in Attachment 2C).

The response action is to remove the incinerator by enacting a demolition plan. The demolished materials will be tested for appropriate disposal.

In this response action, the following activities will be performed in approximate sequential order.

1. The subcontractor will notify all utilities that provide service connections within the building, such as water, electricity, gas, sewer, and other connections to ensure the utilities are disconnected before work proceeds. Once all utilities have been disconnected, the service connections and appurtenant equipment, such as meters and regulators, will be removed by the subcontractor.
2. The incinerator will be tested for the presence of asbestos, lead, and other potential residuals from the process prior to demolition. The AST will be cleaned out, tested for contamination, and cut into pieces before being disposed of to an appropriate facility.
3. If asbestos is detected, an asbestos certified subcontractor will be selected to perform the demolition work and oversight will be provided based on Texas Department of State Health Services (DSHS) Rules. The certified subcontractor will remove all asbestos containing materials (ACM) that have been identified at the Site in accordance with the guidelines set forth in the following regulatory statutes and standards:
   - Title 29 Code of Federal Regulations (CFR), Part 1910, Sections 1910.134, 1910.1001, and Part 1926.1101. OSHA, U.S. Department of Labor.
   - Title 40 CFR, Part 61, Subpart M, NESHAP. EPA.
   - Title 49 CFR, Part 172, U.S. Department of Transportation.
   - American National Standards Institute (ANSI) 86.1-1973 Commodity Specification for Air.
   - Texas Administrative Code (TAC): Title 25 Health Services, Part 1 Department of State Health Services, Chapter 295 Occupational Health, Subchapter C Texas Asbestos Health Protection.
   - Title 40 CFR, Part 763 Asbestos Hazards Emergency Response Act (AHERA). EPA.
   - All other Federal, State, County, and City regulations, codes, and ordinances as applicable.
4. Precautions will be taken to minimize dust creation from the demolition activities. Air-purifying respirators will be used if dust creation is unavoidable to prevent inhalation of dust particles.
5. Waste classification activities will be conducted to complete waste profiles and determine the destination of the construction debris.
6. Construction debris will be loaded, manifested, transported, and disposed off-site at a TCEQ-approved and licensed waste disposal facility (landfill).
7. The former incinerator building site will then be evaluated for consistency with the site soil alternative. Portions of the building foundation, if in good condition, may be incorporated into the selected cap alternative.

Describe all major treatment system components and equipment of the response action. Illustrate the response action design and provide equipment specifications in Attachment 2A.

Detailed engineering plans and performance specifications will be developed as part of the response action. It is anticipated that contractors will use conventional equipment to demolish the incinerator. Substantial attention will be given to dust suppression techniques to ensure protection of workers and community during demolition activities. Temporary controls will be utilized for managing stormwater runoff during construction activities.

List permits or registrations needed to construct or implement the response action, including permits or registrations needed to conduct studies or tests. For VCP sites, list the permits that would be required if the site was not in the VCP (required by the VCP).

Permitting/Registration Authority	Type of permit/registration	Permit or registration number if already issued	Anticipated application date

Identify and discuss the results of any studies or tests, such as pilot studies, feasibility studies, technical impracticability studies, treatability studies, and/or toxicity studies conducted or proposed to be conducted at the affected property. Discuss the reason for the study or test and how it verifies the effectiveness and appropriateness of the chosen response action or documents that a particular response action is not appropriate for the affected property. Describe how the results of completed studies or tests determined the design or choice of response action. Attach any separate reports and supporting documentation in Appendix 3.

Not applicable.

2.0(b). Response Action Design

Use this worksheet to provide detailed descriptions of the response action. Attach design and layout drawings and equipment specifications in Attachment 2A.

Media: Soils and groundwater at Site (Lot E), as shown on Attachment 1A

List all media to which this information applies. If the response action is different for another media, complete a separate worksheet.

Provide a detailed description of the response action. Describe the removal action, decontamination, treatment system(s), and/or physical or institutional control actions that are proposed for each media and discuss the reasons for choosing the response action(s). Identify and describe any ecological services analysis and compensatory restoration plan that will be utilized (if so, include the complete ESA and compensatory restoration plan in Attachment 2C).

The response action is to construct a cap over Lot E, shown in Attachment 1A. This cap will be constructed in one of three ways - either a clay cap with vegetation, an asphalt cap, or a concrete cap. The preliminary designs for these three caps are included in Attachment 2A (Figure nos. 2A-1, 2A-2 and 2A-3).

In this response action, the following general activities will be performed.

1. Conduct a topographic survey of Lot E in order to establish the drainage and flow direction of water on the Site.
2. Geotechnical soil samples will be collected and geotechnical testing performed to determine the composition of the soil on Site to aid in the design of the selected cap alternative.
3. A clay, asphalt, or concrete cap will be implemented to protect against human exposure to Site soils.
4. Stormwater will be diverted off of the cap in accordance with the Stormwater Pollution Prevention Plan (SWPPP) criteria.
5. City of Galveston stormwater retention regulations and development guidelines will be followed in the design and implementation of the cap.
6. Regrade site soils and with stabilization materials to create an appropriate base for the cap, installing the appropriate cap materials, and establishment of final contours conforming to the natural drainage of the Site and off site properties.
7. Components of the preliminary design for each cap alternative are provided in Figures 2A-1, 2A-2, and 2A-3.
8. Appropriate drainage improvements will be made, if necessary, to areas adjacent to the cap to convey stormwater offsite.
9. An operations and maintenance plan will be developed to assist in the inspection frequency and inspection instructions for future monitoring and repair of the cap.

Describe all major treatment system components and equipment of the response action. Illustrate the response action design and provide equipment specifications in Attachment 2A.

Detailed engineering plans and performance specifications will be developed as part of the response action. Conventional earth moving equipment will be used to add fill material where needed to create a structurally sound base for the cap. Conventional techniques will be used in the construction of the cap.

List permits or registrations needed to construct or implement the response action, including permits or registrations needed to conduct studies or tests. For VCP sites, list the permits that would be required if the site was not in the VCP (required by the VCP).

Permitting/Registration Authority	Type of permit/registration	Permit or registration number if already issued	Anticipated application date
City of Galveston-	Building Permit	Not available	Before start of

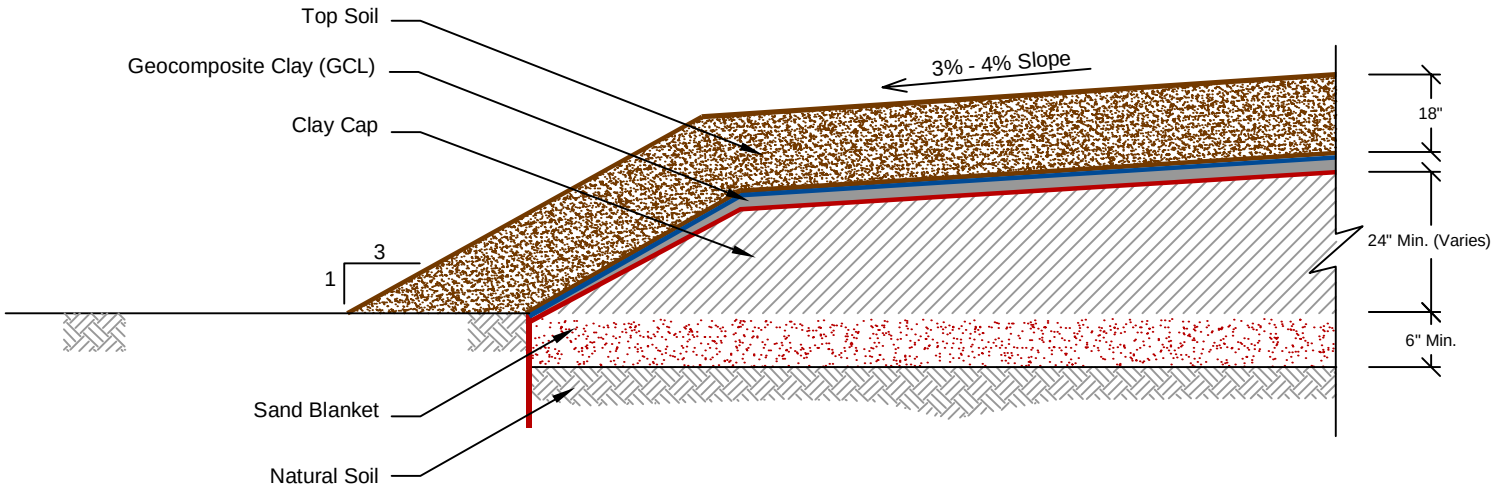
Building Division			construction

Identify and discuss the results of any studies or tests, such as pilot studies, feasibility studies, technical impracticability studies, treatability studies, and/or toxicity studies conducted or proposed to be conducted at the affected property. Discuss the reason for the study or test and how it verifies the effectiveness and appropriateness of the chosen response action or documents that a particular response action is not appropriate for the affected property. Describe how the results of completed studies or tests determined the design or choice of response action. Attach any separate reports and supporting documentation in Appendix 3.

Not applicable.

ATTACHMENT 2A

Response Action Diagrams and Component/Equipment Descriptions



Clay Cap Option Section

- BX 1100 / 1200 GEOGRID (TENSAR)
- 40 MIL HDPE LINER
- TOP SOIL
- 24" MINIMUM CLAY CAP (Permeability $\leq 1 \times 10^{-7}$ cm/sec)
- GEOCOMPOSITE CLAY LINER (GCL)

AECOM
19219 KATY FREEWAY, STE. 100
HOUSTON, TEXAS 77094
PH: 281-646-2400
FAX: 281-646-2401

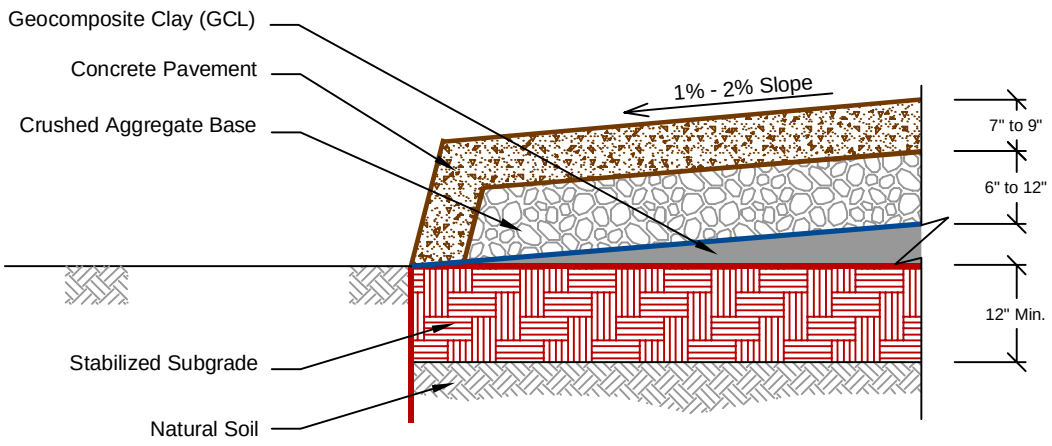
Scale:	Drawn by:	Date:
Not to Scale	-	8-3-16
	Chk'd by: DZ	Date: 8-3-16

Title: **Clay Cap Option**

Project: Remedial Action Plan
-

Project: **City of Galveston**

Project No.:	File Name:	Figure No.:
60420789	Clay Cap Option.dwg	**2A-1**



Concrete Pavement Option
Section

- BX 1100 / 1200 GEOGRID (TENSAR)
- 40 MIL HDPE LINER
- WIRE REINFORCED CONCRETE
- 6 TO 12 INCHES CRUSHED AGGREGATE BASE COMPACTED TO 95% STANDARD PROCTOR DENSITY. THIS LAYER IS UNDERLAIN BY BX 1100 / 1200 GEOGRID.
- GEOCOMPOSITE CLAY LINER (GCL)

AECOM
19219 KATY FREEWAY, STE. 100
HOUSTON, TEXAS 77094
PH: 281-646-2400
FAX: 281-646-2401

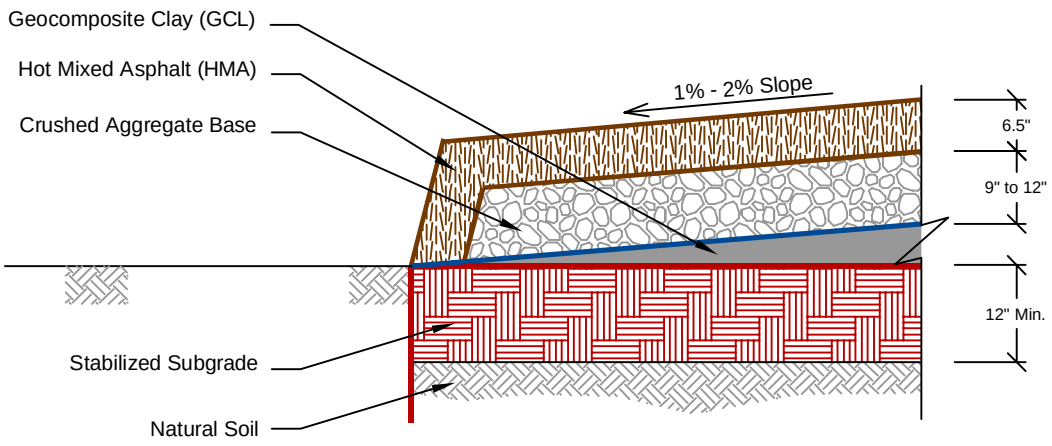
Scale:	Drawn by:	Date:
Not to Scale	-	8-3-16
	Chk'd by: DZ	Date: 8-3-16

Title: **Concrete Pavement Option**

Project: Remedial Action Plan
-

Project: **City of Galveston**

Project No.:	File Name:	Figure No.:
60420789	Concrete Pavement Option.dwg	**2A-2**



HMA Pavement Option
Section

- BX 1100 / 1200 GEOGRID (TENSAR)
- 40 MIL HDPE LINER
- HOT MIXED ASPHALT (HMA)
- 9 TO 12 INCHES CRUSHED AGGREGATE BASE COMPACTED TO 95% STANDARD PROCTOR DENSITY. THIS LAYER IS UNDERLAIN BY BX 1100 / 1200 GEOGRID.
- GEOCOMPOSITE CLAY LINER (GCL)

AECOM
19219 KATY FREEWAY, STE. 100
HOUSTON, TEXAS 77094
PH: 281-646-2400
FAX: 281-646-2401

Scale:	Drawn by:	Date:
Not to Scale	-	8-3-16
	Chk'd by: DZ	Date: 8-3-16

Title: **HMA Pavement Option**

Project: Remedial Action Plan
-

Project: **City of Galveston**

Project No.:	File Name:	Figure No.:
60420789	HMA Pavement Option.dwg	**2A-3**

ATTACHMENT 2B

Proposed Well Design

Not Applicable.

ATTACHMENT 2C

ESA and Compensatory Restoration Plan

Not Applicable.

WORKSHEET 2.1

Plume Management Zone

Not Applicable.

ATTACHMENT 2D

Plume Management Zone Map

Not Applicable.

ATTACHMENT 2E

Attenuation Action Levels Determination

Not Applicable.

WORKSHEET 2.2

Waste Control Unit

Not Applicable.

ATTACHMENT 2F

Map of Waste Control Unit

Not Applicable.

WORKSHEET 2.3

Technical Impracticability

Not Applicable.

ATTACHMENT 2G

Map of Technical Impracticability Area

Not Applicable.

WORKSHEET 2.4

Institutional Controls

Institutional Control	RAP Worksheet 2.4	Page 1 of 1
Associated Information: Appendices 4, 5	ID No.: VCP No. 1962	Report Date: August 2016

Complete this worksheet if an institutional control will be used as part of the response action. Include a draft of the proposed institutional controls in Appendix 4. Provide a list of landowners from whom landowner concurrence will be requested, as necessary, in Appendix 5.

Specify the property for which this applies. A copy of the draft institutional control (IC) for the Site (Lot E) is provided in Appendix 4. The deed notice IC will specifically reference the physical cap and COC exceedances in soil. A MSD application has been submitted to TCEQ and should be certified in the summer 2016.

Repeat this worksheet for each different property for which an institutional control will be used.

Institutional Control	Type of Institutional Control[1]				Property Ownership		Anticipated Filing Date[2]
	Deed Notice	Restrictive Covenant	VCP Certificate of Completion	Equivalent zoning or governmental ordinance	Check if pertinent tract of land is owned by the person	Check if the pertinent tract of land is owned by an innocent owner or operator	
Document use of commercial/industrial land use (§350.31(g))	X		X				January 2017
Document use of physical or institutional control under Remedy Standard B §350.31(g))	X		X	X (MSD)			January 2017
Document notice of on-going long term response action (§350.31(h))							
Document use of occupational inhalation criteria as RBELs (§350.74(b)(1))							
Document variance from the default exposure factors (§350.74(j)(2)(L))							
Document the use of a non-default soil exposure area (§350.51(l)(3)&(4))							
Document WCU exclusion area (§350.33(f)(2))							
Document establishing a PMZ (§350.33(f)(4)(C)(I))							
Document the demonstration of technical impracticability (§350.33(f)(3)(F))							
Relocation of soils containing COCs for reuse (§350.36(b)(4) and (c)(4))							

[1] Check the appropriate box(es) to indicate the type of institutional control required for the proposed response action.
[2] Specify date or amount of time after RAP approval.

WORKSHEET 3.0

Performance Measures and Potential Problems

Performance Measures

List and describe the performance measures for each environmental medium containing a PCLE zone that will be used to determine if reasonable progress is being made by the response action in a timely manner. Use these measures to document effectiveness of the response action in the RAER.

Phase I - Demolition of Incinerator and AST:

Performance measures for the removal of the incinerator will involve observation and verification of the following design elements:

1. Testing of incinerator for lead-based paint and asbestos.
2. Testing of kiln and kiln contents for presence of radioactivity.
3. Cleaning out of AST and testing contents for waste classification.
4. Testing of stack walls and contents for waste classification.
5. Appropriate contractor selected with relevant experience and safety record.
6. Completed demolition plan.
7. Stormwater diversion plan in place.
8. Demolition of incinerator and removal of AST.
9. Removal of demolished incinerator and AST to appropriate facility.

Phase 2 - Soil:

Performance measures for the soil cap will involve observation and verification of the following design elements:

1. Completed capping design.
2. Completed capping construction.
3. Completed site inspections indicating structural integrity of cap.

Potential Problems

Complete the table for the response action. When the response action consists of several components or multiple actions, complete one table for each major component or action.

Response Action Name/Designation: Demolition of incinerator and construction of cap

List the potential problems that might be reasonably anticipated for the response action, describe the impact of each problem, and the response to the problem.

Description of the Potential Problem	Impact	Will this cause a response action failure?		Corrective Response
		Yes	No	
Generation of fugitive dust from soil and debris is excessive and/or migrates beyond site boundary.	Workers and community are potentially exposed to lead-contaminated dust.		x	Provide adequate planning and procedures to address problem before it occurs. Consider the use of water cannons or other misting devices to reduce dust emission during demolition activities.

Storm events result in erosion of exposed impacted soil.	Lead-contaminated stormwater is released, or treatment system is overloaded.		x	Provide adequate planning and procedures to address problem before it occurs. Consider the use of tarps and other temporary devices to protect exposed impacted soil from surface water.

Response Action Name/Designation: Cap maintenance

List the potential problems that might be reasonably anticipated for the response action, describe the impact of each problem, and the response to the problem.

Description of the Potential Problem	Impact	Will this cause a response action failure?		Corrective Response
		Yes	No	
Cap develops cracks or other defects that allow contact between stormwater and impacted soil.	Stormwater runoff becomes contaminated.		x	Continue collecting stormwater for potential treatment until corrective response actions are demonstrated to be sufficient.

WORKSHEET 3.1

Monitoring and Sampling

Not Applicable.

ATTACHMENT 3A

Map of Monitoring and Sampling Points

Not Applicable.

WORKSHEET 3.2

Operation and Maintenance

3.2. Response Action
Name/Designation: Phase 2 - Capping and Stormwater Management

List all portions of the response action to which this information applies.

Describe the O&M and inspection activities that will be required to operate and maintain response action components.

The cap will be inspected on an annual basis for settling, cracks, or other evidence of structural integrity problems. If either the asphalt or concrete cap design is selected, a fresh seal coat would be applied on an as-needed basis (typically once every 5 to 10 years for a low traffic area). If the clay cap design is selected, vegetation would be monitored to ensure adequate growth.

List and discuss the key operating parameters for a properly functioning response action. Address how changes in these parameters will result in operating changes, providing sufficient detail to explain how the operator will know the component is functioning properly.

The cap has two primary functions: (1) prevent direct contact with contaminated materials, and (2) prevent contamination of stormwater runoff.

The key operating parameters is the physical integrity of the cap. Changes will be noted through inspections with repairs made as needed.

List the routine tasks required to operate the response action.

Not applicable. Caps are not “operated.”

List the routine tasks required to maintain the response action, including scheduled inspections, maintenance, and component replacement.

Inspecting cap for structural integrity problems.
Repair cap as needed.

WORKSHEET 4.0

Confirmation Sampling Plan

Not Applicable.

ATTACHMENT 4A

Map of Confirmation Sampling Points

Not Applicable.

WORKSHEET 5.0

Post Response Action Care

Complete this worksheet only if Remedy Standard B will be used.

What is the proposed initial post-response action care period? (default 30 yr.) 30 years

If the proposed initial post-response action care period is less than 30 years, provide a technical justification in accordance with §350.33(h).

The proposed post-response action care will not be for a period of less than 30 years.

What is the foreseeable land use during the post-response action care period? City operations

Describe how the future use of the property will not compromise the integrity of the physical controls, will not interfere with the function of the monitoring systems, will not pose a threat to human health or the environment, and will be in accordance with any institutional controls.

Currently, the COG does not have a plan for use of the Site as the main priority is to remove the existing incinerator structure and cap the Site to prevent surface runoff. Any future uses will not pose a threat to human health or the environmental and it will be in accordance with the proposed institutional controls.

Briefly describe the proposed post-response action care activities. Describe the type of monitoring and/or inspections to be performed. Discuss the rationale for not including COC(s) analyzed during the response action, monitoring or sampling point location, frequency of monitoring and/or inspections, and the duration of the monitoring program.

The cap will be inspected on an annual basis for settling, cracks, or other evidence of structural integrity problems for 30 years after the completion of the cap. If the asphalt or concrete cap design is selected, a fresh seal coat will be applied on an as-needed basis (typically once every 5 to 10 years for a low traffic area). If the clay cap design is selected, vegetation will be monitored accordingly to ensure adequate growth.

Will PRAC sampling procedures be the same as those as previously documented for monitoring and/ or confirmation sampling? x Yes ____ No

If no, provide in Appendix 6 a description of the monitoring or sampling collection procedures to be conducted during the post-response action care period.

Cost Estimate

Complete this portion of the form only if a physical control is proposed (installed hydraulic control system, slurry wall, cap, etc.). Provide in Attachment 5B a detailed cost estimate for a third party to operate and maintain the physical control during the PRAC period, based on current dollar amount.

Specify the physical control to which this information applies Site cap

Complete this worksheet for each physical control that will be used as part of the response action.

What is the total estimated annual cost of O&M for the PRAC period? $1,000

What is the total estimated cost for a third party to perform PRAC activities? $30,000

Identify the type of financial assurance mechanism to be used, and the contact person managing fiduciary responsibility, if known.

City of Galveston General Fund, Mike Loftin, Finance Director.

Does the person meet the criteria and definition of a small business? (see §350.33(n)) ___ Yes x No
If yes and the person desires to pursue the reduced amount of financial assurance, provide a legally binding affidavit as Attachment 5C. Include in the affidavit the information requested in 30 TAC §350.33(l), (m), and (n). An example affidavit is attached in the instructions.

ATTACHMENT 5A

Not Applicable.

ATTACHMENT 5B

PRAC Costs

Not Applicable.

ATTACHMENT 5C

Small Business Affidavit

Not Applicable.

WORKSHEET 6.0

Implementation Schedule

Implementation Schedule	RAP Worksheet 6.0 Page 1 of 1	
	ID No.: VCP No. 1962	Report Date: August 2016

Document the proposed schedule for implementing the response action. Include all major response action activities through the life of the project, including all removal, decontamination, and control actions, component installations, O&M, monitoring, and post-response action care activities.

Implementation of Response Action (specify component or action)	**Start**	**Finish**	**Duration**
Approval of RAP	Dependent on RAP submittal and review		
Design Response Action (RA)	Upon RAP approval		2 months
Bidding Procedure for RA	Upon completion of RAP Design		1 month
Contract Procedure for Selected RA Contractor	Upon completion of Bidding		1 month
Mobilization, Permitting, Health and Safety Set up	Upon Signing of Contract		1 month
Demolition/removal of incinerator and AST	Upon completion of mobilization and health and safety set up		2 months
Regrading of site	Upon completion of demolition/ removal of incinerator and AST		1 month
Construction of cap	Upon completion of regrading of Site		2 months
Punch List, RA Closeout Activities	Upon completion of cap construction		1 month
RA Completion	Upon completion of closeout activities		0 months
Response Action Completion Report – Draft Submittal	2 months after RA Completion		3 months
Response Action Completion Report- Comment Response	1 month after Draft Submittal		1 month
Response Action Completion Report – Final Submittal	0.5 month after Comment Responses	Response Action Completion Report – Final Submittal	0.5 month after Comment Responses
TCEQ Approval of RACR	Variable	TCEQ Approval of RACR	Variable
Annual Post-Response Action Care Inspection	--		1 day
Post-Response Action Care Report – Draft Submittal	--		Post-Response Action Care Report – Draft Submittal
Post-Response Action Care Report – Comment Response	--		Post-Response Action Care Report – Comment Response

List the proposed schedule for report submittals. Add additional lines if more reports than listed will be needed to complete the response action.

Reports	**Submittal date**
Response Action Effectiveness Report (RAER)	
RAER submittal number 1	N/A
RAER submittal number 2	N/A
RAER submittal number 3	N/A
Response Action Completion Report (RACR)	Within 90 days of completion of the response action
Post-Response Action Care Report (PRACR)	
PRACR submittal number 1	1 year from the date of TCEQ approval of the RACR
Future PRACRs	Every 3 years until 2047

APPENDIX 1

References

6.0 References

AECOM, January 2016. Affected Property Assessment Report.

AECOM, July 8, 2016. Municipal Setting Designation (MSD) Texas Commission on Environmental Quality (TCEQ) Application.

City of Galveston (COG), May 27, 2016. MSD Ordinance No. 16-039.

Texas Commission on Environmental Quality (TCEQ), April 28, 2016. Letter from Richard Peltier (TCEQ) to COG, General Comments Letter to January 14, 2016 APAR.

APPENDIX 2

Data Tables and Boring Logs

Not Applicable.

APPENDIX 3

Studies and Tests Documentation

Not Applicable.

APPENDIX 4

Proposed Institutional Controls

Texas Risk Reduction Program

Deed Notice

STATE OF TEXAS §

§

COUNTY OF GALVESTON §

This Notice is filed to provide information concerning certain environmental conditions and/or use limitations pursuant to the Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program Rule (TRRP) found at 30 Texas Administrative Code (TAC), Chapter 350, and affects the real property (Property) described as follows:

A survey plat and legal description for the site and remainder of the affected property is attached. This site is described as City of Galveston Residual of Lot 13 Volume 643 Page 70 G.C.D.R.

Portions of the ***soils and groundwater*** of the Property contain certain identified chemicals of concern causing those portions of the Property to be considered an Affected Property as that term is defined in the Texas Risk Reduction Program (TRRP). The portion considered to be Affected Property is described as follows:

Exhibit B is attached hereto and incorporated herein by reference. Exhibit B includes a metes and bounds description of the Affected Property and a plat map clearly demarcating the portions of the Property that contain the Affected Property. The map contains a north arrow, a correlating map scale, and a legend identifying any used symbols or abbreviations. The metes and bounds description and plat map is accompanied by a certification from a registered professional land surveyor so registered by the Texas Board of Professional Surveying attesting to the accuracy of the descriptions. The table below shows each chemical of concern by environmental medium that exceeds the applicable critical Protective Concentration Level.

Chemical of Concern	Critical PCL (mg/kg)	Maximum Soil Concentration (mg/kg)
Arsenic	200	229
Benzo(a)pyrene	2.4	3.3
Lead	1,600	30,400
Mercury	3.3	13.4

mg/kg – Milligrams per kilogram.
PCL – Protective concentration level.

This Notice is required for the following reasons:

[Include appropriate paragraph(s) from the Appendix A Inserts Paragraphs for Deed Notice Form]

As of the date of this Notice, the record owner of fee title to the Property is _____with an address of _____.

For additional information, contact:

TCEQ
Central Records
12100 Park 35 Circle, Building E
Austin, Texas 78753

Mail:
TCEQ – MC 199
P.O. Box 13087
Austin, Texas 78711-3087

TCEQ Program and Identifier No.: VCP No. 1962

This Notice may be rendered of no further force or effect only by a superseding deed notice executed by the TCEQ or its successor agencies and filed in the same Real Property Records as those in which this Deed Notice is filed.

Executed this _____day of _____,_____.

[OWNER or RESPONDER]

By:_____

Name:_____

Title:_____

STATE OF TEXAS

TRAVIS COUNTY

BEFORE ME, on this the_____day of _____, personally appeared _____[***name***]_____ , _____[***title***]_____, of _____[***company***]_____, known to me to be the person whose name is subscribed to the foregoing instrument, and they acknowledged to me that they executed the same for the purposes and consideration therein expressed.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, this the _____ day of _____, ____.

Notary Public in and for the State of Texas

County of Travis

My Commission Expires: _____

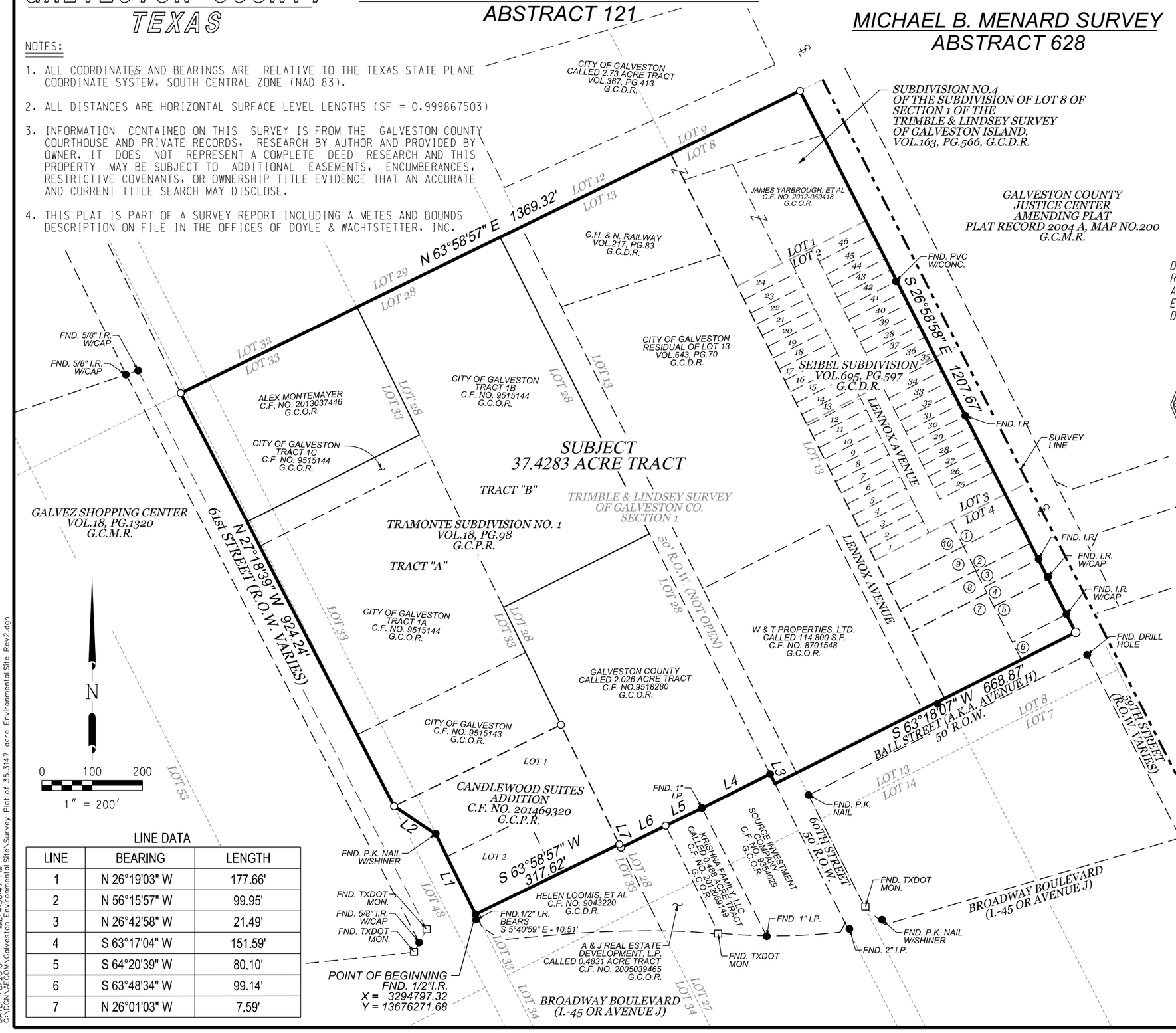
GALVESTON COUNTY TEXAS

EDWARD HALL & LEVI JONES SURVEY ABSTRACT 121

MICHAEL B. MENARD SURVEY ABSTRACT 628

NOTES:

1. ALL COORDINATES AND BEARINGS ARE RELATIVE TO THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE (NAD 83).
2. ALL DISTANCES ARE HORIZONTAL SURFACE LEVEL LENGTHS (SF = 0.999867503)
3. INFORMATION CONTAINED ON THIS SURVEY IS FROM THE GALVESTON COUNTY COURTHOUSE AND PRIVATE RECORDS, RESEARCH BY AUTHOR AND PROVIDED BY OWNER. IT DOES NOT REPRESENT A COMPLETE DEED RESEARCH AND THIS PROPERTY MAY BE SUBJECT TO ADDITIONAL EASEMENTS, ENCUMBERANCES, RESTRICTIVE COVENANTS, OR OWNERSHIP TITLE EVIDENCE THAT AN ACCURATE AND CURRENT TITLE SEARCH MAY DISCLOSE.
4. THIS PLAT IS PART OF A SURVEY REPORT INCLUDING A METES AND BOUNDS DESCRIPTION ON FILE IN THE OFFICES OF DOYLE & WACHTSTETTER, INC.



OWNERSHIP TABLE

TRACT	OWNER	RECORDED IN
1	SARAH J. ALFORD	C.F. NO. 9825869, G.C.O.R.
2	ROBERT E. HOSKINS, ET AL	C.F. NO. 2013061965, G.C.O.R.
3	LUMBERMAN HOMES, INC.	C.F. NO. 2009027497, G.C.O.R.
4	TROY MCLEHANY	C.F. NO. 2005077328, G.C.O.R.
5	CHARLES KAUFMANN, ET AL	C.F. NO. 2011058646, G.C.O.R.
6	CITY OF GALVESTON	C.F. NO. 2001054058, G.C.O.R.
7	JESUS G. SALINAS, ET AL	C.F. NO. 2000039656, G.C.O.R.
8	DAVID J. BROWN	C.F. NO. 2000006770, G.C.O.R.
9	WILBERT WILLIAMS	C.F. NO. 9536805, G.C.O.R.
10	ROSARIA TROST	VOL.1639, PG.299, G.C.D.R.

I, Wm. PATRICK DOYLE, REGISTERED PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT THE ABOVE AND FOREGOING PLAT IS A TRUE REPRESENTATION OF A SURVEY MADE UNDER MY SUPERVISION, ON THE GROUND, AND THAT THERE ARE NO EXCESSES NOR INTRUSIONS ON THIS PROPERTY, EXCEPT AS SHOWN HEREON.
DATE SURVEYED: DECEMBER 9, 2015

STATE OF TEXAS REGISTERED WM. PATRICK DOYLE 4467 PROFESSIONAL LAND SURVEYOR

WM. PATRICK DOYLE
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NUMBER 4467

LINE DATA

LINE	BEARING	LENGTH
1	N 26°19'03" W	177.66'
2	N 56°15'57" W	99.95'
3	N 26°42'58" W	21.49'
4	S 63°17'04" W	151.59'
5	S 64°20'39" W	80.10'
6	S 63°48'34" W	99.14'
7	N 26°01'03" W	7.59'

SURVEY PLAT OF

37.4283 ACRE TRACT

BEING A PORTION OF ALL THAT CERTAIN LOTS 8, 13, 28 AND 32 OF THE SECTION 1 OF THE TRIMBLE & LINDSEY SURVEY OF GALVESTON ISLAND

IN THE

EDWARD HALL & LEVI JONES SURVEY ABSTRACT 121 GALVESTON COUNTY, TEXAS.

FOR

AECOM

SHEET 1 OF 1

Doyle & Wachtstetter, Inc.
Surveying and Mapping GPS/GIS
131 COMMERCE STREET, CLUTE, TEXAS 77531
OFFICE: 979.265.3622 FAX. 979.265.9940 FIRM NO.:10024500

SURVEYED:	12-9-15	BOOK:	GALVESTON VOL.2	PROJECT NO.	954-15-03
DRAWN BY:	JAM/12-23-15	CHECKED:	WPD/12-23-15	REVISED:	

USER: Untitled Workspace
DATE: 1/8/2016 TIME: 4:56:47 PM
G:\DON\AECOM\Galveston Environmental Site\Survey Plat of 35.3147 acre Environmental Site Rev2.dgn

Doyle & Wachtstetter, Inc
Surveying and Mapping • GPS/GIS

37.4283 ACRE TRACT
EDWARD HALL & LEVI JONES SURVEY, ABSTRACT 121
GALVESTON COUNTY, TEXAS

ALL THAT CERTAIN 37.4283 ACRE tract, situated and lying in the Edward Hall and Levi Jones Survey, Abstract 121, Galveston County, Texas, being a portion of the Lots 8, 13, 28 and 33 of the unrecorded plat of Section 1 of the Trimble and Lindsey Survey of Galveston County, being all of Lot 1 and a portion of Lot 4 of Subdivision No. 4 of the Subdivision of Lot 8 of Section 1 of the Trimble and Lindsey Survey, according to the map or plat recorded in Volume 163, Page 566 of the Galveston County Deed Records (G.C.D.R.), Lots 1 through 46 and a 50 foot right-of-way according to the map or plat thereof of the Seibel Subdivision of Tracts 2 and 3, Division 8, Section 1 of the Trimble and Lindsey Survey of Galveston County, according to the map or plat thereof recorded in Volume 695, Page 597 of the G.C.D.R., all of Tract A and Tract B of the Final Tramonte Subdivision No. 1, according to the map or plat thereof recorded in Volume 18, Page 98 of the Galveston County Plat Records (G.C.P.R.) and Lots 1 and 2 of Candlewood Suites Addition, according to the map or plat thereof recorded in Clerk's File No. 201469320 of the G.C.P.R., said 37.4283 acre tract being comprised of the following tracts: a portion of all that certain called 2.026 acre tract conveyed by deed recorded on May 22, 1995 from the University National Bank to The City of Galveston County, Texas, as recorded in Clerk's File No. 9518280 of the Galveston County Official Records (G.C.O.R.), all that certain tract conveyed by deed recorded on April 28, 1995 from the Bank of the West to the City of Galveston as recorded in Clerk's File No. 9515143 of the G.C.O.R., all those certain tracts, Tract 1A, 1B and 1C, being a portion of Tract A and Tract B of Tramonte Subdivision, conveyed by deed recorded April 28, 1995 from The Moody National Bank of Galveston to The City of Galveston as recorded in Clerk's File No. 9515144 of the G.C.O.R., all that certain tract of land conveyed by deed recorded on June 14, 2013 from Peter G. Kovacevich, et ux to Alex Montemayor as recorded in Clerk's File No. 2013037446 of the G.C.O.R., all that certain tract of land, being a portion of said Lot 13 of Section 1 of the Trimble and Lindsey Survey of Galveston County and a portion of Lot No 1 of Subdivision No. 4 of the Subdivision of Lot 8 of Section 1 of the Trimble and Lindsey Survey, conveyed by deed recorded on June 9, 1906 from the Galveston, Houston & Northern Railway Company to The Galveston, Harrisburg and San Antonio Railway Company as recorded in Volume 217, Page 83 of the G.C.D.R., all that certain tract of land conveyed by deed recorded on March 10, 1942 from B. C. Franklin Leonard, et al, to the City of Galveston as recorded in Volume 643, Page 70 of the G.C.D.R., all those certain tracts of land conveyed by deed recorded on December 19, 2012 from James D. Yarbrough to James D. Yarbrough, et al as recorded in Clerk's File No. 2012069418 of the G.C.O.R., a portion of all that certain called 114,600 square foot tract of land, conveyed by deed recorded on January 13, 1987 from Watson & Taylor Realty Company to W&T Properties, Ltd., as recorded in Clerk's File No. 8701548 of the G.C.O.R., all that certain tract of land conveyed by deed recorded on June 5, 1998 from John Reed, et ux to Sarah J. Alford, as recorded in Clerk's File No. 9825869 of the G.C.O.R., all that certain tract of land conveyed by Affidavit of Heirship recorded on September 27, 2013 to Robert E. Hoskins, et al as recorded in Clerk's File No. 2013061965 of the G.C.O.R., all that certain tract of land conveyed by sheriff's deed recorded on May 26, 2009 from the County of Galveston, et al to Lumberman Homes, Inc. as recorded in Clerk's File No. 2009027497 of the G.C.O.R., all that certain tract of land conveyed by deed recorded on November 9, 2005 from Wilbert Williams to Troy McLehany as recorded in Clerk's File No. 2005077328 of the G.C.O.R., all that certain called 0.2222 acre tract of land conveyed by deed recorded on November 17, 2011 from Troy McLehany to Charles Kaufmann, et al as recorded in Clerk's File No. 2011058646 of the G.C.O.R., all that certain called 0.111 acre tract conveyed by deed recorded on October 15, 2001 from Wilbert Williams to the City of Galveston as recorded in Clerk's File No. 2001054058 of the G.C.O.R., all that certain tract of land conveyed by deed recorded on August 7, 2000 from Federico Aguillon to Jesus G. Salinas, et al as recorded in Clerk's File No. 2000039656 of the G.C.O.R., all that certain tract of land conveyed by sheriffs deed recorded on February 14, 200 from Galveston Independent School District, et al to David J. Brown, as recorded in Clerk's File No. 2000006770 of the G.C.O.R., all that certain tract of land, conveyed by deed recorded on September 25, 1995 from Viola Jones to Wilbert Williams as recorded in Clerk's File No. 9536805 of the G.C.O.R., all that certain tract of land tract of land conveyed by deed recorded on July 14, 1964 from Jessie Mae Thompson Sowell to Rosaria Trost as recorded in Volume 1639, Page 299 of the G.C.D.R., said herein described 37.4283 acre tract hereby conveyed being more particularly described by metes and bounds, using survey terminology which refers to the Texas State Plane Coordinate System, South Central Zone (NAD 83), in which the directions are Lambert grid bearings and the distances are surface level horizontal lengths, (S.F. = 0.999867503) as follows:

37.4283 ACRE TRACT
EDWARD HALL & LEVI JONES SURVEY, ABSTRACT 121
GALVESTON COUNTY, TEXAS

BEGINNING at a ½" iron rod found marking the South corner of Lot 2 of said Candlewood Suites Addition, same being the northwest corner of all that certain tract of land, conveyed by deed recorded on December 28, 1990 from Helen Loomis, et al to Helen Loomis, et al, as recorded in Clerk's File No. 9043220 of the G.C.O.R., located on the northeastern right-of-way boundary line of 61st Street (right-of-way varies), for the South corner of the herein described 37.4283 acre tract, said Point of Beginning being located at Texas State Plane coordinate position X=3294797.32 and Y=13676271.68;

THENCE North 26°19'03" West, coincident with the northeastern right-of-way boundary line of said 61st Street (right-of-way varies), same being the southwestern boundary line of Lot 1 and Lot 2 of said Candlewood Suites Addition, a distance of 177.66 feet to a p.k. nail found marking an angle corner of Lot 1 of said Candlewood Suites and the herein described 37.4283 acre tract, at position X=3294718.57 and Y=13676430.91;

THENCE North 56°15'57" West, coincident with the northeastern right-of-way boundary line of said 61st Street (right-of-way varies), same being the southwestern boundary line of Lot 1 of said Candlewood Suites Addition, a distance of 99.95 feet to a point for the West corner of said Lot 1 of Candlewood Suites Addition, same being the South corner of said Tract "A" of Tramonte Subdivision No. 1 and the South corner of said City of Galveston tract, recorded in Clerk's File No. 9515143 of the G.C.O.R., for an angle corner of the herein described 37.4283 acre tract, at position X=3294635.49 and Y=13676486.40;

THENCE North 27°18'39" West, coincident with the northeastern right-of-way boundary line of said 61st Street (right-of-way varies), the southwestern boundary line of said Tract "A" and Tract "B" of said Tramonte Subdivision No. 1, same being the southwestern boundary line of said City of Galveston tract recorded in Clerk's File No. 9515143, the southwest boundary line of said City of Galveston Tract 1A and Tract 1C and the southwestern boundary line of said Alex Montemayor tract, a distance of 924.24 feet to the West corner of said Alex Montemayor tract and the West corner of the herein described 37.4283 acre tract, at position X=3294211.46 and Y=13677307.51;

THENCE North 63°58'57" East, coincident with the northwestern boundary line of said Lot 33, Lot 28, Lot 13 and Lot 8 same being the northwestern boundary line of said Alex Montemayor tract, the northwestern boundary line of said City of Galveston Tract 1B, the northwestern boundary line of said Galveston, Harrisburg & San Antonio Railway Company, a distance of 1369.32 feet to the North corner of said Lot 1 of Subdivision No. 4 of Lot 8 of Section 1 of the Trimble and Lindsey Survey of Galveston Island, located on the southwestern right-of-way boundary line of 59th Street, right-of-way varies, for the North corner of the herein described 37.4283 acre tract, at position X=3295441.85 and Y= 13677908.08;

THENCE South 26°58'58" East, coincident with the southwestern right-of-way boundary line of said 59th Street, right-of-way varies, the northeastern boundary line of said Lot 8 of Section 1 of the Trimble and Lindsey Survey of Galveston Island, same being the northeastern boundary line of the said Galveston, Harrisburg and San Antonio Railway Company tract, the northeastern boundary line of said James Yarbrough, et all tract, the northeastern boundary line of Lots 25 through 46 of said Seibel Subdivision, the northeastern boundary line of said Sarah J. Alford tract, said Robert E. Hoskins, et al tract, said Lumberman Homes, Inc. tract, said Troy McLehany tract, said Charles Kaufmann, et al tract and said City of Galveston called 0.111 acre tract, a distance of 1207.67 feet to the intersection of the southwestern right-of-way boundary line of said 59th Street (right-of-way varies) and 50 foot wide Ball Street (A.K.A Avenue H) for the East corner of said City of Galveston called 0.111 acre tract and the herein described 37.4283 acre tract, at position X=3295989.72 and Y=13676832.01;

THENCE South 63°18'07" West, coincident with the northwestern right-of-way boundary line of said 50 foot wide Ball Street, same being the southeastern boundary line of said City of Galveston called 0.111 acre tract and the southeastern boundary line of said Jesus G. Salinas, et al tract, a distance of 668.87 feet to the intersection of the northwestern right-of-way boundary line of said 50 foot wide Ball Street and the southwestern right-of-way boundary line of 50 foot wide 60th Street, same being the northeastern boundary line of all that certain tract of land conveyed by deed recorded on December 21, 1993 from Bayshore National Bank of La Porte to Source Investment Company as recorded in Clerk's File No. 9354029 of the G.C.O.R., for an exterior corner of the herein described 37.4283 acre tract, at position X=3295392.24 and Y=13676531.54;

37.4283 ACRE TRACT
EDWARD HALL & LEVI JONES SURVEY, ABSTRACT 121
GALVESTON COUNTY, TEXAS

THENCE North 26°42'58" West, coincident with the southwestern right-of-way boundary line of said 50 foot wide 60th Street, same being the northeastern boundary line of said Source Investment Company tract, a distance of 21.49 feet to a 2" iron pipe found marking the North corner of said Source Investment Company tract and the South corner of said City of Galveston called 2.026 acre tract, for an interior corner of the herein described 37.4283 acre tract, at position X=3295382.58 and Y=13676550.74;

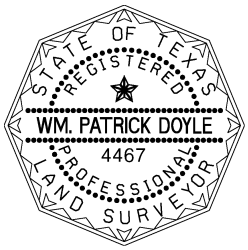
THENCE South 63°17'04" West, coincident with the southeastern boundary line of said City of Galveston called 2.026 acre tract, same being the northwestern boundary line of said Source Investment Company tract, a distance of 151.59 feet to a 1" iron pipe found marking the West corner of said Source Investment Company tract, same being the North corner of that certain tract of land conveyed by deed recorded on December 19, 2012 from Kiritkumar Masrani, M.D., et al to Krishna Family, LLC as recorded in Clerk's File No. 2012069149 of the G.C.O.R., for an angle corner of the herein described 37.4283 acre tract, at position X=3295247.19 and Y=13676482.59;

THENCE South 64°20'39" West, coincident with the southeastern boundary line of said City of Galveston called 2.026 acre tract, same being the northwestern boundary line of said Krishna Family, LLC tract, a distance of 80.10 feet to a point, for the West corner of said Krishna Family LLC tract, same being the North corner of all that certain called 0.4831 acre tract conveyed by deed recorded on June 14, 2005 from Raffaella Viotto to A & J Real Estate Development, L.P., as recorded in Clerk's File No. 2005-039465 of the G.C.O.R., for an angle corner of the herein described 37.4283 acre tract, at position X=3295174.99 and Y=13676447.92;

THENCE South 63°48'34" West, coincident with the southeastern boundary line of said City of Galveston called 2.026 acre tract, same being the northwestern boundary line of said A & J Real Estate Development, L.P. called 0.4831 acre tract, a distance of 99.14 feet to a point, located on the northeastern boundary line of said Helen Loomis, et al tract, for an exterior corner of the herein described 37.4283 acre tract, at position X=3295086.04 and Y=13676404.17;

THENCE North 26°01'03" West, coincident with the southwestern boundary line of said City of Galveston called 2.026 acre tract, same being the northeastern boundary line of said Helen Loomis, et al tract, a distance of 7.59 feet to the North corner of said Helen Loomis, et al tract, same being the East corner of Lot 1 of said Candlewood Suites Addition, for an interior corner of the herein described 37.4283 acre tract, at position X=3294966.93 and Y=13676648.20;

THENCE South 63°58'57" West, coincident with the southeastern boundary line of Lot 1 and Lot 2 of said Candlewood Suites Addition, a distance of 317.62 feet to the **POINT OF BEGINNING**, containing 37.4283 acres of land, more or less.



Wm. Patrick Doyle
Registered Professional Land Surveyor
Texas Registration Number 4467
December 23, 2015
Revised: January 8, 2016

This description is based on a survey, a plat of which, dated December 23, 2015 is on file in the office of Doyle & Wachtstetter, Inc.
G:\DGN\AECOM\Galveston Environmental Site\AECOM 37.4283 acre tract - Galveston Rev2.doc

APPENDIX 5

Landowner Concurrence

Not Applicable.

APPENDIX 6

Sampling Procedures

Not Applicable.

APPENDIX 7

Statistical Methodology

Not Applicable.

APPENDIX 8

Split Media Approval

Not Applicable.