



INTERIM MEASURES COMPLETION REPORT

OCTOBER 20, 2016

SPRINGDALE CREEK APARTMENTS – NORTH END
2510 JACKSON AVENUE
MEMPHIS, SHELBY COUNTY, TN

Prepared For:
Velsicol Chemical, LLC
1199 Warford Street
Memphis, TN

Prepared by:
ATC Group Services, LLC
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Reviewed by:


Dave Schmidt, P.E.

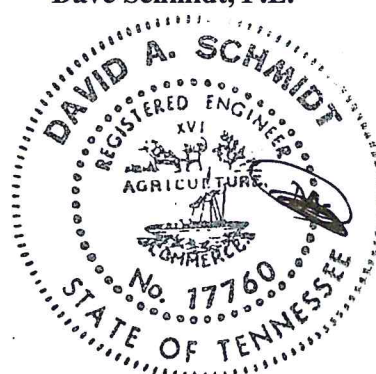


TABLE OF CONTENTS

1.0	INTRODUCTION.....	1
2.0	GENERAL WORK	1
3.0	IDENTIFICATION AND TESTING OF BORROW MATERIAL	3
4.0	AIR MONITORING	4
4.1	Dust Monitoring.....	4
4.2	Air Sampling	4
5.0	INTERIM MEASURES IMPLEMENTATION	4
5.1	Site Preparation	4
5.2	Hot-Spot Consolidation	5
5.3	Site Grading and Barrier Soil Placement.....	5
5.4	Site Restoration/Seeding	6
6.0	REGULATORY INSPECTIONS.....	6
7.0	CONTINUING O&M.....	6
8.0	COST SUMMARY	7

APPENDICES

Appendix A	TDEC Correspondence
Appendix B	Confirmation Survey
Appendix C	Waste Disposal Manifests
Appendix D	Borrow Soil Analytical Results
Appendix E	Dust Monitoring Record
Appendix F	Air Sampling Analytical Results
Appendix G	Site Photographs

1.0 INTRODUCTION

Environmental Compliance Services, Inc. (ECS) has prepared the following report on behalf of Velsicol Chemical, LLC (Velsicol), to document the implementation of remediation activities at the Springdale Apartments-North End site located at 2510 Jackson Avenue, in Memphis, Shelby County, Tennessee. Please note, on October 17, 2016, ECS was acquired by ATC Group Services, LLC. The work was completed in accordance with the recommendations outlined as Alternative 2 in the Revised Corrective Measures Study, Springdale Apartments-North End, dated June 27, 2013, which was approved by the Tennessee Department of Environment and Conservation (TDEC), Division of Solid Waste Management by letter dated June 2, 2014. A copy of the TDEC Correspondence is included in **Appendix A**.

ECS was retained by Velsicol to develop engineering plans and specifications for implementation of the remedial measures, to support the selection of a remediation contractor, provide project observation during construction, and provide verification of the remediation goals.

Velsicol selected DeNovo Constructors, Inc. (Denovo) as the remedial contractor for the project. During the course of the project completion, Denovo was unable to meet their obligation to the project and miscellaneous site maintenance activities were completed by Jim's Tank Service, LLC, and final soil contouring and seeding was completed by Economic Erosion Control, LLC.

This report provides a description of activities completed to establish the soil cap, including:

- Site clearing activities;
- Concrete slab removal;
- Hot-spot excavation and consolidation;
- Site grading; and,
- Marker layer placement and establishment of the soil cap.

2.0 GENERAL WORK

Memphis Environmental Center (MEC) managed the project on behalf of Velsicol and served as the primary point of contact with TDEC during completion of the project. Prior to commencement of work, Denovo prepared a Site Specific Health and Safety Plan (hereafter referred to as the HASP) and implemented the HASP during project completion.

The August 10, 2016, General Work Plan outlined the scope of work for the corrective measures implementation. No deviations to the Work Plan were required during the implementation of the remedial measures.

The primary site work was conducted by Denovo from October 5, 2015, to February 13, 2015. After initial site clearing, hot-spot removal, removal of six concrete building slabs, and establishment of the rough grade, orange plastic construction fencing was placed as a marker layer and a minimum 15-inch thick soil barrier was placed over the entire site with the exception of the area at the top of the Cypress Creek Retaining Wall. As discussed with TDEC representatives during the annual Facility Action Plan meeting conducted on June 24, 2015, and as outlined in the General Work Plan, large trees along the Cypress Creek retaining wall were left in place to prevent damage to the wall during tree/root removal. Extensive tree root systems prevented excavation of existing soil in certain locations, and stable slopes could not be established for placement of the 15-inch cap. Marker layer was installed and barrier soil was placed at the maximum thickness possible to establish smooth transitions to provide a barrier soil cover while also limiting erosion potential of the barrier soil. A six-foot chain link fence was installed as an additional site control measure to limit access to this area.

Prior to the start of site work, a Stormwater Pollution Prevention Plan was developed and the Notice of Intent was submitted to the TDEC Division of Water Pollution Control on August 13, 2015. A Notice of Coverage was received on September 25, 2015. Stormwater controls were maintained throughout the project and required inspections were conducted by Tennessee Erosion Prevention & Sediment Control Level 1 certified personnel throughout the project.

During March and April, 2016, Jim's Tank Service responded to the site to maintain silt fences and stormwater inlet sediment controls in accordance with requirements of the construction stormwater pollution prevention plan (SWPPP) permit. Additional controls were also installed in high-flow areas that exhibited greater erosion potential. In June and July 2016, Economic Erosion Control mobilized equipment and additional borrow-soil to adjust final soil cap elevations and to seed the final surface.

During the project, surveying was overseen by a Tennessee Registered Land Surveyor to document the rough grade surface elevation and document the elevation of the completed soil backfill to confirm placement of 15 inches of clean barrier soil. Confirmation of the barrier soil thickness is shown on the confirmation survey included in **Appendix B**. During site clearing, grass and smaller aboveground vegetation was generally mulched in place. Larger pieces of vegetation (trees/roots) and miscellaneous debris was hauled to the Tunica Landfill, a Class 1 landfill operated by Waste Management, Inc. for disposal under profile #400736MS. Soil was removed from all vegetation and debris prior to removing it from the site. Non-hazardous waste disposal manifests generated during the project are included in **Appendix C**.

3.0 IDENTIFICATION AND TESTING OF BORROW MATERIAL

Prior to construction work on the project, Denovo identified a soil source from a construction project at Rhodes College. On July 8, 2015, ECS collected a sample from the in-situ borrow source. An 8-alliquot composite sample was collected from the borrow source for analysis to confirm the soil was not chemically impaired and was within project requirements outlined in Technical Section 02210, Part 2.01, of the Project Specifications.

The sample was submitted to Environmental Testing and Consulting, Inc., (ETC) in Memphis, Tennessee, for analysis of agronomic parameters to determine the suitability for vegetation growth. Environmental parameters including volatile organic compounds, semi-volatile organic compound, pesticides, PCBs, and metals were also analyzed. The moisture content of the sample was also determined, so that the data could be converted to dry weight basis. Laboratory results indicate all parameters were not detected or were below U.S. Environmental Protection Agency, Regional Screening Levels (RSLs) for residential soils, with the exception of arsenic. The arsenic concentration of 9.78 milligrams per kilograms (mg/kg) was greater than its RSL, as often occurs due to background levels in the Memphis area. According to a Tennessee Division of Superfund Survey cited in the "Hazardous Trace Elements in Tennessee Soils and Other Regolith" completed by the TDEC Division of Geology in 2001, the naturally occurring background level of arsenic in Tennessee is 10 ppm. Therefore, the arsenic concentrations observed in the borrow soil does not appear to be a concern. Additionally, this concentration is lower than the 20 mg/kg background level that has been approved by TDEC on previous Cypress Creek remediation work performed by Velsicol.

During confirmation surveying of the soil cap thickness some adjustments to the cap thickness were determined necessary. An additional borrow source was located at a construction site at the University of Memphis, and on June 20, 2016, ECS collected a 5-alliquot composite sample from the borrow source. The sample was submitted to Waypoint Analytical (ETC was re-organized and is now known as Waypoint) and analyzed for volatile organic compounds, semi-volatile organic compound, pesticides, PCBs, and metals. Similar to the Rhodes College soil, arsenic (8.38 mg/kg) was greater than the RSL, but lower than the background levels. All other constituents analyzed were below the respective RSLs. Agronomics were not analyzed for the University of Memphis borrow source.

The laboratory analytical reports are included in **Appendix D**.

4.0 AIR MONITORING

4.1 Dust Monitoring

During hot-spot excavation and disturbance of on-site soil while establishing the rough grade, real-time dust monitoring was performed using Thermos pDR-1500 dust monitors. Dust monitors were placed along property lines near the work area and downwind of the primary site disturbance activity. The monitors were inspected periodically while operating and readings were recorded. Dust monitoring was performed on October 20, 2015, during hot-spot excavation, and on October 29 and 30, 2016, while on-site soil was relocated for establishing the rough grade. The maximum real-time dust concentration observed was 17.4 ug/m³ and the highest time weighted average at the completion of any individual sampling event was 8.6 ug/m³, which both are under the action level established in the Work Plan. A log of dust monitoring results is included in **Appendix E**.

4.2 Air Sampling

In accordance with the Work Plan, one outdoor air sample was collected per week during disturbance of on-site soil. One air sample was collected during hot-spot excavation on October 20, 2016. After removal and consolidation of the hot-spot soil, minimal site work was conducted for several days due to rain. Establishment of the rough grade was primarily conducted from October 28 through 30, 2015, and the second air sample was collected on October 29, 2016. In addition to these samples, one background air sample was collected on September 4, 2015, prior to the start of site activities. Samples were collected on glass fiber filter backed up by an OVS-2 tube and submitted to ESIS Environmental Health Laboratory, in Cromwell, Connecticut. Samples were analyzed for Dieldrin and Endrin by Gas Chromatography in accordance with OSHA 67-OVS XAD-2.

The only constituent above the laboratory detection levels was Endrin (0.0337 ug, or 0.000069 mg/m³) in the sample collected on October 29, 2016. This level is below the OSHA worker exposure limit (0.1 mg/m³). Furthermore, this low concentration would rapidly attenuate beyond the project boundaries, which would minimize any residual off-site impacts. The laboratory analytical reports are included in **Appendix F**.

5.0 INTERIM MEASURES IMPLEMENTATION

5.1 Site Preparation

Initial site clearing work began on October 5, 2015, with cutting of the grass, trees, and brush on the project site. Removal of the concrete slabs began on October 6, 2015. The majority of the clearing and concrete removal was completed by October 15, 2015; however, some

miscellaneous vegetation and debris was removed after this date. In accordance with the August 10, 2015, Work Plan, concrete slabs were decontaminated and transported to Velsicol's plant site at 1199 Warford Street for recycling and use as grading material at the plant site.

5.2 Hot-Spot Consolidation

Surveyors mobilized to the site on October 15, 2015, and located the six hot-spots identified in the Revised Corrective Measures Study dated June 27, 2013. On October 20, 2015, the hot-spots were excavated and the soil was transported to the Velsicol plant site at 1199 Warford Street, and placed in the Consolidation Area. On October 21, 2015, the surveyors returned to the site to confirm the extent and depth of the hot-spot excavations, and on October 22, 2015, the soil at the Consolidation Area was covered and secured with 60-mil HDPE.

5.3 Site Grading and Barrier Soil Placement

From October 22, 2015, through November 4, 2015, native on-site soil was graded (rough grade surface) to establish contours to channel stormwater to the existing on-site drainage system. The northern drop-inlet was converted to an at-grade inlet and two manholes on the stormwater system were raised to match the final grade of the site. While establishing the rough grade, the contractor also closed out two inactive sanitary sewer manholes located on the project site.

Placement of the orange plastic construction fence marker layer and the 15-inch soil cap began on November 5, 2015. Due to several rain delays and the holidays, the soil cap installation extended through January 12, 2016. The surveyors collected the final elevations of the soil cap surface on January 12, 2016. Isolated areas were determined to have slightly less than 15 inches of cap soil; therefore, the contractor added additional soil to these areas and the surveyors captured the new elevations on January 18, 2016.

During preparation of the final site survey drawing, it was determined several areas of the site contained less than 15 inches of soil cap. Required modifications to the surface cap were not conducted during the wet spring months, and from February–May 2016 the SWPPP inspections continued and occasional modifications to the stormwater controls and repairs to erosion issues were made. In June 2016 the site was re-graded to relocate cap soil from areas with greater than 15 inches to areas with less than 15 inches of soil, and off-site soil was brought in to supplement the necessary soil volume. Confirmation surveying of the soil cap thicknesses was conducted on July 1, 2016.

5.4 Site Restoration/Seeding

The north end of the site was initially seeded on January 18, 2016; however, problems occurred with the equipment due to the cold weather and the seeding was stopped. The contractor returned to the site in February 2016 and completed seeding the site. After the site was re-worked in June 2016, the site was re-seeded on July 6 and July 13, 2016.

A 6-foot chain link fence installed along the western property boundary was completed on January 17, 2016, and the 6-foot chain link fence along the Cypress Creek wall and the access gate on the east side of the site were completed on January 27, 2016. In addition to the main gate to the site, a personnel access gate was installed between the fence and the Cypress Creek wall to restrict access to this area. During site clearing and vegetation removal several sections of the 4-foot chain link fence along the top of the Cypress Creek retaining wall were damaged. Repairs to this fence were completed on February 4, 2016. Project photos are included in **Appendix G**.

6.0 REGULATORY INSPECTIONS

During implementation of the corrective measures representatives from the TDEC Memphis Field Office visited the site on October 21, 2015, October 28, 2015, November 5, 2015, November 13, 2015, November 19, 2015, December 11, 2015, and December 18, 2015. Representatives of TDEC also visited the site during the annual FAP meeting conducted on March 29, 2016.

In addition to the TDEC inspections, representatives from the TDEC, Division of Water Pollution Control periodically inspected the site for the Stormwater Pollution Prevention Plan erosion control features installed at the site.

7.0 CONTINUING O&M

Representatives of Velsicol and ECS will continue to monitor the site through the Spring of 2017 to insure the newly planted vegetative cover provides adequate protection of the soil cap from erosion. On June 1, 2017, the site inspections and site maintenance will be turned over to the property owner. Clean soil has been stockpiled near the site entrance from Meagher Drive in the event erosion repairs are necessary.

8.0 COST SUMMARY

Following is a summary of the project costs through September 2016.

Major Work Elements	Cost
1. Project Development	\$28,141.16
2. Construction Oversight	\$31,854.00
3. Corrective Measures Implementation	
a. Site Clearing/Site Prep.	\$184,687.00
b. Concrete Demolition & Recycling	\$46,453.9
c. Hot Spot Excavation & Consolidation	\$31,980
d. Establish Rough Grade	\$29,579
e. Stormwater Inlet Modifications	\$6,140
f. Establish Final Grade	\$169,752.5
g. Site Restoration/Seeding	\$36,493.32
4. SWPPP Development/Inspections	\$18,787.50
5. Confirmation Surveying	\$8,069.42
6. Completion Report	\$2002.50
Total	\$593,940.30

APPENDIX A

TDEC Correspondence



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
Division of Solid Waste Management
William R. Snodgrass Tennessee Tower
312 Rosa L. Parks Ave, 14th Floor
Nashville, Tennessee 37243
Solid.Waste@tn.gov

Received 6-18-14
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FILE COPY

CERTIFIED MAIL # 7011 0110 0002 0048 2751
RETURN RECEIPT REQUESTED

June 2, 2014

Gary Hermann, P.E.
Memphis Environmental Center, Inc.
1199 Warford Street
Memphis, TN 38108-3418

Re: Response to Comments Dated, February 18, 2014
Revised Corrective Measure Study for Springdale Creek Apartments – North End,
June 27, 2013
Velsicol Chemical LLC, Memphis Facility, Site Identification Number: TND007024664

Dear Mr. Hermann:

The Division of Solid Waste Management (Division) and the Tennessee Department of Health (DOH) are granting approval for the Revised CMS for Springdale Creek Apartments, dated June 27, 2013. Velsicol adequately addressed all comments and concerns that were submitted by the Division and DOH on February 18, 2014. Velsicol may proceed with implementing the corrective measures at the Springdale Creek Apartments – North End.

Velsicol is required to inform the Division two weeks prior to any field activity. If there are any questions regarding this review, please contact me at (615) 532-0864 or you may email me at roger.donovan@tn.gov.

Sincerely,

Roger Donovan, P.G.
Corrective Action Permitting Section

cc: Brian Bastek, U.S EPA, Region 4
Joe George, DOH
Ahmet Bulbulkaya, DOR, Nashville
Jordon English, Manager, Memphis Field Office, DOR
William Krispin, Manager, Corrective Action Permitting Sections, DSWM
Charles Burroughs, Manager, Corrective Action Permitting Section, DSWM
Herb Nicholson, Manager, Memphis Field Office, DSWM
File 52

APPENDIX B

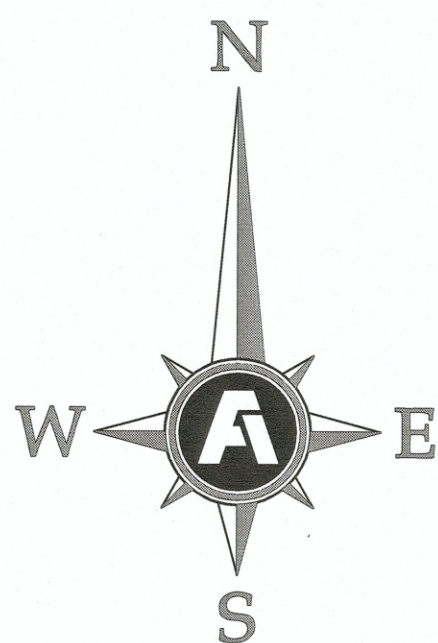
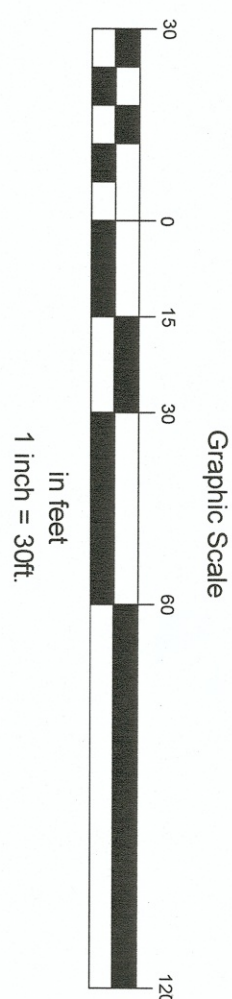
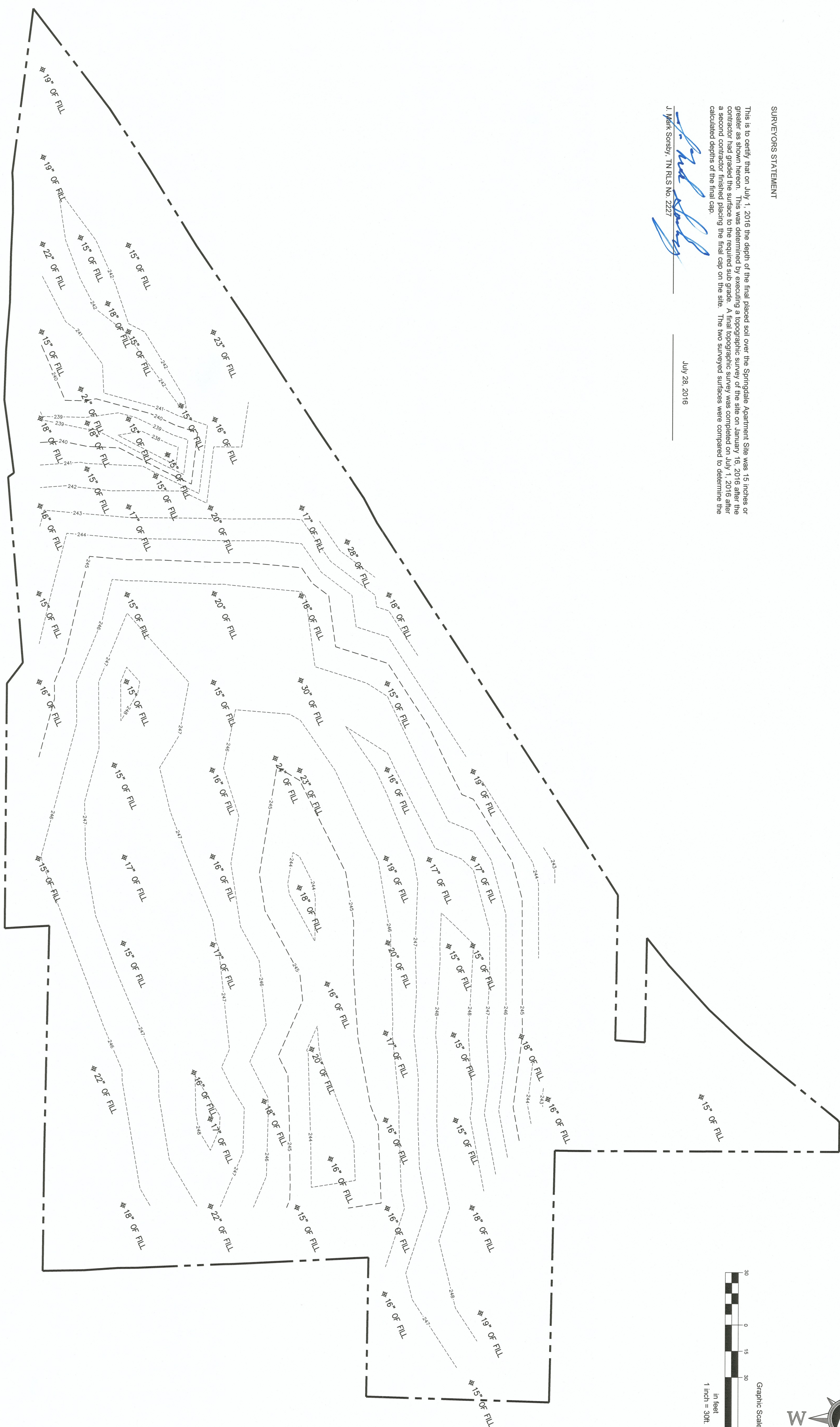
Confirmation Survey

SURVEYORS STATEMENT

This is to certify that on July 1, 2016 the depth of the final placed soil over the Sprindale Apartment Site was 15 inches or greater as shown hereon. This was determined by executing a topographic survey of the site on January 16, 2016 after the contractor had graded the surface to the required sub grade. A final topographic survey was completed on July 1, 2016 after a second contractor finished placing the final cap on the site. The two surveyed surfaces were compared to determine the calculated depths of the final cap.

J. Mark Sorsby, TN RLS No. 2227

July 28, 2016



**SPRINGDALE
APARTMENTS**
FILL VALUES EXHIBIT
PROJECT No. 9430
MEMPHIS, TENNESSEE



FISHER ARNOLD
ENGINEERING INTEGRATION

9180 Crestwyn Hills Drive | Memphis, Tennessee 38125-8538
901.748.1811 | Fax: 901.748.3115 | www.fisherarnold.com

[illegible]

Issue Date:	July 27, 2016
F&A Project No:	9430
Drafted By:	K.R.S.
Checked By:	J.M.S.
Sheet Title:	

FIL EXHIBIT

Sheet No.

1 of 1

APPENDIX C

Waste Disposal Manifests



NON-HAZARDOUS MANIFEST

NON-HAZARDOUS MANIFEST		1. Generator's US EPA ID No.		Manifest Doc No.		2. Page 1 of			
3. Generator's Mailing Address:		Generator's Site Address (if different than mailing): VELSICOL CHEMICAL 1199 WARFORD ST MEMPHIS, TN 38108		A. Manifest Number WMNA X 8		B. State Generator's ID			
4. Generator's Phone 206-999-5303		5. Transporter 1 Company Name Perry Trucking Poy		6. US EPA ID Number		C. State Transporter's ID			
7. Transporter 2 Company Name		8. US EPA ID Number		D. Transporter's Phone		E. State Transporter's ID			
9. Designated Facility Name and Site Address The Tunica Landfill 6035 BOWDRE ROAD ROBINSONVILLE, MS 38664		10. US EPA ID Number		F. Transporter's Phone		G. State Facility ID			
				H. State Facility Phone 662-363-2282					
GENERATOR	11. Description of Waste Materials			12. Containers		13. Total Quantity	14. Unit Wt./Vol.	15. Misc. Comments	
	a. Construction Debris			No.	Type				
	WM Profile # 400736MS								
	b.								
	WM Profile #								
TRANSPORTER	c.								
	WM Profile #								
	d.								
	WM Profile #								
DISPOSAL	J. Additional Descriptions for Materials Listed Above Tons: 8.71 Ticket # 511508			K. Disposal Location					
				Cell		Level			
15. Special Handling Instructions and Additional Information									
Purchase Order # 14165-06				EMERGENCY CONTACT / PHONE NO.:					
16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.									
TRANSPORTER	17. Transporter 1 Acknowledgement of Receipt of Materials			Signature "On behalf of"			Month	Day	Year
	Printed Name GREG ANDERES FOR VESICOL CHEMICAL			Signature [Signature]			8	29	15
DISPOSAL	18. Transporter 2 Acknowledgement of Receipt of Materials			Signature			Month	Day	Year
	Printed Name X Roy O'Neal			Signature [Signature]			8	29	15
FACILITY	19. Certificate of Final Treatment/Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.								
	20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.								
T	Printed Name Elizabeth Henderson			Signature [Signature]			Month	Day	Year
							10	29	15

White- TREATMENT, STORAGE, DISPOSAL FACILITY COPY

Pink- FACILITY USE ONLY

Blue- GENERATOR #2 COPY

Gold- TRANSPORTER #1 COPY

Yellow- GENERATOR #1 COPY



NON-HAZARDOUS MANIFEST

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3. Generator's Mailing Address:		Generator's Site Address (if different than mailing): VELSICOL CHEMICAL 1199 WARFORD ST MEMPHIS, TN 38108		A. Manifest Number WMNA		2015-10-29-2			
4. Generator's Phone 206-999-5303		6. US EPA ID Number		C. State Transporter's ID		B. State Generator's ID			
5. Transporter 1 Company Name Strayhorn truck		7. Transporter 2 Company Name		8. US EPA ID Number		D. Transporter's Phone 662 560 6516			
9. Designated Facility Name and Site Address The Tunica Landfill 6035 BOWDRE ROAD ROBINSONVILLE, MS 38664		10. US EPA ID Number		E. State Transporter's ID		F. Transporter's Phone			
				G. State Facility ID		H. State Facility Phone 662-363-2282			
11. Description of Waste Materials		12. Containers No. Type		13. Total Quantity		14. Unit Wt./Vol.		1. Misc. Comments	
a. Construction Debris WM Profile # 400736MS									
b. WM Profile #									
c. WM Profile #									
d. WM Profile #									
J. Additional Descriptions for Materials Listed Above		K. Disposal Location		Cell		Level			
				Grid					
15. Special Handling Instructions and Additional Information Tons: 17.47 Ticket # 511595									
Purchase Order # 14165-06		EMERGENCY CONTACT / PHONE NO.:							
16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.		Printed Name GREG ANDERES FOR VELSICOL CHEMICAL		Signature "On behalf of"		Month 10		Day 29	
17. Transporter 1 Acknowledgement of Receipt of Materials		Printed Name x Danny Brown		Signature x Danny Brown		Month 10		Day 29	
18. Transporter 2 Acknowledgement of Receipt of Materials		Printed Name		Signature		Month		Day	
19. Certificate of Final Treatment/Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.		20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.		Printed Name Shawanda R. Hicks		Signature		Month 10	
								Day 29	
								Year 15	

White- TREATMENT, STORAGE, DISPOSAL FACILITY COPY -
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4. Generator's Phone 206-999-5303		5. Transporter 1 Company Name ROSS TRUCKING RT06		6. US EPA ID Number		C. State Transporter's ID			
7. Transporter 2 Company Name		8. US EPA ID Number		D. Transporter's Phone		E. State Transporter's ID			
9. Designated Facility Name and Site Address The Tunica Landfill 6035 BOWDRE ROAD ROBINSONVILLE, MS 38664		10. US EPA ID Number		F. Transporter's Phone		G. State Facility ID			
				H. State Facility Phone 662-363-2282					
GENERATOR	11. Description of Waste Materials			12. Containers		13. Total Quantity	14. Unit Wt./Vol.	I. Misc. Comments	
	a. Construction Debris			No.	Type				
	WM Profile # 400736MS								
	b.								
	WM Profile #								
TRANSPORTER	c.								
	WM Profile #								
	d.								
	WM Profile #								
J. Additional Descriptions for Materials Listed Above				K. Disposal Location					
				Cell		Level			
				Grid					
15. Special Handling Instructions and Additional Information									
Purchase Order # 14165-06				EMERGENCY CONTACT / PHONE NO.:					
16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.									
Printed Name GREG ANDERES FOR VELSICOL CHEMICAL				Signature "On behalf of" [Signature]		Month X	Day	Year	
TRANSPORTER	17. Transporter 1 Acknowledgement of Receipt of Materials				Signature [Signature]		Month X 10	Day 29	Year 15
	Printed Name X CP Whitehurst JR				Signature [Signature]				
FACILITY	18. Transporter 2 Acknowledgement of Receipt of Materials				Signature		Month	Day	Year
	Printed Name								
19. Certificate of Final Treatment/Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.									
20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.				Signature [Signature]		Month 10	Day 29	Year 15	
Printed Name Shawanda R. Hicks									

WHITE - TREATMENT, STORAGE, DISPOSAL FACILITY COPY

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4. Generator's Phone 206-999-5303				B. State Generator's ID				
5. Transporter 1 Company Name Perry Trucking POY		6. US EPA ID Number		C. State Transporter's ID				
7. Transporter 2 Company Name		8. US EPA ID Number		D. Transporter's Phone				
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	WM Profile #							
	d.							
	WM Profile #							
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			Cell		Level			
			Grid					
15. Special Handling Instructions and Additional Information								
Purchase Order # EMERGENCY CONTACT / PHONE NO.:								
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Printed Name			Signature "On behalf of"			Month	Day	Year
GREG ANDERES FOR VELSICOL CHEMICAL			[Signature]			8	10	15
TRANSPORTER	17. Transporter 1 Acknowledgement of Receipt of Materials							
	Printed Name		Signature		Month	Day	Year	
	X POY Direct		X [Signature]		8	10	15	
FACILITY	18. Transporter 2 Acknowledgement of Receipt of Materials							
	Printed Name		Signature		Month	Day	Year	
19. Certificate of Final Treatment/Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.								
20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.								
Printed Name			Signature			Month	Day	Year

White- TREATMENT, STORAGE, DISPOSAL FACILITY COPY

Blue- GENERATOR #2 COPY

Yellow- GENERATOR #1 COPY

Pink- FACILITY USE ONLY

Gold- TRANSPORTER #1 COPY



NON-HAZARDOUS MANIFEST

NON-HAZARDOUS MANIFEST		1. Generator's US EPA ID No.		Manifest Doc No.		2. Page 1 of		NMI			
3. Generator's Mailing Address:		Generator's Site Address (if different than mailing): VELSICOL CHEMICAL 1199 WARFORD ST MEMPHIS, TN 38108		A. Manifest Number WMNA X 1019151		B. State Generator's ID					
4. Generator's Phone 206-999-5303		5. Transporter 1 Company Name Strayhorn Trk		6. US EPA ID Number		C. State Transporter's ID					
7. Transporter 2 Company Name		8. US EPA ID Number		D. Transporter's Phone 662-560-6516		E. State Transporter's ID					
9. Designated Facility Name and Site Address The Tunica Landfill 6035 BOWDRE ROAD ROBINSONVILLE, MS 38664		10. US EPA ID Number		F. Transporter's Phone		G. State Facility ID					
						H. State Facility Phone 662-363-2282					
GENERATOR	11. Description of Waste Materials			12. Containers		13. Total Quantity		14. Unit Wt./Vol.		15. Misc. Comments	
	a. Construction Debris			No. Type							
	WM Profile # 400736MS										
	b.										
	WM Profile #										
TRANSPORTER	c.										
	WM Profile #										
	d.										
	WM Profile #										
FACILITY	J. Additional Descriptions for Materials Listed Above TONS: 12.34 Ticket # 510977			K. Disposal Location							
				Cell Grid				Level			
15. Special Handling Instructions and Additional Information											
Purchase Order # EMERGENCY CONTACT / PHONE NO.:											
16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.											
Printed Name GREG ANDERES FOR VELSICOL CHEMICAL Signature "On behalf of" [Signature] Month 10 Day 19 Year 15											
17. Transporter 1 Acknowledgement of Receipt of Materials											
Printed Name X Danny Brown Signature X Danny Brown Month 10 Day 19 Year 15											
18. Transporter 2 Acknowledgement of Receipt of Materials											
Printed Name Signature Month Day Year											
19. Certificate of Final Treatment/Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.											
20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.											
Printed Name Elizabeth Henderson Signature E. Henderson Month 10 Day 19 Year 15											

White- TREATMENT, STORAGE, DISPOSAL FACILITY COPY

Blue- GENERATOR #2 COPY

Yellow- GENERATOR #1 COPY

Pink- FACILITY USE ONLY

Gold- TRANSPORTER #1 COPY



NON-HAZARDOUS MANIFEST

NON-HAZARDOUS MANIFEST		1. Generator's US EPA ID No.		Manifest Doc No.		2. Page 1 of		
3. Generator's Mailing Address:		Generator's Site Address (if different than mailing): VELSICOL CHEMICAL 1199 WARFORD ST MEMPHIS, TN 38108		A. Manifest Number WMNA X 31011153		B. State Generator's ID		
4. Generator's Phone 206-999-5303		5. Transporter 1 Company Name		6. US EPA ID Number		C. State Transporter's ID		
7. Transporter 2 Company Name KLB		8. US EPA ID Number		D. Transporter's Phone 901-870-6375		E. State Transporter's ID		
9. Designated Facility Name and Site Address The Tunica Landfill 6035 BOWDRE ROAD ROBINSONVILLE, MS 38664		10. US EPA ID Number		F. Transporter's Phone		G. State Facility ID		
				H. State Facility Phone 662-363-2282				
GENERATOR	11. Description of Waste Materials			12. Containers		13. Total Quantity	14. Unit Wt./Vol.	I. Misc. Comments
	a. Construction Debris			No.	Type			
	WM Profile # 400736MS							
	b.							
	WM Profile #							
R	c.							
	WM Profile #							
	d.							
	WM Profile #							
A	J. Additional Descriptions for Materials Listed Above			K. Disposal Location				
	Tons: 4.48 Tick # 510431			Cell		Level		
T	15. Special Handling Instructions and Additional Information							
R	Purchase Order #				EMERGENCY CONTACT / PHONE NO.:			
	16. GENERATOR'S CERTIFICATE:							
P	I hereby certify that the above-described materials are not hazardous wastes as defined by CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.							
	Printed Name		Signature "On behalf of"		Month	Day	Year	
O	GREG ANDERES FOR VELSICOL CHEMICAL		[Signature]		8	16	15	
	17. Transporter 1 Acknowledgement of Receipt of Materials							
R	Printed Name		Signature		Month	Day	Year	
	John Pegram		[Signature]		8	16	15	
T	18. Transporter 2 Acknowledgement of Receipt of Materials							
	Printed Name		Signature		Month	Day	Year	
F								
A	19. Certificate of Final Treatment/Disposal							
	I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.							
C	20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.							
	Printed Name		Signature		Month	Day	Year	
I	Elizabeth Henderson		[Signature]		10	16	15	

White- TREATMENT, STORAGE, DISPOSAL FACILITY COPY

Blue- GENERATOR #2 COPY

Yellow- GENERATOR #1 COPY

Pink- FACILITY USE ONLY

Gold- TRANSPORTER #1 COPY



NON-HAZARDOUS MANIFEST

NON-HAZARDOUS MANIFEST		1. Generator's US EPA ID No.		Manifest Doc No.		2. Page 1 of	
3. Generator's Mailing Address:		Generator's Site Address (if different than mailing): VELSICOL CHEMICAL 1199 WARFORD ST MEMPHIS, TN 38108		A. Manifest Number WMNA X 1010154		B. State Generator's ID	
4. Generator's Phone 206-999-5303		5. Transporter 1 Company Name Peny Trucking POY		6. US EPA ID Number		C. State Transporter's ID	
7. Transporter 2 Company Name		8. US EPA ID Number		D. Transporter's Phone		E. State Transporter's ID	
9. Designated Facility Name and Site Address The Tunica Landfill 6035 BOWDRE ROAD ROBINSONVILLE, MS 38664		10. US EPA ID Number		F. Transporter's Phone		G. State Facility ID	
				H. State Facility Phone 662-363-2282			
GENERATOR	11. Description of Waste Materials			12. Containers		13. Total Quantity	
	a. Construction Debris			No. Type		14. Unit Wt./Vol.	
	WM Profile # 400736MS						
	b.						
	WM Profile #						
	c.						
WM Profile #							
d.							
WM Profile #							
J. Additional Descriptions for Materials Listed Above Tons: 4.91 Ticket # 510038			K. Disposal Location				
			Cell		Level		
			Grid				
15. Special Handling Instructions and Additional Information							
Purchase Order # EMERGENCY CONTACT / PHONE NO.:							
16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.							
Printed Name GREG ANDERES FOR VELSICOL CHEMICAL			Signature "On behalf of" [Signature]		Month Day Year 10/16/15		
TRANSPORTER	17. Transporter 1 Acknowledgement of Receipt of Materials			Month Day Year 10/16/15			
	Printed Name Roy [Signature]		Signature [Signature]		Month Day Year 10/16/15		
FACILITY	18. Transporter 2 Acknowledgement of Receipt of Materials			Month Day Year			
	Printed Name		Signature		Month Day Year		
19. Certificate of Final Treatment/Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.							
20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.							
Printed Name Elizabeth Henderson			Signature [Signature]		Month Day Year 10/10/15		

White- TREATMENT, STORAGE, DISPOSAL FACILITY COPY

Blue- GENERATOR #2 COPY

Yellow- GENERATOR #1 COPY

Pink- FACILITY USE ONLY

Gold- TRANSPORTER #1 COPY



NON-HAZARDOUS MANIFEST

NON-HAZARDOUS MANIFEST		1. Generator's US EPA ID No.		Manifest Doc No.		2. Page 1 of		NMI			
3. Generator's Mailing Address:		Generator's Site Address (if different than mailing):		A. Manifest Number		WMNA X 101015-1					
4. Generator's Phone 206-999-5303		VELSICOL CHEMICAL 1199 WARFORD ST MEMPHIS, TN 38108		B. State Generator's ID							
5. Transporter 1 Company Name		6. US EPA ID Number		C. State Transporter's ID							
Strayhorn Inc				D. Transporter's Phone		662-5606566					
7. Transporter 2 Company Name		8. US EPA ID Number		E. State Transporter's ID							
				F. Transporter's Phone							
9. Designated Facility Name and Site Address		10. US EPA ID Number		G. State Facility ID							
The Tunica Landfill 6035 BOWDRE ROAD ROBINSONVILLE, MS 38664				H. State Facility Phone		662-363-2282					
GENERATOR	11. Description of Waste Materials			12. Containers		13. Total Quantity		14. Unit Wt./Vol.		15. Misc. Comments	
	a. Construction Debris			No. Type							
	WM Profile # 400736MS										
	b.										
	WM Profile #										
	c.										
	WM Profile #										
	d.										
	WM Profile #										
	J. Additional Descriptions for Materials Listed Above			K. Disposal Location							
Tons: 5.51 Ticket # 510915			Cell Grid Level								
15. Special Handling Instructions and Additional Information											
Purchase Order # EMERGENCY CONTACT / PHONE NO.:											
16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.											
Printed Name GREG ANDERES FOR VELSICOL CHEMICAL Signature "On behalf of" [Signature] Month 10 Day 16 Year 15											
TRANSPORTER	17. Transporter 1 Acknowledgement of Receipt of Materials										
	Printed Name X Danny Brown Signature X Danny Brown Month 10 Day 16 Year 15										
FACILITY	18. Transporter 2 Acknowledgement of Receipt of Materials										
	Printed Name Signature Month Day Year										
19. Certificate of Final Treatment/Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.											
20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.											
Printed Name Elizabeth Henderson Signature E. Henderson Month 10 Day 16 Year 15											

White- TREATMENT, STORAGE, DISPOSAL FACILITY COPY

Blue- GENERATOR #2 COPY

Yellow- GENERATOR #1 COPY

Pink- FACILITY USE ONLY

Gold- TRANSPORTER #1 COPY



NON-HAZARDOUS MANIFEST

NON-HAZARDOUS MANIFEST		1. Generator's US EPA ID No.		Manifest Doc No.		2. Page 1 of	
3. Generator's Mailing Address:		Generator's Site Address (if different than mailing): VELSICOL CHEMICAL 1199 WARFORD ST MEMPHIS, TN 38108		A. Manifest Number WMNA		X 1010152	
4. Generator's Phone 206-999-5303				B. State Generator's ID			
5. Transporter 1 Company Name Perry Trucking POY		6. US EPA ID Number		C. State Transporter's ID			
7. Transporter 2 Company Name		8. US EPA ID Number		D. Transporter's Phone			
9. Designated Facility Name and Site Address The Tunica Landfill 6035 BOWDRE ROAD ROBINSONVILLE, MS 38664		10. US EPA ID Number		E. State Transporter's ID			
				F. Transporter's Phone			
				G. State Facility ID			
				H. State Facility Phone		662-363-2282	
G E N E R A T O R	11. Description of Waste Materials		12. Containers		13. Total	14. Unit	L. Misc. Comments
	a. Construction Debris		No.	Type	Quantity	Wt./Vol.	
	WM Profile # 400736MS						
	b.						
	WM Profile #						
c.							
WM Profile #							
d.							
WM Profile #							
J. Additional Descriptions for Materials Listed Above Tons 2.42 Ticket # 510914		K. Disposal Location					
		Cell		Level			
		Grid					
15. Special Handling Instructions and Additional Information							
Purchase Order #				EMERGENCY CONTACT / PHONE NO.:			
16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.							
Printed Name GREG ANDERES		FOR VELSICOL CHEMICAL		Signature "On behalf of"		Month 10	Day 16
						Year 15	
T R A N S P O R T E R	17. Transporter 1 Acknowledgement of Receipt of Materials		Printed Name X POY ONRCI		Signature X Perry Trucking		Month 10
							Day 16
						Year 15	
18. Transporter 2 Acknowledgement of Receipt of Materials		Printed Name		Signature		Month	Day
						Year	
F A C I L I T Y	19. Certificate of Final Treatment/Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.						
	20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.						
Printed Name Elizabeth Henderson		Signature E. Henderson		Month 10	Day 16	Year 15	

White- TREATMENT, STORAGE, DISPOSAL FACILITY COPY

Blue- GENERATOR #2 COPY

Yellow- GENERATOR #1 COPY

Pink- FACILITY USE ONLY

Gold- TRANSPORTER #1 COPY



NON-HAZARDOUS MANIFEST

NON-HAZARDOUS MANIFEST		1. Generator's US EPA ID No.		Manifest Doc No.		2. Page 1 of		NM1		
3. Generator's Mailing Address:		Generator's Site Address (if different than mailing): VELSICOL CHEMICAL 1199 WARFORD ST MEMPHIS, TN 38108				A. Manifest Number WMNA		X 61-2015-10-19		
4. Generator's Phone 206-999-5303						B. State Generator's ID				
5. Transporter 1 Company Name Strayhorn TRK		6. US EPA ID Number				C. State Transporter's ID				
7. Transporter 2 Company Name		8. US EPA ID Number				D. Transporter's Phone		662-560-6516		
9. Designated Facility Name and Site Address The Tunica Landfill 6035 BOWDRE ROAD ROBINSONVILLE, MS 38664		10. US EPA ID Number				E. State Transporter's ID				
						F. Transporter's Phone				
						G. State Facility ID				
						H. State Facility Phone		662-363-2282		
GENERATOR	11. Description of Waste Materials				12. Containers		13. Total Quantity	14. Unit Wt./Vol.	I. Misc. Comments	
	a. Construction Debris				No.	Type				
	WM Profile # 400736MS									
	b.									
	WM Profile #									
	c.									
	WM Profile #									
	d.									
	WM Profile #									
	J. Additional Descriptions for Materials Listed Above				K. Disposal Location					
				Cell		Level				
				Grid						
15. Special Handling Instructions and Additional Information Tons: 6.42 Ticket # 510995										
Purchase Order #					EMERGENCY CONTACT / PHONE NO.:					
16. GENERATOR'S CERTIFICATE: I hereby certify that the above-described materials are not hazardous wastes as defined by CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.										
Printed Name GREG ANDERES FOR VELSICOL CHEMICAL					Signature "On behalf of"			Month 10	Day 19	Year 15
TRANSPORTER	17. Transporter 1 Acknowledgement of Receipt of Materials									
	Printed Name X Danny Brown			Signature X Danny Brown			Month 10	Day 19	Year 15	
FACILITY	18. Transporter 2 Acknowledgement of Receipt of Materials									
	Printed Name			Signature			Month	Day	Year	
19. Certificate of Final Treatment/Disposal I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.										
20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.										
Printed Name Shawanda R. Hicks					Signature Shawanda R. Hicks			Month 10	Day 19	Year 15

White- TREATMENT, STORAGE, DISPOSAL FACILITY COPY

Blue- GENERATOR #2 COPY

Yellow- GENERATOR #1 COPY

Pink- FACILITY USE ONLY

Gold- TRANSPORTER #1 COPY

APPENDIX D

Borrow Soil Analytical Results

Rhodes College Borrow Soil Results

"Every acre...Every year.™"

SOIL ANALYSIS

Client : Pangean-CMD Associates an ECS Company Mr. Dave Schmidt 3144 Stage Post Dr. Suite 112 Bartlett TN 38133	Grower : Rhodes Fill	Report No: 15-189-0702 Cust No: 05107 Date Printed: 07/09/2015 Date Received : 07/08/2015 PO: Page : 1 of 2
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Lab Number : 73840

Field Id :

Sample Id : Grab

Test	Method	Results	SOIL TEST RATINGS					Calculated Cation Exchange Capacity
			Very Low	Low	Medium	Optimum	Very High	
Soil pH	1:1	5.9						11.6 meq/100g
Buffer pH	BPH	7.69						%Saturation
Phosphorus (P)	M3	34 LB/ACRE						%sat meq
Potassium (K)	M3	46 LB/ACRE						K 0.5 0.1
Calcium (Ca)	M3	2212 LB/ACRE						Ca 47.7 5.5
Magnesium (Mg)	M3	822 LB/ACRE						Mg 29.5 3.4
Sulfur (S)	M3	48 LB/ACRE						H 21.0 2.4
Boron (B)	M3	0.2 LB/ACRE						Na 1.7 0.2
Copper (Cu)	M3	1.2 LB/ACRE						
Iron (Fe)	M3	228 LB/ACRE						K/Mg Ratio: 0.03
Manganese (Mn)	M3	112 LB/ACRE						Ca/Mg Ratio: 1.62
Zinc (Zn)	M3	3.4 LB/ACRE						
Sodium (Na)	M3	90 LB/ACRE						
Soluble Salts	SS1:2	0.24 dS/m						
Organic Matter	LOI	1.2 % ENR 68						
Nitrate Nitrogen	NO3N	4 LB/ACRE						

SOIL FERTILITY GUIDELINES

Crop : Bermudagrass Lawn

Yield Goal : 1

Optimum

Rec Units:

LB/1000 SF

(lbs)	LIME	(tons)	N	P ₂ O ₅	K ₂ O	Mg	S	B	Cu	Mn	Zn	Fe
60			4-6	1.0	5.0	0	0	0.02	0.10	0	0	

Crop : Fescue Lawn

Yield Goal : 1

Optimum

Rec Units:

LB/1000 SF

(lbs)	LIME	(tons)	N	P ₂ O ₅	K ₂ O	Mg	S	B	Cu	Mn	Zn	Fe
60			3-4	1.0	5.0	0	0	0.02	0.10	0	0	

Comments :

Nitrate-nitrogen analysis will detect levels no lower than 2 ppm nitrate-nitrogen. Results that indicate undetected levels of nitrate-nitrogen will display 2 ppm or 4 lb/acre.

Bermudagrass Lawn

Limestone application is targeted to bring soil pH to 6.5.

- MAINTENANCE: Beginning at green-up, apply 1 lb N/1000 sq ft every 4 to 6 weeks until early fall. Adjust N rate and timing to accommodate climatic conditions and management practices.

- Apply recommended phosphate in spring.

- Apply recommended potash in fall. If the soil is sandy, apply 1 lb of potash/1000 sq ft in fall and apply the remaining potash in several smaller applications throughout the growing season.

- If the recommended amount of limestone is not incorporated into the soil prior to establishment, surface apply up to 50 lbs/1000 sq ft every 4 to 6 months until the recommended amount is applied.

Fescue Lawn

Limestone application is targeted to bring soil pH to 6.5.

- MAINTENANCE: Apply 0.75 to 1 lb N/1000 sq ft in March, May, September, and November. Adjust N rate and timing to accommodate climatic conditions and management practices. If lower maintenance is desired, the May application can be eliminated.

- Apply half of recommended phosphate in spring and again in fall.

- Apply recommended potash in fall. If the soil is sandy, apply 1 lb of potash/1000 sq ft in fall and apply the remaining potash in several smaller applications throughout the growing season.

- If the recommended amount of limestone is not incorporated into the soil prior to establishment, surface apply up to 50 lbs/1000 sq

M3 - Mehlich 3 BPH - Lime Index NO3N - Nitrate-N LOI - Loss On Ignition 1:1 - Water pH SS1:2 - Soluble Salts

Analysis prepared by: A&L Analytical Laboratories, Inc.



"Every acre...Every year.™"

SOIL ANALYSIS

Client : Pangean-CMD Associates an ECS Company Mr. Dave Schmidt 3144 Stage Post Dr. Suite 112 Bartlett TN 38133	Grower : Rhodes Fill	Report No: 15-189-0702 Cust No: 05107 Date Printed: 07/09/2015 Date Received : 07/08/2015 PO: Page : 2 of 2
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Lab Number : 73840

Field Id :

Sample Id : Grab

ft every 4 to 6 months until the recommended amount is applied.

7/15/2015

Pangean-CMD Associates an ECS Company
Mr. Keith Yarrow
3144 Stage Post Dr.
Suite 112
Bartlett, TN, 38133

Ref: Analytical Testing
ETC Report Number: 15-189-0327
Client Project Description: Springdale Apts.

Dear Mr. Keith Yarrow:
Environmental Testing and Consulting, Inc. received sample(s) on 7/8/2015 for the analyses presented in the following report.

The above referenced project has been analyzed per your instructions. The analyses were performed in accordance with the applicable analytical method.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, method validations, instrumentation maintenance and calibration for all parameters (NELAP and non-NELAP) were performed in accordance with guidelines established by the USEPA (including 40 CFR 136 Method Update Rule May 2012) and NELAC unless otherwise indicated. Any parameter for which the laboratory is not officially NELAP accredited is indicated by a '~' symbol. These are not included in the scope because NELAP accreditation is either not available or has not been applied for. Additional certifications may be held/are available for parameters, where NELAP accreditation is not required or applicable. A full list of certifications is available upon request.

Certain parameters (chlorine, pH, dissolved oxygen, sulfite...) are required to be analyzed within 15 minutes of sampling. Usually, but not always, any field parameter analyzed at the laboratory is outside of this holding time. Refer to sample analysis time for confirmation of holding time compliance.

The results are shown on the attached Report of Analysis(s). Results for solid matrices are reported on an as-received basis unless otherwise indicated. This report shall not be reproduced except in full and relates only to the samples included in this report.

Please do not hesitate to contact me or client services if you have any questions or need additional information.

Sincerely,



Terri Gray
Project Manager

Laboratory's liability in any claim relating to analyses performed shall be limited to, at laboratory's option, repeating the analysis in question at laboratory's expense, or the refund of the charges paid for performance of said analysis.

Alabama #40750	Louisiana #04015	VA NELAP #460181	Texas #T104704180-11-6	Arkansas #88-0650
Mississippi	California #2904	NC #415	Oklahoma #9311	Virginia #00106
Kentucky #90047	Tennessee #TN02027	EPA #TN00012	Kentucky UST #41	Kansas #E-10396

Client: Pangean-CMD Associates an ECS Company

CASE NARRATIVE

Project: Springdale Apts.

Lab Report Number: 15-189-0327

Date: 7/15/2015

Volatile Organic Compounds - GC/MS Method SW-8260B

Sample 95853 (Rhodes Fill)

QC Batch No: L247561

Surrogate(s) was flagged for recovery outside QC limits in this project sample. This sample was re-analyzed for verification, and/or dilution of target analytes. Batch QC samples (method blank and laboratory control samples) all showed surrogates within QC limits.

05107

Pangean-CMD Associates an ECS Company

Mr. Keith Yarrow

3144 Stage Post Dr.

Suite 112

Bartlett, TN 38133

Project Springdale Apts.
Information :

Report Date : 07/15/2015

Received : 7/8/2015

Terri Gray

Report Number : **15-189-0327**

REPORT OF ANALYSIS

Terri Gray
Project Manager

Lab No : **95853**

Matrix: **Solids**

Sample ID : **Rhodes Fill**

Sampled: **7/8/2015 13:30**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	15.6	%		1	07/13/15 10:25	CJR	2540G-2011
Total Antimony	<0.500	mg/Kg	0.500	1	07/09/15 20:07	JTR	6010B
Total Arsenic	9.78	mg/Kg	1.00	1	07/09/15 20:07	JTR	6010B
Total Beryllium	0.411	mg/Kg	0.0500	1	07/09/15 20:07	JTR	6010B
Total Cadmium	0.193	mg/Kg	0.100	1	07/09/15 20:07	JTR	6010B
Total Chromium	11.0	mg/Kg	0.250	1	07/09/15 20:07	JTR	6010B
Total Copper	15.2	mg/Kg	0.250	1	07/09/15 20:07	JTR	6010B
Total Lead	10.7	mg/Kg	0.300	1	07/09/15 20:07	JTR	6010B
Mercury (Total)	0.0286	mg/Kg	0.0133	1	07/09/15 17:47	KKM	7471A
Total Nickel	14.2	mg/Kg	0.250	1	07/09/15 20:07	JTR	6010B
Total Selenium	<1.00	mg/Kg	1.00	1	07/09/15 20:07	JTR	6010B
Total Silver	<0.250	mg/Kg	0.250	1	07/09/15 20:07	JTR	6010B
Total Thallium	<1.00	mg/Kg	1.00	1	07/09/15 20:07	JTR	6010B
Total Zinc	48.8	mg/Kg	0.500	1	07/09/15 20:07	JTR	6010B

**Qualifiers/
Definitions**

*

Outside QC limit

MQL

Method Quantitation Limit

DF

Dilution Factor

Q

RPD >40% dual column results

05107

Pangean-CMD Associates an ECS Company

Mr. Keith Yarrow

3144 Stage Post Dr.

Suite 112

Bartlett, TN 38133

Project Springdale Apts.

Information :

Report Date : 07/15/2015

Received : 7/8/2015

Terri Gray

Report Number : **15-189-0327**

REPORT OF ANALYSIS

Terri Gray
Project Manager

Lab No : **95853**

Matrix: **Solids**

Sample ID : **Rhodes Fill**

Sampled: **7/8/2015 13:30**

Analytical Method: 8081A

Prep Method: 3546

Prep Batch(es): L247344

Date/Time Prepped: 7/14/2015 08:10:00

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aldrin	<0.0020	mg/Kg	0.0020	10	07/14/15 20:54	VIC	L247591
alpha-BHC	<0.0020	mg/Kg	0.0020	10	07/14/15 20:54	VIC	L247591
beta-BHC	<0.0020	mg/Kg	0.0020	10	07/14/15 20:54	VIC	L247591
delta-BHC	<0.0020	mg/Kg	0.0020	10	07/14/15 20:54	VIC	L247591
Chlordane	<0.0200	mg/Kg	0.0200	10	07/14/15 20:54	VIC	L247591
alpha-Chlordane	<0.0020	mg/Kg	0.0020	10	07/14/15 20:54	VIC	L247591
gamma-Chlordane	<0.0020	mg/Kg	0.0020	10	07/14/15 20:54	VIC	L247591
4,4'-DDD	<0.0020	mg/Kg	0.0020	10	07/14/15 20:54	VIC	L247591
4,4'-DDE	<0.0020	mg/Kg	0.0020	10	07/14/15 20:54	VIC	L247591
4,4'-DDT	<0.0020	mg/Kg	0.0020	10	07/14/15 20:54	VIC	L247591
Dieldrin	<0.0020	mg/Kg	0.0020	10	07/14/15 20:54	VIC	L247591
Endosulfan I	<0.0020	mg/Kg	0.0020	10	07/14/15 20:54	VIC	L247591
Endosulfan II	<0.0020	mg/Kg	0.0020	10	07/14/15 20:54	VIC	L247591
Endosulfan Sulfate	<0.0020	mg/Kg	0.0020	10	07/14/15 20:54	VIC	L247591
Endrin	<0.0020	mg/Kg	0.0020	10	07/14/15 20:54	VIC	L247591
Endrin Aldehyde	<0.0020	mg/Kg	0.0020	10	07/14/15 20:54	VIC	L247591
Endrin Ketone	<0.0020	mg/Kg	0.0020	10	07/14/15 20:54	VIC	L247591
gamma-BHC	<0.0020	mg/Kg	0.0020	10	07/14/15 20:54	VIC	L247591
Heptachlor	<0.0020	mg/Kg	0.0020	10	07/14/15 20:54	VIC	L247591
Heptachlor Epoxide	<0.0020	mg/Kg	0.0020	10	07/14/15 20:54	VIC	L247591
Methoxychlor	<0.0020	mg/Kg	0.0020	10	07/14/15 20:54	VIC	L247591

**Qualifiers/
Definitions**

*

Outside QC limit

MQL

Method Quantitation Limit

DF

Dilution Factor

Q

RPD >40% dual column results

05107

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Information :

Report Date : 07/15/2015

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Terri Gray

Report Number : **15-189-0327**

REPORT OF ANALYSIS

Terri Gray
Project Manager

Lab No : **95853**

Matrix: **Solids**

Sample ID : **Rhodes Fill**

Sampled: **7/8/2015 13:30**

Analytical Method: 8081A

Prep Method: 3546

Prep Batch(es): L247344

Date/Time Prepped: 7/14/2015 08:10:00

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Toxaphene	<0.200	mg/Kg	0.200	10	07/14/15 20:54	VIC	L247591
Surrogate: Decachlorobiphenyl	64.5		Limits: 37-165%	10	07/14/15 20:54	VIC	L247591
Surrogate: Tetrachloro-m-xylene	62.4		Limits: 18-158%	10	07/14/15 20:54	VIC	L247591

Analytical Method: 8082

Prep Method: 3546

Prep Batch(es): L247380

Date/Time Prepped: 7/14/2015 09:45:00

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aroclor 1016	<0.0066	mg/Kg	0.0066	1	07/14/15 20:37	VIC	L247594
Aroclor 1221	<0.0066	mg/Kg	0.0066	1	07/14/15 20:37	VIC	L247594
Aroclor 1232	<0.0066	mg/Kg	0.0066	1	07/14/15 20:37	VIC	L247594
Aroclor 1242	<0.0066	mg/Kg	0.0066	1	07/14/15 20:37	VIC	L247594
Aroclor 1248	<0.0066	mg/Kg	0.0066	1	07/14/15 20:37	VIC	L247594
Aroclor 1254	<0.0066	mg/Kg	0.0066	1	07/14/15 20:37	VIC	L247594
Aroclor 1260	<0.0066	mg/Kg	0.0066	1	07/14/15 20:37	VIC	L247594
Surrogate: Decachlorobiphenyl	42.8		Limits: 25-125%	1	07/14/15 20:37	VIC	L247594
Surrogate: Tetrachloro-m-xylene	48.5		Limits: 25-125%	1	07/14/15 20:37	VIC	L247594

Analytical Method: 8260B

Prep Method: 5030A

Prep Batch(es): L247552

Date/Time Prepped: 7/14/2015 08:00:00

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Acetone	<0.0400	mg/Kg	0.0400	1	07/14/15 17:31	HAL	L247561

**Qualifiers/
Definitions**

* Outside QC limit
MQL Method Quantitation Limit

DF Dilution Factor
Q RPD >40% dual column results

05107

Pangean-CMD Associates an ECS Company

Mr. Keith Yarrow

3144 Stage Post Dr.

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Project Springdale Apts.

Information :

Report Date : 07/15/2015

Received : 7/8/2015

Terri Gray

Report Number : **15-189-0327**

REPORT OF ANALYSIS

Terri Gray
Project Manager

Lab No : **95853**

Matrix: **Solids**

Sample ID : **Rhodes Fill**

Sampled: **7/8/2015 13:30**

Analytical Method: 8260B

Prep Method: 5030A

Prep Batch(es): L247552

Date/Time Prepped: 7/14/2015 08:00:00

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Acetonitrile	<0.100	mg/Kg	0.100	1	07/14/15 17:31	HAL	L247561
Acrolein	<0.0400	mg/Kg	0.0400	1	07/14/15 17:31	HAL	L247561
Acrylonitrile	<0.0400	mg/Kg	0.0400	1	07/14/15 17:31	HAL	L247561
Benzene	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
Bromobenzene	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
Bromochloromethane	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
Bromodichloromethane	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
Bromoform	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
Bromomethane	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
Methyl Ethyl Ketone (MEK)	<0.0400	mg/Kg	0.0400	1	07/14/15 17:31	HAL	L247561
n-Butylbenzene	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
sec-Butyl benzene	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
tert-Butyl benzene	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
Carbon Disulfide	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
Carbon Tetrachloride	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
Chlorobenzene	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
Chlorodibromomethane	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
Chloroethane	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
2-Chloroethylvinyl Ether	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
Chloroform	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
Chloromethane	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
2-Chlorotoluene	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561

**Qualifiers/
Definitions**

*

Outside QC limit

DF

Dilution Factor

MQL

Method Quantitation Limit

Q

RPD >40% dual column results

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Information :

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Report Number : **15-189-0327**

REPORT OF ANALYSIS

Terri Gray
Project Manager

Lab No : **95853**

Matrix: **Solids**

Sample ID : **Rhodes Fill**

Sampled: **7/8/2015 13:30**

Analytical Method: 8260B

Prep Method: 5030A

Prep Batch(es): L247552

Date/Time Prepped: 7/14/2015 08:00:00

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
4-Chlorotoluene	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
1,2-Dibromo-3-Chloropropane	<0.0100	mg/Kg	0.0100	1	07/14/15 17:31	HAL	L247561
1,2-Dibromoethane	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
Dibromomethane	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
1,2-Dichlorobenzene	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
1,3-Dichlorobenzene	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
1,4-Dichlorobenzene	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
Dichlorodifluoromethane	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
1,1-Dichloroethane	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
1,2-Dichloroethane	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
1,1-Dichloroethene	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
cis-1,2-Dichloroethene	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
trans-1,2-Dichloroethene	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
1,2-Dichloroethene (Total)	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31		L247561
1,2-Dichloropropane	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
1,3-Dichloropropane	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
2,2-Dichloropropane	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
1,1-Dichloropropene	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
cis-1,3-Dichloropropene	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
trans-1,3-Dichloropropene	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
Ethyl Acetate	<0.0400	mg/Kg	0.0400	1	07/14/15 17:31	HAL	L247561
Ethylbenzene	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561

**Qualifiers/
Definitions**

*

Outside QC limit

MQL

Method Quantitation Limit

DF

Dilution Factor

Q

RPD >40% dual column results

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Lab No : **95853**

Matrix: **Solids**

Sample ID : **Rhodes Fill**

Sampled: **7/8/2015 13:30**

Analytical Method: 8260B

Prep Method: 5030A

Prep Batch(es): L247552

Date/Time Prepped: 7/14/2015 08:00:00

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Hexachlorobutadiene	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
2-Hexanone	<0.0100	mg/Kg	0.0100	1	07/14/15 17:31	HAL	L247561
Iodomethane	<0.0100	mg/Kg	0.0100	1	07/14/15 17:31	HAL	L247561
Isopropylbenzene	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
4-Isopropyl toluene	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
Methyl tert-butyl ether (MTBE)	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
4-Methyl-2-Pentanone	<0.0100	mg/Kg	0.0100	1	07/14/15 17:31	HAL	L247561
Methylene Chloride	<0.0200	mg/Kg	0.0200	1	07/14/15 17:31	HAL	L247561
Naphthalene	<0.0100	mg/Kg	0.0100	1	07/14/15 17:31	HAL	L247561
n-Propylbenzene	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
Styrene	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
1,1,1,2-Tetrachloroethane	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
1,1,2,2-Tetrachloroethane	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
Tetrachloroethene	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
Toluene	<0.0100	mg/Kg	0.0100	1	07/14/15 17:31	HAL	L247561
1,2,3-Trichlorobenzene	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
1,2,4-Trichlorobenzene	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
1,1,1-Trichloroethane	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
1,1,2-Trichloroethane	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
Trichloroethene	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
Trichlorofluoromethane	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
1,2,3-Trichloropropane	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561

**Qualifiers/
Definitions**

* Outside QC limit
MQL Method Quantitation Limit

DF Dilution Factor
Q RPD >40% dual column results

05107

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Information :

Report Date : 07/15/2015

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Terri Gray

Report Number : **15-189-0327**

REPORT OF ANALYSIS

Terri Gray
Project Manager

Lab No : **95853**

Matrix: **Solids**

Sample ID : **Rhodes Fill**

Sampled: **7/8/2015 13:30**

Analytical Method: 8260B

Prep Method: 5030A

Prep Batch(es): L247552

Date/Time Prepped: 7/14/2015 08:00:00

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
1,2,4-Trimethylbenzene	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
1,3,5-Trimethylbenzene	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
Vinyl Acetate	<0.0400	mg/Kg	0.0400	1	07/14/15 17:31	HAL	L247561
Vinyl Chloride	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
o-Xylene	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31	HAL	L247561
m,p-Xylene	<0.0080	mg/Kg	0.0080	1	07/14/15 17:31	HAL	L247561
Xylene (Total)	<0.0020	mg/Kg	0.0020	1	07/14/15 17:31		L247561
Surrogate: 4-Bromofluorobenzene	135 *		Limits: 60-130%	1	07/14/15 17:31	HAL	L247561
Surrogate: 1,2-Dichloroethane - d4	137 *		Limits: 60-132%	1	07/14/15 17:31	HAL	L247561
Surrogate: Toluene-d8	104		Limits: 70-122%	1	07/14/15 17:31	HAL	L247561

Analytical Method: 8270C

Prep Method: 3546

Prep Batch(es): L247265

Date/Time Prepped: 7/13/2015 12:30:00

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Acenaphthene	<0.066	mg/Kg	0.066	1	07/13/15 22:05	RQE	L247389
Acenaphthylene	<0.066	mg/Kg	0.066	1	07/13/15 22:05	RQE	L247389
Acetophenone	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
Aniline	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
Anthracene	<0.066	mg/Kg	0.066	1	07/13/15 22:05	RQE	L247389
Benazidine	<0.670	mg/Kg	0.670	1	07/13/15 22:05	RQE	L247389
Benzo(a)anthracene	<0.066	mg/Kg	0.066	1	07/13/15 22:05	RQE	L247389
Benzo(a)pyrene	<0.066	mg/Kg	0.066	1	07/13/15 22:05	RQE	L247389

**Qualifiers/
Definitions**

*

Outside QC limit

MQL

Method Quantitation Limit

DF

Dilution Factor

Q

RPD >40% dual column results

05107

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Mr. Keith Yarrow

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Bartlett, TN 38133

Project Springdale Apts.

Information :

Report Date : 07/15/2015

Received : 7/8/2015

Terri Gray

Report Number : **15-189-0327**

REPORT OF ANALYSIS

Terri Gray
Project Manager

Lab No : **95853**

Matrix: **Solids**

Sample ID : **Rhodes Fill**

Sampled: **7/8/2015 13:30**

Analytical Method: 8270C

Prep Method: 3546

Prep Batch(es): L247265

Date/Time Prepped: 7/13/2015 12:30:00

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Benzo(b)fluoranthene	<0.066	mg/Kg	0.066	1	07/13/15 22:05	RQE	L247389
Benzo(g,h,i)perylene	<0.066	mg/Kg	0.066	1	07/13/15 22:05	RQE	L247389
Benzo(k)fluoranthene	<0.066	mg/Kg	0.066	1	07/13/15 22:05	RQE	L247389
Benzoic Acid	<0.330	mg/Kg	0.330	1	07/13/15 22:05	RQE	L247389
Benzyl alcohol	<0.330	mg/Kg	0.330	1	07/13/15 22:05	RQE	L247389
Bis(2-Chloroethoxy)methane	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
Bis(2-Chloroethyl)ether	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
Bis(2-Chloroisopropyl)ether	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
Bis(2-ethylhexyl)phthalate	<0.330	mg/Kg	0.330	1	07/13/15 22:05	RQE	L247389
4-Bromophenyl phenyl ether	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
Butyl benzyl phthalate	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
Carbazole	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
4-Chloro-3-methylphenol	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
4-Chloroaniline	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
2-Chloronaphthalene	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
2-Chlorophenol	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
4-Chlorophenyl phenyl ether	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
Chrysene	<0.066	mg/Kg	0.066	1	07/13/15 22:05	RQE	L247389
Dibenz(a,h)anthracene	<0.066	mg/Kg	0.066	1	07/13/15 22:05	RQE	L247389
Dibenzofuran	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
1,2-Dichlorobenzene	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
1,3-Dichlorobenzene	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389

**Qualifiers/
Definitions**

* Outside QC limit
MQL Method Quantitation Limit

DF Dilution Factor
Q RPD >40% dual column results

05107

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Information :

Report Date : 07/15/2015

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Report Number : **15-189-0327**

REPORT OF ANALYSIS

Terri Gray
Project Manager

Lab No : **95853**

Matrix: **Solids**

Sample ID : **Rhodes Fill**

Sampled: **7/8/2015 13:30**

Analytical Method: 8270C

Prep Method: 3546

Prep Batch(es): L247265

Date/Time Prepped: 7/13/2015 12:30:00

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
1,4-Dichlorobenzene	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
3,3'-Dichlorobenzidine	<0.330	mg/Kg	0.330	1	07/13/15 22:05	RQE	L247389
2,4-Dichlorophenol	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
2,6-Dichlorophenol	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
Diethyl phthalate	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
Dimethyl phthalate	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
3,3' Dimethylbenzidine	<0.330	mg/Kg	0.330	1	07/13/15 22:05	RQE	L247389
2,4-Dimethylphenol	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
Di-n-butyl phthalate	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
4,6-Dinitro-2-methylphenol	<0.330	mg/Kg	0.330	1	07/13/15 22:05	RQE	L247389
2,4-Dinitrophenol	<1.67	mg/Kg	1.67	1	07/13/15 22:05	RQE	L247389
2,4-Dinitrotoluene	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
2,6-Dinitrotoluene	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
Di-n-Octyl Phthalate	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
Fluoranthene	<0.066	mg/Kg	0.066	1	07/13/15 22:05	RQE	L247389
Fluorene	<0.066	mg/Kg	0.066	1	07/13/15 22:05	RQE	L247389
Hexachlorobenzene	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
Hexachlorobutadiene	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
Hexachlorocyclopentadiene	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
Hexachloroethane	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
Indeno(1,2,3-cd)pyrene	<0.066	mg/Kg	0.066	1	07/13/15 22:05	RQE	L247389
Isophorone	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389

**Qualifiers/
Definitions**

*

Outside QC limit

MQL

Method Quantitation Limit

DF

Dilution Factor

Q

RPD >40% dual column results

05107

Pangean-CMD Associates an ECS Company

Mr. Keith Yarrow

3144 Stage Post Dr.

Suite 112

Bartlett, TN 38133

Project Springdale Apts.

Information :

Report Date : 07/15/2015

Received : 7/8/2015

Terri Gray

Report Number : **15-189-0327**

REPORT OF ANALYSIS

Terri Gray
Project Manager

Lab No : **95853**

Matrix: **Solids**

Sample ID : **Rhodes Fill**

Sampled: **7/8/2015 13:30**

Analytical Method: 8270C

Prep Method: 3546

Prep Batch(es): L247265

Date/Time Prepped: 7/13/2015 12:30:00

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
2-Methylnaphthalene	<0.066	mg/Kg	0.066	1	07/13/15 22:05	RQE	L247389
2-Methylphenol	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
3&4 Methylphenol	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
Naphthalene	<0.066	mg/Kg	0.066	1	07/13/15 22:05	RQE	L247389
2-Nitroaniline	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
3-Nitroaniline	<0.330	mg/Kg	0.330	1	07/13/15 22:05	RQE	L247389
4-Nitroaniline	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
Nitrobenzene	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
2-Nitrophenol	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
4-Nitrophenol	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
N-Nitrosodimethylamine	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
N-Nitrosodiphenylamine	<0.330	mg/Kg	0.330	1	07/13/15 22:05	RQE	L247389
N-Nitrosodiethylamine	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
N-Nitroso-di-n-butylamine	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
N-Nitroso-di-n-propylamine	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
Pentachlorophenol	<0.330	mg/Kg	0.330	1	07/13/15 22:05	RQE	L247389
Phenanthrene	<0.066	mg/Kg	0.066	1	07/13/15 22:05	RQE	L247389
Phenol	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
Pyrene	<0.066	mg/Kg	0.066	1	07/13/15 22:05	RQE	L247389
Pyridine	<0.330	mg/Kg	0.330	1	07/13/15 22:05	RQE	L247389
1,2,4,5-Tetrachlorobenzene	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
2,3,4,6-Tetrachlorophenol	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389

**Qualifiers/
Definitions**

*

Outside QC limit

MQL

Method Quantitation Limit

DF

Dilution Factor

Q

RPD >40% dual column results

05107

Pangean-CMD Associates an ECS Company

Mr. Keith Yarrow

3144 Stage Post Dr.

Suite 112

Bartlett, TN 38133

Project Springdale Apts.

Information :

Report Date : 07/15/2015

Received : 7/8/2015

Terri Gray

Report Number : **15-189-0327**

REPORT OF ANALYSIS

Terri Gray
Project Manager

Lab No : **95853**

Matrix: **Solids**

Sample ID : **Rhodes Fill**

Sampled: **7/8/2015 13:30**

Analytical Method: 8270C

Prep Method: 3546

Prep Batch(es): L247265

Date/Time Prepped: 7/13/2015 12:30:00

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
1,2,4-Trichlorobenzene	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
2,4,5-Trichlorophenol	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
2,4,6-Trichlorophenol	<0.170	mg/Kg	0.170	1	07/13/15 22:05	RQE	L247389
Surrogate: 2-Fluorobiphenyl	48.8		Limits: 33-115%	1	07/13/15 22:05	RQE	L247389
Surrogate: 2-Fluorophenol	34.4		Limits: 10-119%	1	07/13/15 22:05	RQE	L247389
Surrogate: Nitrobenzene-d5	44.2		Limits: 29-110%	1	07/13/15 22:05	RQE	L247389
Surrogate: Phenol-d6	37.4		Limits: 11-125%	1	07/13/15 22:05	RQE	L247389
Surrogate: 4-Terphenyl-d14	57.9		Limits: 33-122%	1	07/13/15 22:05	RQE	L247389
Surrogate: 2,4,6-Tribromophenol	53.3		Limits: 9-134%	1	07/13/15 22:05	RQE	L247389

**Qualifiers/
Definitions**

*

Outside QC limit

DF

Dilution Factor

MQL

Method Quantitation Limit

Q

RPD >40% dual column results

Cooler Receipt Form

Customer Number: **05107**

Customer Name: **Pangean-CMD Associates an ECS Company**

Report Number: **15-189-0327**

Shipping Method

<input type="radio"/> Fed Ex	<input type="radio"/> US Postal	<input type="radio"/> Lab	<input type="radio"/> Other :	<div></div>
<input type="radio"/> UPS	<input checked="" type="radio"/> Client	<input type="radio"/> Courier	Thermometer ID:	<div>#6</div>

Shipping container/cooler uncompromised?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Number of coolers received	<div>1</div>		
Custody seals intact on shipping container/cooler?	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Not Required
Custody seals intact on sample bottles?	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Not Required
Chain of Custody (COC) present?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
COC agrees with sample label(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
COC properly completed	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Samples in proper containers?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Sample containers intact?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Sufficient sample volume for indicated test(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
All samples received within holding time?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Cooler temperature in compliance?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Cooler/Samples arrived at the laboratory on ice. Samples were considered acceptable as cooling process had begun.	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Water - Sample containers properly preserved	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
Water - VOA vials free of headspace	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
Trip Blanks received with VOAs	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
Soil VOA method 5035 – compliance criteria met	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
<input type="checkbox"/> High concentration container (48 hr)	<input type="checkbox"/> Low concentration EnCore samplers (48 hr)		
<input type="checkbox"/> High concentration pre-weighed (methanol -14 d)	<input type="checkbox"/> Low conc pre-weighed vials (Sod Bis -14 d)		
Special precautions or instructions included?	<input type="radio"/> Yes	<input checked="" type="radio"/> No	

Comments:

Any regulatory non-compliance issues will be recorded on non-compliance report.

Signature:

Cody Gardner

Date & Time:

07/08/2015 14:54:12



ENVIRONMENTAL TESTING & CONSULTING, INC.

2790 Whitten Road Memphis, Tennessee 38133 (901) 213-2400 Fax (901) 213-2440

CHAIN OF CUSTODY



15-189-0327
05107
07-08-2015
14:53:36

Pangean-CMD Associates an ECS Company
Springdale Apts.

Company Name Pangean-CMD Associates an ECS Company				Customer Number 05107		Telephone (901) 259-2362		RUSH	ICE <input checked="" type="checkbox"/>
Site Name Springdale Apts.			Project Comment					FID Number	
Project			Project Number		PO Number				
Project Manager / Contact Keith Yarrow Pangean-CMD Associates an ECS Company				E-mail kyarrow@elconsult.com					
Sample ID	Container Type	Collected Date / Time	# Cont	Preservative	Grab / Comp	Matrix	Analyses		
Rhodes Fill	Glass - 4oz	7/8/15 13:30	1	NONE	C	Solids	VOC, % Moist		
h	Glass - 9oz	11	1	NONE	C	Solids	SVOC, Pesticides, PCB		
h	Glass - 4oz	11	1	NONE	C	Solids	PP Metals, Hg		

Sampled By Keith Yarrow		Method of Shipment Delivered		Blank / Cooler Temperature 2.1°C TL-099		Remarks	
Relinquished By (sign) [Signature]		Date / Time 7/8/15 1406		Received By (sign)		Date / Time	
Relinquished By (sign)		Date / Time		Received By (sign)		Date / Time	
Relinquished By (sign)		Date / Time		Received by Lab (sign) [Signature]		Date / Time 7/8/15 14:06	

University of Memphis Borrow Soil Results

6/30/2016

Memphis Environmental Center
Mr. George Harvell
1199 Warford
Memphis, TN, 38108

Ref: Analytical Testing
Lab Report Number: 16-172-0319
Client Project Description: Springdale Soil Sampling

Dear Mr. George Harvell:
Waypoint Analytical, Inc. received sample(s) on 6/20/2016 for the analyses presented in the following report.

The above referenced project has been analyzed per your instructions. The analyses were performed in accordance with the applicable analytical method.

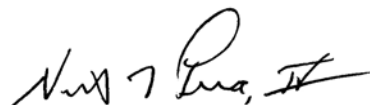
The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, method validations, instrumentation maintenance and calibration for all parameters (NELAP and non-NELAP) were performed in accordance with guidelines established by the USEPA (including 40 CFR 136 Method Update Rule May 2012) and NELAC unless otherwise indicated. Any parameter for which the laboratory is not officially NELAP accredited is indicated by a '~' symbol. These are not included in the scope because NELAP accreditation is either not available or has not been applied for. Additional certifications may be held/are available for parameters, where NELAP accreditation is not required or applicable. A full list of certifications is available upon request.

Certain parameters (chlorine, pH, dissolved oxygen, sulfite...) are required to be analyzed within 15 minutes of sampling. Usually, but not always, any field parameter analyzed at the laboratory is outside of this holding time. Refer to sample analysis time for confirmation of holding time compliance.

The results are shown on the attached Report of Analysis(s). Results for solid matrices are reported on an as-received basis unless otherwise indicated. This report shall not be reproduced except in full and relates only to the samples included in this report.

Please do not hesitate to contact me or client services if you have any questions or need additional information.

Sincerely,



Nathan Pera
Project Manager

Laboratory's liability in any claim relating to analyses performed shall be limited to, at laboratory's option, repeating the analysis in question at laboratory's expense, or the refund of the charges paid for performance of said analysis.

Alabama #40750	Louisiana #04015	VA NELAP #460181	Texas #T104704180-11-6	Arkansas #88-0650
Mississippi	California #2904	NC #415	Oklahoma #9311	Virginia #00106
Kentucky #90047	Tennessee #TN02027	EPA #TN00012	Kentucky UST #41	Kansas #E-10396



05110

Memphis Environmental Center
Mr. George Harvell
1199 Warford
Memphis , TN 38108

Project Springdale Soil Sampling
Information :

Report Date : 06/30/2016
Received : 6/20/2016

Report Number : **16-172-0319**

REPORT OF ANALYSIS

Lab No : **93679**

Matrix: **Solids**

Sample ID : **U of M**

Sampled: **6/20/2016 12:30**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Antimony	0.851	mg/Kg	0.500	1	06/22/16 02:15	BKN	6010C
Total Arsenic	8.38	mg/Kg	1.00	1	06/22/16 02:15	BKN	6010C
Total Beryllium	0.363	mg/Kg	0.0500	1	06/22/16 02:15	BKN	6010C
Total Cadmium	0.348	mg/Kg	0.100	1	06/22/16 02:15	BKN	6010C
Total Chromium	10.4	mg/Kg	0.250	1	06/22/16 02:15	BKN	6010C
Total Copper	14.4	mg/Kg	0.250	1	06/22/16 02:15	BKN	6010C
Total Lead	12.6	mg/Kg	0.300	1	06/22/16 02:15	BKN	6010C
Mercury (Total)	0.0446	mg/Kg	0.0133	1	06/21/16 11:20	KKM	7471A
Total Nickel	13.9	mg/Kg	0.250	1	06/22/16 02:15	BKN	6010C
Total Selenium	<1.00	mg/Kg	1.00	1	06/22/16 02:15	BKN	6010C
Total Silver	<0.250	mg/Kg	0.250	1	06/22/16 02:15	BKN	6010C
Total Thallium	<1.00	mg/Kg	1.00	1	06/22/16 02:15	BKN	6010C
Total Zinc	47.8	mg/Kg	0.500	1	06/22/16 02:15	BKN	6010C

**Qualifiers/
Definitions**

DF Dilution Factor
Q RPD >40% dual column results

MQL Method Quantitation Limit

05110

Memphis Environmental Center
Mr. George Harvell
1199 Warford
Memphis , TN 38108

Project Springdale Soil Sampling
Information :

Report Date : 06/30/2016
Received : 6/20/2016

Report Number : **16-172-0319**

REPORT OF ANALYSIS

Lab No : **93679**

Matrix: **Solids**

Sample ID : **U of M**

Sampled: **6/20/2016 12:30**

Analytical Method: 8081A

Prep Batch(es): **L291739** 06/22/16 11:30

Prep Method: 3546

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aldrin	0.0065	mg/Kg	0.0020	10	06/23/16 23:43	VIC	L292108
alpha-BHC	<0.0020	mg/Kg	0.0020	10	06/23/16 23:43	VIC	L292108
beta-BHC	<0.0020	mg/Kg	0.0020	10	06/23/16 23:43	VIC	L292108
delta-BHC	<0.0020	mg/Kg	0.0020	10	06/23/16 23:43	VIC	L292108
Chlordane	0.0628	mg/Kg	0.0200	10	06/23/16 23:43	VIC	L292108
alpha-Chlordane	0.0033	mg/Kg	0.0020	10	06/23/16 23:43	VIC	L292108
gamma-Chlordane	0.0041	mg/Kg	0.0020	10	06/23/16 23:43	VIC	L292108
4,4'-DDD	<0.0020	mg/Kg	0.0020	10	06/23/16 23:43	VIC	L292108
4,4'-DDE	0.0077	mg/Kg	0.0020	10	06/23/16 23:43	VIC	L292108
4,4'-DDT	0.0020	mg/Kg	0.0020	10	06/23/16 23:43	VIC	L292108
Dieldrin	0.0070	mg/Kg	0.0020	10	06/23/16 23:43	VIC	L292108
Endosulfan I	<0.0020	mg/Kg	0.0020	10	06/23/16 23:43	VIC	L292108
Endosulfan II	<0.0020	mg/Kg	0.0020	10	06/23/16 23:43	VIC	L292108
Endosulfan Sulfate	<0.0020	mg/Kg	0.0020	10	06/23/16 23:43	VIC	L292108
Endrin	<0.0020	mg/Kg	0.0020	10	06/23/16 23:43	VIC	L292108
Endrin Aldehyde	<0.0020	mg/Kg	0.0020	10	06/23/16 23:43	VIC	L292108
Endrin Ketone	<0.0020	mg/Kg	0.0020	10	06/23/16 23:43	VIC	L292108
gamma-BHC	<0.0020	mg/Kg	0.0020	10	06/23/16 23:43	VIC	L292108
Heptachlor	<0.0020	mg/Kg	0.0020	10	06/23/16 23:43	VIC	L292108
Heptachlor Epoxide	<0.0020	mg/Kg	0.0020	10	06/23/16 23:43	VIC	L292108
Methoxychlor	<0.0020	mg/Kg	0.0020	10	06/23/16 23:43	VIC	L292108

**Qualifiers/
Definitions**

DF Dilution Factor
Q RPD >40% dual column results

MQL Method Quantitation Limit

05110

Memphis Environmental Center
Mr. George Harvell
1199 Warford
Memphis , TN 38108

Project Springdale Soil Sampling
Information :

Report Date : 06/30/2016
Received : 6/20/2016

Report Number : **16-172-0319**

REPORT OF ANALYSIS

Lab No : **93679**

Matrix: **Solids**

Sample ID : **U of M**

Sampled: **6/20/2016 12:30**

Analytical Method: 8081A **Prep Batch(es):** **L291739** 06/22/16 11:30

Prep Method: 3546

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Toxaphene	<0.200	mg/Kg	0.200	10	06/23/16 23:43	VIC	L292108
Surrogate: Decachlorobiphenyl	86.4		Limits: 37-165%	10	06/23/16 23:43	VIC	L292108
Surrogate: Tetrachloro-m-xylene	61.3		Limits: 18-158%	10	06/23/16 23:43	VIC	L292108

Analytical Method: 8082 **Prep Batch(es):** **L291740** 06/22/16 11:30

Prep Method: 3546

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aroclor 1016	<0.0066	mg/Kg	0.0066	1	06/23/16 15:55	VIC	L292105
Aroclor 1221	<0.0066	mg/Kg	0.0066	1	06/23/16 15:55	VIC	L292105
Aroclor 1232	<0.0066	mg/Kg	0.0066	1	06/23/16 15:55	VIC	L292105
Aroclor 1242	<0.0066	mg/Kg	0.0066	1	06/23/16 15:55	VIC	L292105
Aroclor 1248	<0.0066	mg/Kg	0.0066	1	06/23/16 15:55	VIC	L292105
Aroclor 1254	<0.0066	mg/Kg	0.0066	1	06/23/16 15:55	VIC	L292105
Aroclor 1260	<0.0066	mg/Kg	0.0066	1	06/23/16 15:55	VIC	L292105
Surrogate: Decachlorobiphenyl	50.2		Limits: 25-125%	1	06/23/16 15:55	VIC	L292105
Surrogate: Tetrachloro-m-xylene	37.7		Limits: 25-125%	1	06/23/16 15:55	VIC	L292105

Analytical Method: 8260B **Prep Batch(es):** **L291698** 06/21/16 13:08

Prep Method: 5030A

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Acetone	<0.0400	mg/Kg	0.0400	1	06/21/16 21:59	LAT	L291713

Qualifiers/ Definitions	DF	Dilution Factor	MQL	Method Quantitation Limit
Q		RPD >40% dual column results		

05110

Memphis Environmental Center
Mr. George Harvell
1199 Warford
Memphis , TN 38108

Project Springdale Soil Sampling
Information :

Report Date : 06/30/2016
Received : 6/20/2016

Report Number : **16-172-0319**

REPORT OF ANALYSIS

Lab No : **93679**

Matrix: **Solids**

Sample ID : **U of M**

Sampled: **6/20/2016 12:30**

Analytical Method: 8260B

Prep Batch(es): **L291698** 06/21/16 13:08

Prep Method: 5030A

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Acetonitrile	<0.100	mg/Kg	0.100	1	06/21/16 21:59	LAT	L291713
Acrolein	<0.0400	mg/Kg	0.0400	1	06/21/16 21:59	LAT	L291713
Acrylonitrile	<0.0400	mg/Kg	0.0400	1	06/21/16 21:59	LAT	L291713
Benzene	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
Bromobenzene	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
Bromochloromethane	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
Bromodichloromethane	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
Bromoform	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
Bromomethane	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
Methyl Ethyl Ketone (MEK)	<0.0400	mg/Kg	0.0400	1	06/21/16 21:59	LAT	L291713
n-Butylbenzene	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
sec-Butyl benzene	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
tert-Butyl benzene	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
Carbon Disulfide	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
Carbon Tetrachloride	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
Chlorobenzene	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
Chlorodibromomethane	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
Chloroethane	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
2-Chloroethylvinyl Ether	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
Chloroform	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
Chloromethane	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
2-Chlorotoluene	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713

**Qualifiers/
Definitions**

DF Dilution Factor
Q RPD >40% dual column results

MQL Method Quantitation Limit

05110

Memphis Environmental Center
Mr. George Harvell
1199 Warford
Memphis , TN 38108

Project Springdale Soil Sampling
Information :

Report Date : 06/30/2016
Received : 6/20/2016

Report Number : **16-172-0319**

REPORT OF ANALYSIS

Lab No : **93679**

Matrix: **Solids**

Sample ID : **U of M**

Sampled: **6/20/2016 12:30**

Analytical Method: 8260B

Prep Batch(es): **L291698** 06/21/16 13:08

Prep Method: 5030A

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
4-Chlorotoluene	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
1,2-Dibromo-3-Chloropropane	<0.0100	mg/Kg	0.0100	1	06/21/16 21:59	LAT	L291713
1,2-Dibromoethane	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
Dibromomethane	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
1,2-Dichlorobenzene	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
1,3-Dichlorobenzene	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
1,4-Dichlorobenzene	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
Dichlorodifluoromethane	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
1,1-Dichloroethane	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
1,2-Dichloroethane	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
1,1-Dichloroethene	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
cis-1,2-Dichloroethene	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
trans-1,2-Dichloroethene	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
1,2-Dichloroethene (Total)	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59		L291713
1,2-Dichloropropane	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
1,3-Dichloropropane	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
2,2-Dichloropropane	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
1,1-Dichloropropene	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
cis-1,3-Dichloropropene	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
trans-1,3-Dichloropropene	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
Ethyl Acetate	<0.0400	mg/Kg	0.0400	1	06/21/16 21:59	LAT	L291713
Ethylbenzene	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713

**Qualifiers/
Definitions**

DF Dilution Factor
Q RPD >40% dual column results

MQL Method Quantitation Limit

05110

Memphis Environmental Center
Mr. George Harvell
1199 Warford
Memphis , TN 38108

Project Springdale Soil Sampling
Information :

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REPORT OF ANALYSIS

Lab No : **93679**

Matrix: **Solids**

Sample ID : **U of M**

Sampled: **6/20/2016 12:30**

Analytical Method: 8260B

Prep Batch(es): **L291698** 06/21/16 13:08

Prep Method: 5030A

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Hexachlorobutadiene	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
2-Hexanone	<0.0100	mg/Kg	0.0100	1	06/21/16 21:59	LAT	L291713
Iodomethane	<0.0100	mg/Kg	0.0100	1	06/21/16 21:59	LAT	L291713
Isopropylbenzene	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
4-Isopropyl toluene	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
Methyl tert-butyl ether (MTBE)	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
4-Methyl-2-Pentanone	<0.0100	mg/Kg	0.0100	1	06/21/16 21:59	LAT	L291713
Methylene Chloride	<0.0200	mg/Kg	0.0200	1	06/21/16 21:59	LAT	L291713
Naphthalene	<0.0100	mg/Kg	0.0100	1	06/21/16 21:59	LAT	L291713
n-Propylbenzene	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
Styrene	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
1,1,1,2-Tetrachloroethane	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
1,1,2,2-Tetrachloroethane	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
Tetrachloroethene	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
Toluene	<0.0100	mg/Kg	0.0100	1	06/21/16 21:59	LAT	L291713
1,2,3-Trichlorobenzene	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
1,2,4-Trichlorobenzene	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
1,1,1-Trichloroethane	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
1,1,2-Trichloroethane	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
Trichloroethene	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
Trichlorofluoromethane	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
1,2,3-Trichloropropane	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713

**Qualifiers/
Definitions**

DF Dilution Factor
Q RPD >40% dual column results

MQL Method Quantitation Limit

05110

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Information :

Report Date : 06/30/2016
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Report Number : **16-172-0319**

REPORT OF ANALYSIS

Lab No : **93679**

Matrix: **Solids**

Sample ID : **U of M**

Sampled: **6/20/2016 12:30**

Analytical Method: 8260B

Prep Batch(es): **L291698** 06/21/16 13:08

Prep Method: 5030A

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
1,2,4-Trimethylbenzene	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
1,3,5-Trimethylbenzene	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
Vinyl Acetate	<0.0400	mg/Kg	0.0400	1	06/21/16 21:59	LAT	L291713
Vinyl Chloride	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
o-Xylene	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59	LAT	L291713
m,p-Xylene	<0.0040	mg/Kg	0.0040	1	06/21/16 21:59	LAT	L291713
Xylene (Total)	<0.0020	mg/Kg	0.0020	1	06/21/16 21:59		L291713
Surrogate: 4-Bromofluorobenzene	127		Limits: 60-130%	1	06/21/16 21:59	LAT	L291713
Surrogate: 1,2-Dichloroethane - d4	110		Limits: 60-132%	1	06/21/16 21:59	LAT	L291713
Surrogate: Toluene-d8	107		Limits: 70-122%	1	06/21/16 21:59	LAT	L291713

Analytical Method: 8270C

Prep Batch(es): **L292125** 06/24/16 15:30

Prep Method: 3546

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Acenaphthene	<0.066	mg/Kg	0.066	1	06/29/16 13:44	RQE	L292654
Acenaphthylene	<0.066	mg/Kg	0.066	1	06/29/16 13:44	RQE	L292654
Acetophenone	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
Aniline	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
Anthracene	<0.066	mg/Kg	0.066	1	06/29/16 13:44	RQE	L292654
Benzo(a)anthracene	<0.066	mg/Kg	0.066	1	06/29/16 13:44	RQE	L292654
Benzo(a)pyrene	<0.066	mg/Kg	0.066	1	06/29/16 13:44	RQE	L292654

**Qualifiers/
Definitions**

DF Dilution Factor
Q RPD >40% dual column results

MQL Method Quantitation Limit

05110

Memphis Environmental Center
Mr. George Harvell
1199 Warford
Memphis , TN 38108

Project Springdale Soil Sampling
Information :

Report Date : 06/30/2016
Received : 6/20/2016

Report Number : **16-172-0319**

REPORT OF ANALYSIS

Lab No : **93679**

Matrix: **Solids**

Sample ID : **U of M**

Sampled: **6/20/2016 12:30**

Analytical Method: 8270C

Prep Batch(es): **L292125** 06/24/16 15:30

Prep Method: 3546

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Benzo(b)fluoranthene	<0.066	mg/Kg	0.066	1	06/29/16 13:44	RQE	L292654
Benzo(g,h,i)perylene	<0.066	mg/Kg	0.066	1	06/29/16 13:44	RQE	L292654
Benzo(k)fluoranthene	<0.066	mg/Kg	0.066	1	06/29/16 13:44	RQE	L292654
Benzoic Acid	<0.330	mg/Kg	0.330	1	06/29/16 13:44	RQE	L292654
Benzyl alcohol	<0.330	mg/Kg	0.330	1	06/29/16 13:44	RQE	L292654
Bis(2-Chloroethoxy)methane	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
Bis(2-Chloroethyl)ether	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
Bis(2-Chloroisopropyl)ether	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
Bis(2-ethylhexyl)phthalate	<0.330	mg/Kg	0.330	1	06/29/16 13:44	RQE	L292654
4-Bromophenyl phenyl ether	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
Butyl benzyl phthalate	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
Carbazole	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
4-Chloro-3-methylphenol	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
4-Chloroaniline	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
2-Chloronaphthalene	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
2-Chlorophenol	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
4-Chlorophenyl phenyl ether	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
Chrysene	<0.066	mg/Kg	0.066	1	06/29/16 13:44	RQE	L292654
Dibenz(a,h)anthracene	<0.066	mg/Kg	0.066	1	06/29/16 13:44	RQE	L292654
Dibenzofuran	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
1,2-Dichlorobenzene	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
1,3-Dichlorobenzene	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654

**Qualifiers/
Definitions**

DF Dilution Factor
Q RPD >40% dual column results

MQL Method Quantitation Limit

05110

Memphis Environmental Center
Mr. George Harvell
1199 Warford
Memphis , TN 38108

Project Springdale Soil Sampling
Information :

Report Date : 06/30/2016
Received : 6/20/2016

Report Number : **16-172-0319**

REPORT OF ANALYSIS

Lab No : **93679**

Matrix: **Solids**

Sample ID : **U of M**

Sampled: **6/20/2016 12:30**

Analytical Method: 8270C

Prep Batch(es): **L292125** 06/24/16 15:30

Prep Method: 3546

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
1,4-Dichlorobenzene	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
3,3'-Dichlorobenzidine	<0.330	mg/Kg	0.330	1	06/29/16 13:44	RQE	L292654
2,4-Dichlorophenol	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
2,6-Dichlorophenol	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
Diethyl phthalate	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
Dimethyl phthalate	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
3,3' Dimethylbenzidine	<0.330	mg/Kg	0.330	1	06/29/16 13:44	RQE	L292654
2,4-Dimethylphenol	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
Di-n-butyl phthalate	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
4,6-Dinitro-2-methylphenol	<0.330	mg/Kg	0.330	1	06/29/16 13:44	RQE	L292654
2,4-Dinitrophenol	<1.67	mg/Kg	1.67	1	06/29/16 13:44	RQE	L292654
2,4-Dinitrotoluene	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
2,6-Dinitrotoluene	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
Di-n-Octyl Phthalate	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
Fluoranthene	<0.066	mg/Kg	0.066	1	06/29/16 13:44	RQE	L292654
Fluorene	<0.066	mg/Kg	0.066	1	06/29/16 13:44	RQE	L292654
Hexachlorobenzene	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
Hexachlorobutadiene	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
Hexachlorocyclopentadiene	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
Hexachloroethane	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
Indeno(1,2,3-cd)pyrene	<0.066	mg/Kg	0.066	1	06/29/16 13:44	RQE	L292654
Isophorone	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654

**Qualifiers/
Definitions**

DF Dilution Factor
Q RPD >40% dual column results

MQL Method Quantitation Limit

05110

Memphis Environmental Center
Mr. George Harvell
1199 Warford
Memphis , TN 38108

Project Springdale Soil Sampling
Information :

Report Date : 06/30/2016
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Report Number : **16-172-0319**

REPORT OF ANALYSIS

Lab No : **93679**

Matrix: **Solids**

Sample ID : **U of M**

Sampled: **6/20/2016 12:30**

Analytical Method: 8270C

Prep Batch(es): **L292125** 06/24/16 15:30

Prep Method: 3546

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
2-Methylnaphthalene	<0.066	mg/Kg	0.066	1	06/29/16 13:44	RQE	L292654
2-Methylphenol	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
3&4 Methylphenol	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
Naphthalene	<0.066	mg/Kg	0.066	1	06/29/16 13:44	RQE	L292654
2-Nitroaniline	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
3-Nitroaniline	<0.330	mg/Kg	0.330	1	06/29/16 13:44	RQE	L292654
4-Nitroaniline	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
Nitrobenzene	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
2-Nitrophenol	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
4-Nitrophenol	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
N-Nitrosodimethylamine	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
N-Nitrosodiphenylamine	<0.330	mg/Kg	0.330	1	06/29/16 13:44	RQE	L292654
N-Nitrosodiethylamine	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
N-Nitroso-di-n-butylamine	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
N-Nitroso-di-n-propylamine	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
Pentachlorophenol	<0.330	mg/Kg	0.330	1	06/29/16 13:44	RQE	L292654
Phenanthrene	0.085	mg/Kg	0.066	1	06/29/16 13:44	RQE	L292654
Phenol	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
Pyrene	<0.066	mg/Kg	0.066	1	06/29/16 13:44	RQE	L292654
Pyridine	<0.330	mg/Kg	0.330	1	06/29/16 13:44	RQE	L292654
1,2,4,5-Tetrachlorobenzene	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
2,3,4,6-Tetrachlorophenol	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654

**Qualifiers/
Definitions**

DF
Q

Dilution Factor
RPD >40% dual column results

MQL

Method Quantitation Limit

05110

Memphis Environmental Center
Mr. George Harvell
1199 Warford
Memphis , TN 38108

Project Springdale Soil Sampling
Information :

Report Date : 06/30/2016
Received : 6/20/2016

Report Number : **16-172-0319**

REPORT OF ANALYSIS

Lab No : **93679**

Matrix: **Solids**

Sample ID : **U of M**

Sampled: **6/20/2016 12:30**

Analytical Method: 8270C

Prep Batch(es): **L292125** 06/24/16 15:30

Prep Method: 3546

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
1,2,4-Trichlorobenzene	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
2,4,5-Trichlorophenol	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
2,4,6-Trichlorophenol	<0.170	mg/Kg	0.170	1	06/29/16 13:44	RQE	L292654
Surrogate: 2-Fluorobiphenyl	64.2		Limits: 33-115%	1	06/29/16 13:44	RQE	L292654
Surrogate: 2-Fluorophenol	57.4		Limits: 10-119%	1	06/29/16 13:44	RQE	L292654
Surrogate: Nitrobenzene-d5	68.1		Limits: 29-110%	1	06/29/16 13:44	RQE	L292654
Surrogate: Phenol-d6	68.1		Limits: 11-125%	1	06/29/16 13:44	RQE	L292654
Surrogate: 4-Terphenyl-d14	70.5		Limits: 33-122%	1	06/29/16 13:44	RQE	L292654
Surrogate: 2,4,6-Tribromophenol	54.7		Limits: 9-134%	1	06/29/16 13:44	RQE	L292654

Qualifiers/ Definitions

DF Dilution Factor
Q RPD >40% dual column results

MQL Method Quantitation Limit

Cooler Receipt Form

Customer Number: **05110**

Customer Name: **Memphis Environmental Center**

Report Number: **16-172-0319**

Shipping Method

<input type="radio"/> Fed Ex	<input type="radio"/> US Postal	<input type="radio"/> Lab	<input type="radio"/> Other :	<div></div>
<input type="radio"/> UPS	<input checked="" type="radio"/> Client	<input type="radio"/> Courier	Thermometer ID:	<div>#7</div>

Shipping container/cooler uncompromised?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Number of coolers received	<div>1</div>		
Custody seals intact on shipping container/cooler?	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Not Required
Custody seals intact on sample bottles?	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Not Required
Chain of Custody (COC) present?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
COC agrees with sample label(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
COC properly completed	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Samples in proper containers?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Sample containers intact?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Sufficient sample volume for indicated test(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
All samples received within holding time?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Cooler temperature in compliance?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Cooler/Samples arrived at the laboratory on ice. Samples were considered acceptable as cooling process had begun.	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Water - Sample containers properly preserved	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
Water - VOA vials free of headspace	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
Trip Blanks received with VOAs	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
Soil VOA method 5035 – compliance criteria met	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
<input type="checkbox"/> High concentration container (48 hr)	<input type="checkbox"/> Low concentration EnCore samplers (48 hr)		
<input type="checkbox"/> High concentration pre-weighed (methanol -14 d)	<input type="checkbox"/> Low conc pre-weighed vials (Sod Bis -14 d)		
Special precautions or instructions included?	<input type="radio"/> Yes	<input checked="" type="radio"/> No	

Comments:

Any regulatory non-compliance issues will be recorded on non-compliance report.

Signature:

Danyale Love

Date & Time:

06/20/2016 16:08:11

APPENDIX E

Dust Monitoring Record

Dust Monitoring Log
Springdale Apartments - North End
Corrective Measures Implementation

Dust Monitor	Date	Event - Location	Time	Real Time Concentration	Time Weighted Average
4671	10/20/2016	Hot Spot Excavation - South Fence Near Springdale Apartments	15:32	0	0
			15:55	0	0.002
			16:53	0	0
			17:14	0	0
15702	10/20/2016	Hot Spot Excavation - Western Fence Near Residence	15:35	0	0
			15:59	9.7	8.9
			16:55	12.6	8.8
			17:06	7.3	8.6
15702	10/29/2016	Rough Grade Soil Handling - South Fence near Springdale Apartments	8:43	17.4	17.4
			10:55	7.7	14.5
			16:15	4	9.5
4671	10/29/2016	Rough Grade Soil Handling - East Property Line Near Cypress Creek	8:48	0	0
			11:10	0	0
			16:09	0	0
4671	10/30/2016	Rough Grade Soil Handling - East Property Line	13:15	0.006	0.294
			14:30	0	0
15702	10/30/2016	Rough Grade Soil Handling - South Fence near Springdale Apartments	13:17	3.5	2.1
			14:34	19.3	6.2

APPENDIX F

Air Sampling Analytical Results

Background Sampling Results

LABORATORY ANALYSIS REPORT

ESIS Environmental Health Laboratory

100 Sebethe Drive, Suite A-5
Cromwell, CT 06416
(860) 635-6475 or (800) 243-4903

To: Keith Yarrow
Environmental Compliance Services
3144 Stage Post Road Suite 112
Memphis, TN 38133

Report #: C1550338

P.O. No.:
PO 28-222336.00 J. Knapik -Endrin, Dieldrin -

Date Received: 09/10/2015

Date Reported: 09/25/2015

Page 1 of 1

Analysis: Dieldrin and Endrin

Analytical Method: Gas Chromatography; OSHA 67 - OVS XAD-2

Prep Date: 09/24/15

Analysis Date: 09/24/15

Sample	Air Volume			
<u>Number</u>	<u>(Liters)</u>	<u>Component</u>	<u>ug</u>	<u>mg/m³</u>
Background	330	Dieldrin	<0.0200	<0.000061
		Endrin	<0.0200	<0.000061
#2	330	Dieldrin	<0.0200	<0.000061
		Endrin	<0.0200	<0.000061
Lab Blank		Dieldrin	<0.0200	Reporting Limit: 0.0200 ug
		Endrin	<0.0200	Reporting Limit: 0.0200 ug

A blank was not submitted with the samples. EHL recommends that a blank be submitted to check for contamination.

Samples analyzed by gas chromatography are quantitated by matching the retention times of sample peaks with those of known compounds. A matching retention time is not proof of chemical identity.

On all sorbent tubes and 3M 3520 organic vapor monitors the front and back section were analyzed separately.

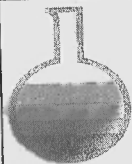
Unless indicated by an asterisk, significant breakthrough was not detected.

Concentrations reported are based on air volumes provided.

Unless noted, the condition of samples on receipt was acceptable. Results relate only to items tested in the condition received.

Approved By: James Kenny James Kenny CIH, CSP - Laboratory Manager

Date: 9/25/2015



ESIS, INC.
DBA Environmental Health Laboratory
One of the ACE Group of Companies
100 Sebethe Drive Suite A-5
Cromwell, CT 06416
(860) 635-6475 or (800) 243-4903 FAX (860) 635-6750

REQUEST FOR ANALYTICAL SERVICES

*Lab approval is REQUIRED for RUSH analysis
Please call ahead. Additional charges apply.

☐ Standard TAT

☐ Next Day RUSH TAT*

☐ 3 Day RUSH TAT*

☐ Same Day RUSH TAT*

FOR INTERNAL USE ONLY

Report #:

C1550338

Log In Date:

E/U #:

Control #:

Send INVOICE To:

Company Name: ECS Consultants

Mailing Address: 588 Silver Street

City, State, Zip: Agawam MA 01001

Accts. Payable Phone #:

AP Fax No:

Accts. Payable E-mail:

PO#, Ref # (If Required):

Sampling Location:

Send RESULTS To:

Company Name: ECS Consultants

Mailing Address: 3144 Stage post bl. Ste 112

City, State, Zip: Memphis, TN 38133

Phone No: 901-259-2362 Fax No:

E-mail: kyarrow@ecsconsult.com

Division:

Sampling Description:

RESULTS DELIVERY

(check all that apply)

☒ E-Mail

☐ Fax

☐ Phone

EHL # (Lab Use Only)	SAMPLE IDENTIFICATION (Name or Number)	MEDIA TYPE	ANALYSIS DESIRED (a 3 sample minimum charge applies when less than 3 of each specific analyte is requested.)	NOTES (Record location, operation, other compounds present, etc.)	DATE SAMPLED	SAMPLING RATE (liters/min)	TOTAL TIME (minutes)	SAMPLE VOLUME (liters)
1	Background		endrin, dieldrin		9/4/15	1 lpm	330	330
2	# 2		" "		9/4/15	1 lpm	330	330
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								

FOR NOTES ONLY:

Construction Sampling Results

LABORATORY ANALYSIS REPORT

ESIS Environmental Health Laboratory

100 Sebethe Drive, Suite A-5

Cromwell, CT 06416

(860) 635-6475 or (800) 243-4903

To: Keith Yarrow
Environmental Compliance Services
3144 Stage Post Road Suite 112
Memphis, TN 38133

Report #: C1550841

P.O. No.:
Endrin & Dieldrin - Keith Yarrow, 10/20 & 10/29

Date Received: 11/13/2015

Date Reported: 11/30/2015

Page 1 of 1

Analysis: Dieldrin and Endrin

Analytical Method: Gas Chromatography; OSHA 67 - OVS XAD-2

Prep Date: 11/30/15

Analysis Date: 11/30/15

Sample <u>Number</u>	Air Volume <u>(Liters)</u>	<u>Component</u>	<u>ug</u>	<u>mg/m³</u>
20151020	95.0	Dieldrin	<0.0200	<0.00021
		Endrin	<0.0200	<0.00021
20151029	491	Dieldrin	<0.0200	<0.000041
		Endrin	0.0337	0.000069
Trip Blank	---	Dieldrin	<0.0200	Reporting Limit: 0.0200 ug
		Endrin	<0.0200	Reporting Limit: 0.0200 ug

Analytical results do not require blank correction.

Samples analyzed by gas chromatography are quantitated by matching the retention times of sample peaks with those of known compounds. A matching retention time is not proof of chemical identity.

On all sorbent tubes and 3M 3520 organic vapor monitors the front and back section were analyzed separately.

Unless indicated by an asterisk, significant breakthrough was not detected.

Concentrations reported are based on air volumes provided.

Unless noted, the condition of samples on receipt was acceptable. Results relate only to items tested in the condition received.

Approved By: James Kenny James Kenny CIH, CSP - Laboratory Manager

Date: 11/30/2015



ESIS, INC.
DBA Environmental Health Laboratory
One of the ACE Group of Companies
100 Sebethe Drive Suite A-5
Cromwell, CT 06416
(860) 635-6475 or (800) 243-4903 FAX (860) 635-6750

REQUEST FOR ANALYTICAL SERVICES

*Lab approval is REQUIRED for RUSH analysis
Please call ahead. Additional charges apply.

☒ Standard TAT

☐ Next Day RUSH TAT*

☐ 3 Day RUSH TAT*

☐ Same Day RUSH TAT*

FOR INTERNAL USE ONLY

Report #: C1550841

Log In Date:

E/U #:

Control #:

Send INVOICE To:

Company Name: ECS Consultants

Mailing Address: 588 Silver Street

City, State, Zip: Agawam MA 01001

Accts. Payable Phone #: AP Fax No:

Accts. Payable E-mail:

PO#, Ref # (If Required):

Sampling Location:

Send RESULTS To: Keith Yarrow

Company Name: ECS Consultants

Mailing Address: 3144 Stage Post Rd.

City, State, Zip: Bartlett TN 38133

Phone No: 615 255 2362 Fax No:

E-mail: kyarrow@ECSconsult.com

Division:

Sampling Description:

CHAIN OF CUSTODY

Signature:

Print Name

Date/Time:

Relinquished by:

Received at lab by:

☒ Acceptable

☐ Unacceptable

RESULTS DELIVERY

(check all that apply)

☒ E-Mail

☐ Fax

☐ Phone

EHL # (Lab Use Only)	SAMPLE IDENTIFICATION (Name or Number)	MEDIA TYPE	ANALYSIS DESIRED (a 3 sample minimum charge applies when less than 3 of each specific analyte is requested.)	NOTES (Record location, operation, other compounds present, etc.)	DATE SAMPLED	SAMPLING RATE (liters/min)	TOTAL TIME (minutes)	SAMPLE VOLUME (liters)
1	20151020		endrin diol.		10/20/15	1 lpm		
2	20151029		dieldrin diol.		10/29/15	1 lpm		
3	Trip Blank		11					
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								

FOR NOTES ONLY:

APPENDIX G

Site Photographs

**Corrective Measures Implementation
Springdale Apartments - North End
Memphis, TN**



Photograph #1 10/05/15
Photo of initial site clearing along east property line.



Photograph #2 10/05/15
Photo of the east side of the site during site clearing, facing south.

**Corrective Measures Implementation
Springdale Apartments - North End
Memphis, TN**



Photograph #3 10/05/15

Photo of site clearing along the Cypress Creek retaining wall.



Photograph #4 10/05/15

Photo of the north end of the site during site clearing.

**Corrective Measures Implementation
Springdale Apartments - North End
Memphis, TN**



Photograph #5 10/06/15
Photo of concrete slab removal.



Photograph #6 10/08/15
Photo of concrete loading for transport to Velsicol Chemical Corp.

**Corrective Measures Implementation
Springdale Apartments - North End
Memphis, TN**



Photograph #7 10/08/15

Photo of concrete slab area after concrete removal.



Photograph #8 10/08/15

Photo of concrete stockpiled for loading.

**Corrective Measures Implementation
Springdale Apartments - North End
Memphis, TN**



Photograph #8 10/15/15

Photo of hot-spot survey staking prior to excavation.



Photograph #9 10/20/15

Photo of hot-spot removal.

**Corrective Measures Implementation
Springdale Apartments - North End
Memphis, TN**



Photograph #10 10/20/15
Photo of dust control during hot-spot excavation.



Photograph #11 10/20/15
Photo of south perimeter dust monitoring during hot-spot removal.

**Corrective Measures Implementation
Springdale Apartments - North End
Memphis, TN**



Photograph #12 10/20/16
Photo of hot-spot soil placement at Velsicol Chemical Corporation.



Photograph #13 10/23/16
Photo of Consolidation Area after covering hot-spot soil with HDPE.

**Corrective Measures Implementation
Springdale Apartments - North End
Memphis, TN**



Photograph #14 10/29/15

Photo of air monitor during implementation of rough grade.



Photograph #15 10/29/16

Photo of rough grade installation.

**Corrective Measures Implementation
Springdale Apartments - North End
Memphis, TN**



Photograph #16 11/05/16

Photo of marker layer placement along east side of site.



Photograph #17 11/10/16

Photo of final soil cap placement along east side of site.

**Corrective Measures Implementation
Springdale Apartments - North End
Memphis, TN**



Photograph #18 11/11/15

Photo of marker layer and soil cap placement in northern portion of site.



Photograph #19 12/28/15

Photo of soil cap during wet winter conditions when work was halted.

**Corrective Measures Implementation
Springdale Apartments - North End
Memphis, TN**



Photograph #20 02/19/16

Photo of new grass growth on east side of the site after initial seeding.



Photograph #21 02/19/16

Photo of new grass growth on west side of the site after initial seeding.

**Corrective Measures Implementation
Springdale Apartments - North End
Memphis, TN**



Photograph #22 04/22/16

Photograph of grass growth in the spring.



Photograph #23 06/01/16

Photo of grass growth in the summer.

**Corrective Measures Implementation
Springdale Apartments - North End
Memphis, TN**



Photograph #24 06/20/16
Photo of cap thickness modifications.



Photograph #25 07/06/16
Photo of second seeding event on newly disturbed surfaces.

**Corrective Measures Implementation
Springdale Apartments - North End
Memphis, TN**



Photograph #26 08/01/16
Photo of grass growth on re-seeded areas.



Photograph #27 10/11/16
Photo of grass growth covering site.